2019 Annual Closure and Reclamation Progress Report

Norman Wells, NT

Imperial

28 May 2020

417011-00096

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Company details

Worley Canada Services Ltd., operating as Advisian

Suite 500, 151 Canada Olympic Rd SW
Calgary, AB T3B 6B7
CANADA

Tel: 403-247-0200

PROJECT: 417011-00096- 20100-CA-REP-0001: 2019 Annual Closure and Reclamation Progress Report – Norman Wells, NT

Rev	Description	Author	Review	Advisian approval	Revision date
0	Issued as Final	ML M. Lord	MB M. Brown	 A. Haigh	28-May-20

U:\CAL\GBS\417011-00096 Norman Wells\20100 - 2020 IES Regulatory and Program Support\12.0_Reports\12.2_Final\417011-00096-20100-CA-REP-0001-2019 Annual Closure and Reclamation Progress - Rev 0 - CER.docx

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1 Introduction

This report has been prepared to meet the Terms and Conditions (Part 20) of Norman Wells Operations Authorization OA-1210-001 (Appendix 1) and of Part J, Section 4 of the Norman Wells Water Licence S13L1-007 (Appendix 1) issued by the Sahtu Land and Water Board (SLWB) and to provide the Canada Energy Regulator (CER) with a status update of closure and reclamation activities at the Imperial Oil Resources (IOR) Norman Wells site (the Site), as illustrated on Figure 1. Closure and reclamation activities at the Site are managed by Environmental and Property Solutions (E&PS); portions of the Site under E&PS management are illustrated on Figure 2. Operating areas across the Site are managed by the IOR onsite operations team and are not discussed in detail in this report.

1.1 Objective

The objectives of the Norman Wells Annual Closure and Reclamation (C&R) Progress Report are threefold:

- to provide the CER with a status update of the overall C&R program;
- to help regulatory inspectors assess alignment of C&R activities with commitments made in the Operations Authorization; and
- by addressing the above two objectives, to meet the Terms and Conditions (Part 20) of the Norman Wells Operations Authorization OA-1210-001 to provide such information.

Some of the information required by the Operations Authorization is provided separately by the IOR onsite operations team. Please note that all C&R activities associated with site closure are managed by Imperial E&PS.

1.2 Report Content and Format

The 2019 Annual C&R Report provides details of C&R work completed by E&PS in Norman Wells, in accordance with the reporting needs and specifications of the CER. Work completed to date is summarized in table format in Appendix 13 of this document. This annual report provides a summary of the work completed in 2019. Historical information can be found in previously submitted annual reports.

Table 1 presents the 2019 groundwater and surface water chemistry analytical schedule and historical sampling locations. Tables 2 through 9 present 2019 groundwater, porewater and surface water monitoring and chemistry data. Tables 10A through 12B present soil chemistry data. Tables 13 to 15 summarize biocell soil treatment analytical results.

A list of acronyms, abbreviations and definitions is provided in Appendix 2.

A summary of geochemical background conditions across the Site is presented in Appendix 3, with numerous supporting data tables and related figures included.

A table summarizing all identified Areas of Potential Environmental Concern (APECs), as well as a series of figures illustrating these APECs, is included as Appendix 4. A map showing all site APECs and known areas of natural oil seeps is included as Figure 9.

Conceptual Site Models (CSMs) for seven major sub-areas across the Site have been previously developed for inclusion in this report. These are presented in Appendices 5 through 11, and include details on the following specific areas:

- Battery #3 Flare Pit;
- Refinery Bank;
- B-38X Area;
- Mainland Sumps;
- Bear Island BT1;
- Bear Island Sumps; and
- Bear Island Flare Pit.

Trend charts summarizing groundwater analytical results for benzene, toluene, ethylbenzene, and chlorides is presented in Appendix 12. A summary of closure and reclamation works at the Site, including current status and planned future works, is presented in Appendix 13.

Consistent with the modified 2009 through 2018 report formats, this 2019 report also includes:

- larger scale figures illustrating monitoring well installations drilled from 2008 through 2019 over the entire Norman Wells lease area. Note that soil monitoring locations drilled prior to 2019 are not shown on these figures; and
- tables summarizing the soil and water laboratory analytical data from environmental site assessment (ESA) activities undertaken in 2019.

For clarity, this report provides a broad overview of annual (2019) C&R activities. The main report figures show 2019 soil and water sampling locations as listed in the tables, but do not attempt to illustrate exceedances of the applied guidelines and/or background concentrations for various geochemical parameters of interest across the entire Norman Wells field.

To further clarify soil and groundwater quality conditions primarily at the highest priority C&R sites currently managed under E&PS, the CSM Appendices 5 through 11 provide greater historical context and additional supporting figures focusing on selected details of the seven CSM sites listed above. These appendices include an updated of areas of environmental impact.

2 Occupational Health and Safety

E&PS has a formal occupational health management system in place for all work completed at the Site. Specifics of this management system are not discussed in this report. This section is intended to identify situations and/or materials that are periodically encountered during C&R activities, but are not normally encountered in the context of typical E&PS work at the Site, such as:

- asbestos;
- lead;
- PCBs; and
- mercury.

The management and removal of these materials has been described in previous reports. None of these materials were encountered during the 2019 work program.

In addition to the special materials management requirements noted above, E&PS applies a comprehensive set of occupational health and safety standards, protocols and procedures to every task undertaken at the Site. Of particular note are the extensive ground disturbance preparation procedures that are undertaken prior to conducting any intrusive drilling or excavation activities associated with the C&R program. All lead project personnel are trained and certified in ground disturbance procedures and each ground penetration location is typically surveyed and cleared by two independent survey companies, to ensure that all underground infrastructure within 30 m of the work area has been identified and clearly marked. Where necessary, infrastructure is exposed to visually confirm locations before ground disturbance is initiated.

3 Remediation Guidelines

3.1 General

E&PS has proposed that clean-up guidelines for the Site be consistent with established Canada-wide standards as defined by the Canadian Council of Ministers of the Environment (CCME). Given the northern setting of Norman Wells and certain unique aspects of the Site (i.e. discontinuous permafrost and the presence of natural oil seeps), the CCME concept of risk-based closure is deemed to represent the most appropriate remedial standard for the Norman Wells C&R program.

For the purposes of this report and as interim remediation targets, analytical results are compared to existing contaminated site assessment and remediation guidelines, as well as background soil and water conditions. Relevant background information is provided alongside the background geochemical parameters in Appendix 3. Any comparisons in this report to background conditions are in reference to the historically-established ranges in Appendix 3.

The Government of the Northwest Territories (NT) has adopted the soil guidelines established by the CCME, which are based on specific land uses (agricultural, residential/parkland, commercial and industrial). Current CCME Canadian Environmental Quality Guidelines (CEQG) are considered to be the most relevant and appropriate.

3.1.1 Soil

Soil analytical results have been compared to the CCME Soil Quality Guidelines for the Protection of Environmental and Human Health and to the CCME Canada-wide Standards for petroleum hydrocarbons (PHC) in Soil (PHC F1 to F4 only). For comparison of soil analytical data from C&R work conducted on the Mainland portion of the Norman Wells lease, CCME CEQG guidelines for Industrial land use have been applied. Soil analytical data from C&R work conducted on the natural Islands portion of the Site were compared to CCME CEQG for Parkland land use.

It is important to note that the CCME guidelines illustrated on the soil data tables in this report are used for generic assessment purposes only and do not necessarily indicate a risk to any specific environmental or human health receptor. The applied guidelines are consistent with the approved Interim Closure and Reclamation Plan (ICRP). The potable groundwater and vapour inhalation pathways have been excluded across all sites. Soil grain-size has been selected on a site-specific basis; however, most areas within the Site have been determined to be fine-grained.

3.1.2 Water

At present, no specific groundwater quality guidelines exist for the Northwest Territories. As a conservative measure, groundwater and surface water quality assessment parameters in this report and the C&R program in general are compared to the CCME Freshwater Aquatic Life (FWAL) guidelines, as well as background water quality conditions where available. It is important to note that exceedances of the FWAL values do not necessarily indicate a facility-related source and may reflect natural conditions.

The FWAL water quality guidelines for a number of trace metals vary depending on the pH and total hardness of the water. For the purpose of selecting appropriate guidelines for comparison to Norman Wells shallow groundwater and surface water samples, the pH value is considered greater than 6.5, and the total hardness as calcium carbonate ($CaCO_3$) is greater than 850 mg/L (very hard water). The 95th percentile values for groundwater samples from background locations in different hydrogeological units are as follows:

- for surficial sediments on the Mainland: pH of 8.1 and hardness of 1,253 mg/L;
- for surficial sediments on the islands: pH of 8.0 and hardness of 1,600 mg/L; and
- for shallow bedrock on the Mainland and the islands: pH of 8.5 and hardness of 350 mg/L.

Details of the background wells and calculated background geochemistry for the distinct hydrogeological units listed above are described further in Appendix 3.

3.2 Background Conditions

The CCME environmental quality guidelines have been used to screen site-specific data being collected at the Norman Wells site, unless background conditions for soil or water indicate that the guideline values are not appropriate or representative of actual Site conditions. Background information collected to date is further described in Appendix 3. Background soil or water parameter values which exceed the above-noted CCME guidelines are indicated and rationalized in Appendix 3. The reported background values or ranges are assumed to supersede the corresponding CCME guidelines if the background values are consistently higher than the CCME guidelines.

Each year, additional water samples are collected from selected background locations and added to the database. Results are reported in the attached data tables. The statistical background values for groundwater and soil were first calculated in 2013. Revised statistical analyses updated with additional data collected from 2013 to 2019 are summarized in Appendix 3.

As summarized in Appendix 3 (Tables A/B), the following statistical background categories have been defined for data evaluation at the Site:

- twelve soil and bedrock background categories (referred to as S-CAT-1 to S-CAT-12); and
- eight groundwater and surface water categories (referred to as W-CAT-1 to W-CAT-8).

4 Closure and Reclamation Activities

The following section details the 2019 C&R Program. A brief description and summary of work completed during 2019 is provided for each sub-area on the Norman Wells site. Portions of the Site where activities were not completed in 2019 have been omitted from this annual report but are included in the summary table in Appendix 13. The primary Norman Wells work areas are illustrated on Figure 2.

The summary table in Appendix 13 outlines the start date and current status of various C&R activities undertaken at each Norman Wells sub-area between 1996 and present day.

4.1 Water Licence Terms and Conditions – Schedule 7

In accordance with the Part J, Item 4 of the Norman Wells Water Licence S13L1-007, the following Table 4-1 lists information itemized in Schedule 7 which are to be included in this report, if applicable to closure and reclamation work.

Table 4-1 Summary of Schedule 7

Item	Item Description	Comments
a)	A summary of any closure and reclamation work completed during the year and an outline of work anticipated for the next year.	The purpose of the annual report is to provide a summary of the annual C&R activities which are discussed in Section 4 of this report. Section 6 and Appendix 13 outlines anticipated work for the following year.
b)	Activities related to the water intake facilities and water distribution infrastructure.	As the facility is still operational, these activities are not addressed. However, as the facility enters a shut down period, additional progressive activities will take place to achieve closure of the Site.
c)	Activities related to waste disposal sites and facilities.	As the facility is still operational, these activities are not addressed. However, as the facility enters a shut down period, additional progressive activities will take place to achieve closure of the Site.
d)	Activities related to the petroleum, chemical, and/or hazardous waste storage areas.	As the facility is still operational, these activities are not addressed. However, as the facility enters a shut down period, additional progressive activities will take place to achieve closure of the Site.
e)	Details related to the restoration of natural drainage and stream banks related to project activities.	Ongoing stream bank restoration activities. Programs discussed herein.
f)	Details related to the extent of soil and groundwater impacts and proposed remediation.	Ongoing assessment and remediation efforts. Programs discussed herein.

Item	Item Description	Comments
g)	Activities related to the oil collection system, especially any flowline(s).	As the facility is still operational, these activities are not addressed. However, as the facility enters a shut down period, additional progressive activities will take place to achieve closure of the Site.
h)	Activities related to surface water run-off facilities.	As the facility is still operational, these activities are not addressed. However, as the facility enters a shut down period, additional progressive activities will take place to achieve closure of the Site.
i)	Details of any site affected by unauthorized discharges and/or releases.	As the facility is still operational, these activities are not addressed. However, as the facility enters a shut down period, additional progressive activities will take place to achieve closure of the Site.
j)	Activities related to waterflood facilities and/or infrastructure.	As the facility is still operational, these activities are not addressed. However, as the facility enters a shut down period, additional progressive activities will take place to achieve closure of the Site.
k)	Activities related to the Central Processing Facility.	Groundwater monitoring completed at the Central Processing Facility. Program discussed herein.
l)	Activities related to the Artificial and Natural Islands.	Groundwater monitoring completed at the Natural Islands. Program discussed herein.
m)	Activities related to the former refinery and associated infrastructure.	Ongoing assessment and remediation efforts. Programs discussed herein.
n)	Activities related to the groundwater treatment facilities.	Start-up and operation of B-38X and Refinery Bank area groundwater treatment facilities. Programs discussed herein.
o)	Details on any other facility or infrastructure which could potentially impact land and/or water(s).	As the facility is still operational, these activities are not addressed. However, as the facility enters a shut down period, additional progressive activities will take place to achieve closure of the Site.
p)	Cataloguing of all closed wells and sumps, identifying the status of each, including any planned mitigation measures.	Closed wells and sumps sites discussed as related to 2019 activities.
q)	Activities related to revegetation.	Reclamation activities discussed herein.
r)	Post-closure monitoring plans for any facility and/or infrastructure.	Currently no sites in post-closure monitoring status.

4.1.1 Abandoned Wells and Sumps

In accordance with the Water Licence terms and conditions (Schedule 7, item p), the following table lists abandoned wells and sumps, their status, and planned mitigation. The 2019 C&R Program did not include work at all sites listed in Table 4-2 below. For a more comprehensive list of well and sump status please refer to Appendix 13.

Table 4-2 Summary of Closed Wells and Sumps

Facility Identifier	Location / Sub-Area	Current Status	Planned Mitigation
Cemetery Sump	Mainland West	Decommissioned and capped, screening level risk assessment complete. Surface restoration as of 2010.	Continued groundwater and vegetation monitoring, development of long-term management strategy.
C-27X Well Site	Mainland West	Well cut and capped in 2015, above-ground infrastructure removed. Phase II ESA completed. Supplemental Phase II ESA completed in 2016.	Reclamation as required to meet CCME Industrial guidelines.
C-27X Sump	Mainland West	Decommissioned and capped. Supplementary Phase II ESA works conducted in 2014 and 2015. Sump dewatered and capped in 2015. Liner placed over cap and additional material added on top of liner in 2016.	Continued groundwater and vegetation monitoring, development of long term management strategy.
E-27X Well Site	Mainland West	Well cut and capped in 2014, above ground infrastructure removed and Phase II ESA completed.	Reclamation as required to meet CCME Industrial guidelines.
E-33X Well Site	Mainland Central	Well cut and capped in 2014, above-ground infrastructure removed, and Phase II ESA completed. Supplemental Phase II ESAs completed in 2016-2019.	Reclamation as required to meet CCME Industrial guidelines.
B-30X Well Site	Mainland Central	Well was cut and capped in 2012. currently waiting for operational infrastructure to be removed prior to remediation. Supplemental Phase II ESA completed in 2019.	Reclamation as required to meet CCME Industrial guidelines.

Facility Identifier	Location / Sub-Area	Current Status	Planned Mitigation
B-33X Well Site	Mainland Central	Well cut and capped in 2009. Above ground infrastructure removed in 2010 and phase II ESA completed. Current site of soil washing pad operations for salt impacted soils from Battery 3 flare pit.	Reclamation as required to meet CCME Industrial guidelines.
B-35X Well Site	Mainland Central	Well was cut and capped in 2012. Remedial excavation required for source removal.	Reclamation as required to meet CCME Industrial guidelines.
B-38X Well Site	Mainland Central	Well is still operational. In-situ DPE remediation system in the surrounding area operates seasonally.	Reclamation as required to meet CCME Industrial guidelines.
B-38X Pit/Sump	Mainland Central	Excavated in 2007-08, area was recontoured and capped. Phase II ESA completed. Continued groundwater monitoring.	Reclamation as required to meet CCME Industrial guidelines.
Bosworth Creek Weir	Mainland Central	Weir was removed in 2005 and bank stabilization was completed.	Currently monitoring bank stabilization and re-vegetation.
B-42X Well Site	Mainland East	Well cut and capped in 2014, above-ground infrastructure removed, and Phase II ESA completed. Supplemental Phase II ESA completed in 2017.	Reclamation as required to meet CCME Industrial guidelines.
A-45X Well Site	Mainland	Remedial excavation for source removal and supplemental Phase II ESA undertaken in 2014 and 2015.	Reclamation as required to meet CCME Industrial guidelines.
Mainland Sumps 1 to 6	Mainland Sumps	Decommissioned and capped. Phase II ESA completed. Long term management strategy developed in 2014. Supplementary Phase II ESA completed in 2015. Depressions in Sumps 1, 3, 5 and 6 were dewatered, backfilled and recontoured with clean soil in 2016.	Continued groundwater, surface water and vegetation monitoring. Further monitoring for physical stability as required.

Facility Identifier	Location / Sub-Area	Current Status	Planned Mitigation
Bear Island Sumps 1–6	Bear Island	Decommissioned and capped. Supplemental Phase II ESA conducted in 2014. Additional Phase II delineation ESAs completed in 2016-2017. Caps on sumps 1 to 5 have subsided over time, and ponded water is present in these depressions.	Continued groundwater, surface water and vegetation monitoring, development of long term management strategy. Reclamation of select areas.
Bear Island 1X Well Site	Bear Island	Well was abandoned cut and capped in 2012. Phase II ESA completed by 2012, PHC impacted soil near wellhead removed.	Reclamation as required to meet CCME Parkland guidelines.
Bear Island Flare Pit	Bear Island	Remedial excavation for source removal and supplemental Phase II ESA undertaken in 2014. Supplemental Phase II ESAs completed in 2016-2017.	Reclamation as required to meet CCME Parkland guidelines.
O-29X Well Site	Goose Island	Well cut and capped in 2014, above-ground infrastructure removed, and Phase II ESA completed. Supplemental Phase II ESA completed in 2017.	Reclamation as required to meet CCME Parkland guidelines.
T-08X Well Site	Goose Island	Well cut and capped in 2015, above-ground infrastructure removed, and Phase II ESA completed.	Reclamation as required to meet CCME Parkland guidelines.
S-06X Well Site	Goose Island	Cut and Cap and Phase II ESA are on hold until operating infrastructure is decommissioned.	Reclamation as required to meet CCME Parkland guidelines.

4.2 Closure and Reclamation Activities as Related to Security Estimate

The 2014 Norman Wells Public Security Estimate summarized reclamation costs as related to certain facility groups and environmental management activities. Work progressed to date related to the security estimate is summarized in Table 4-3.

Table 4-3 Summary of Closure and Reclamation Activities as Related to the 2014 Security Estimate

CAPITAL COSTS	2014 Reclaim Model Description	Work Progressed to Date
WELLS AND FACILITIES	Well Abandonment and Flowline Cut and Cap activities	Wells are evaluated on a yearly basis to determine suitability for abandonment and are then progressed to the annual site wide abandonment program. Since the facility is still in operation, majority of the wells are still in use, but to date, 36 wells are abandoned. Abandoned wells are discussed in the Closure and Reclamation Summary in Appendix 13.
BUILDINGS AND EQUIPMENT	Building/Equipment (tanks, storage areas, office) decommissioning, HAZMAT, demolition, debris disposal to onsite WMF, and revegetation of all, including roads	Since the facility is still in operation and all buildings/equipment are still in use, decommissioning and demolition is currently not possible. Activities associated with decommissioning, demolition, hazardous material removal will take place once facility is shut down or when equipment is no longer being used for operation.
CHEMICALS AND CONTAMINATED SOIL MANAGEMENT	Phase I/II, remediation, reclaim sump areas, create Slurry wall for sumps, backfill	Throughout the years, several site-wide Phase I ESAs have been completed, and all APECs that were identified have been summarized in the Closure and Reclamation Summary in Appendix 13 with their current and historical information. Multiple initial and supplemental Phase II ESAs have been conducted, including one in 2019 as discussed in Section 4.4. Phase II ESAs conducted prior to 2019 are discussed in their respective years' reports and summarized in the Closure and Reclamation Summary in Appendix 13. Two biocells were operating in 2019, treating approximately 3,300 m^3 of hydrocarbon impacted soil. At the end of the 2019 treatment season, 3.091 m^3 of soil had been successfully treated to meet CCME Industrial guidelines as discussed in Section 4.7.1.4. An approximate volume of 17,100 cubic metres of soil has been treated since the original biocell construction in 2001.
CONSTRUCTION AND OPERATION OF ON-SITE LANDFILL	WMF tasks for regulatory, storage, revegetation, surface cap, MW install	Waste Management Facility application is still underway, and upon approval, construction and operation activities will commence.
SURFACE AND GROUNDWATER MANAGEMENT	Groundwater remediation on Mainland East and Central, but does **not**	Three groundwater remediation systems have operated annually since 2003. A dual-phase extraction system (DPE) operates seasonally in the B-38X and Former Fire Training Area. To date,

CAPITAL COSTS	2014 Reclaim Model Description	Work Progressed to Date
	include groundwater monitoring	approximately 65,460 kg of hydrocarbons have been removed via vapour and dissolved phase extraction as discussed in Section 4.8.2.3. A hydraulic containment and groundwater remediation system operates year-round at the former Refinery Bank area and a multiphase extraction (MPE) system operates seasonally in the same area. Collectively, approximately 53,649 kg of hydrocarbons have been removed via vapour, free-phase and dissolved phase extraction as discussed in Section 4.8.7.4.
INTERIM CARE AND MAINTENANCE	Maintenance work like winter road, road maintenance, fuel, admin staff, electrician, security guards, etc.	Interim care and maintenance of site infrastructure is generally the responsibility of the Operations team and is driven by site needs for continued production. Interim care and maintenance as directly related to closure and reclamation activities is limited to the biocell treatment system and the groundwater remediation treatment facilities. Closure and reclamation activities rely on available site resources, such as electrical power and passable roads, and utilize available site personnel, such as electricians, on an as needed basis.
MOBILIZATION DEMOBILIZATION	Equipment such as service rigs, dozer, excavator, crane, dump trucks, small tools, worker airfare.	To conduct majority of the annual abandonment, assessment and remediation work, equipment has to be mobilized/demobilized to site. For ex: abandonment requires drill rigs to be on site, whereas remediation activities are conducted using an excavator and dump trucks. As the scope changes in magnitude on a yearly basis, mobilization activities will also change accordingly.
POST-CLOSURE MONITORING AND MAINTENANCE	Landfill maintenance and monitoring, as well as GWM monitoring program (assumes 25 years of maintenance)	The site has not entered the post-closure monitoring and maintenance phase as it is still in operation. Although the Site is still operational, a site-wide groundwater monitoring program has been implemented since 1997 and continues to be optimized with the addition of new wells or adjustments to the analytical schedule on an annual basis. Once the facility operation shuts down, post monitoring and maintenance will become a multi-year scope involving closure activities.
ENGINEERING		Engineering analysis is used to evaluate and design the annual well abandonment program as well as propose assessment/remediation work to characterize, delineate and risk assess contaminant plumes. A detailed engineering analysis is currently underway to design the proposed Waste Management Facility which will act as an on-site resource for remediation.

CAPITAL COSTS	2014 Reclaim Model Description	Work Progressed to Date
		Engineering analysis will be heavily implemented as the facility starts decommissioning and production ceases. During this period, detailed engineering will be required to decommission the site infrastructure including storage tanks, pipelines and the central processing facility, and as well as progressing with remediation and closure activities.
PROJECT MANAGEMENT		Project management is directly related to the level of effort required to actively progress reclamation on site and strategize for future closure activities. It will remain an active component of closure and reclamation activities until the facility is decommissioned and reclaimed.
HEALTH AND SAFETY PLANS/MONITORING & QA/QC		All closure and reclamation activities are, and will be, completed with consideration for the health and safety of the workers, the environment and the community. Annually, a significant amount of pre-planning is conducted to implement health and safety plans before progressing any work in the field; this includes developing training plans, recruiting qualified workers, and conducting safety inspections. Health and safety will remain an active component of closure and reclamation activities until the facility is decommissioned and reclaimed. For all groundwater monitoring, assessment and remediation work on site, samples are collected, submitted and reported using QA/QC procedures. QA/QC data is incorporated in the consultant and laboratory reports, and Imperial maintains Standard Operating Procedures for QA/QC requirements based on industry best practices and regulatory guidance.
BONDING/INSURANCE		N/A
CONTINGENCY		N/A
MARKET PRICE FACTOR ADJUSTMENT	N/A	N/A
INFLATION ADJUSTMENT	Using inflation data from Q2 2013-Q2 2014	N/A

4.3 Groundwater and Surface Water Monitoring Overview

The active groundwater monitoring wells and surface water sampling locations in each of the Norman Wells areas current to December 2019 are summarized in Table 4-4 below. Groundwater and surface water locations have been monitored since 1997 on an annual basis. Sample locations and associated sample

analyses have been modified as needed. These sampling locations constitute part of the monitoring program for areas where C&R activities have occurred, are ongoing, or are anticipated to occur. The monitoring program has been optimized annually with the installation of new wells, or re-activation of existing wells as needed. Wells or analytical parameters may be removed from scope periodically, when they are shown through temporal data analysis, to no longer be required. Decisions to reduce or increase the number of monitoring wells and analytical package in different areas are based on a combination of statistical analysis of data, appropriate spatial coverage and data needs.

Table 4-4 Summary of Actively Monitored Locations Excluding Background

Monitoring Area	Actively Monitored Locations			
	Overburden	**Bedrock**	**Surface Water**	**Total [1]**
Mainland West (excluding sumps)	3	4	0	7
Mainland Central	27	15	3	45
Mainland East (excluding Refinery)	23	0	2	25
Former Refinery	40	25	0	65
Sumps (Mainland)	19	10	0	29
Bear Island	40	0	12	52
Goose Island	5	0	1	6
Totals	**157**	**54**	**18**	**229**

Note: [1] Totals do not include certain active Operations monitoring wells (i.e. Goose Island O-18X network which is reported under separate cover)

Water sampling programs have been rationalized and optimized in recent years as follows:

- For the most part, wells greater than 15 metres (m) depth are not sampled. These wells were generally removed from the groundwater program because historic data have shown that natural occurrences (i.e. not facility-related) of hydrocarbons and/or saline groundwater tend to dominate in the deeper monitoring locations.
- If a measurable thickness of free-phase hydrocarbons is present, groundwater from the well is not sampled, but fluid levels are recorded. Additionally, where facility-related free phase hydrocarbon liquid is encountered it is periodically removed from the well (using a dedicated bailer or other methods) and disposed of at the F-31X wastewater treatment and injection facility.
- All wells in the network having less than three consecutive years of chemistry data are sampled for full routine potability parameters (with the exception of fluoride), benzene, toluene, ethylbenzene and xylene (BTEX) compounds, petroleum hydrocarbon fractions F1 and F2, phenols and dissolved metals.

This comprehensive schedule is intended to provide several years of analytical data from which trends may be observed at these relatively new monitoring locations.

- Monitoring wells in the network having more than three consecutive years of chemistry data are sampled for a reduced analytical schedule. Monitoring at these wells is intended to maintain an adequate spatial coverage for the overall program in relation to potential receptors, for parameters of interest based on statistical trends in historical data and expected chemicals of potential concern (COPC) based on the current and historical operations nearby.

Groundwater and surface water analytical results from 2016 to 2019, where available, are presented in Tables 3A through 9. Table 1 presents the 2019 groundwater and surface water chemistry analytical schedule and includes the list of wells sampled to assess background conditions. The analytical program is reviewed and optimized annually based on the criteria listed above.

Overall site groundwater flow direction on the mainland areas of the Site is inferred to be predominantly towards the Mackenzie River, with localized flow influenced by Bosworth Creek, sumps, and frozen soils (discontinuous permafrost). Overall site groundwater flow direction on Bear and Goose Island is influenced by local streams, sumps, lakes and wetland areas in addition to the discontinuous permafrost.

It should be noted that due to the ice scouring effects on the Mackenzie River shoreline during spring ice breakup, monitoring wells installed within 100 m of the river may be subject to damage or destruction each year. Frost heave and dry or frozen well conditions may also prevent a sample from being collected at a monitoring well. The exact number of wells monitored, therefore, may change from year to year.

4.4 Porewater Sampling

In addition to the groundwater and surface water monitoring program described in Section 4.2 above, porewater sampling was conducted at 17 inferred groundwater seep locations on the Mackenzie River foreshore near the Refinery Bank. Porewater analytical results from 2018 and 2019 are presented in Tables 3B through 8B.

The discharge of groundwater to the Mackenzie River and the potential transport of chemicals of potential concern (COPCs) to the aquatic environment can be better understood by sampling shallow porewater near the wetted perimeter of the river. Groundwater can move to surface through porewater in the hyporheic zone, which is where groundwater and surface water interact. Porewater is a pathway to the surface aquatic environment and receptors. Understanding porewater chemistry is a key step in assessing potential risks to aquatic receptors.

4.5 Phase II Environmental Site Assessments

The sites listed in Table 4-5 were selected for Phase II ESAs to either further delineate previously identified impacts, or to assess the potential presence of impacts related to former above ground storage tanks (ASTs).

Table 4-5 2019 Phase II ESA Rationale

Facility Identifier	Location / Sub-Area	APEC No.	Rationale
Former AST and Pit	Mainland West	MW-13	Assess potential soil impacts
B-30X Well Site	Mainland Central	MC-23	Delineation sampling
E-33X Well Site	Mainland Central	MC-45	Characterization sampling
Former Fire Training Area	Mainland East	ME-6	Characterization sampling
Former Refinery Area – Former Tank 201	Mainland East	ME-7	Delineation and characterization sampling
Former Refinery Area – Former ASTs and Upper Bench/Terrace	Mainland East	ME-7	Characterization sampling

Phase II ESAs in 2019 included the advancement of 52 boreholes for soil sampling and the installation of three groundwater monitoring wells. Assessments focused on areas where data gaps had been identified during previous investigations, and on delineation for future remediation planning. Soil analytical results are presented in Tables 10A through 12B.

4.6 Vegetation Assessment

Individual areas are being monitored for physical stability (visual inspection for backfill settlement) and/or re-vegetation success following surface reclamation activities. This monitoring was conducted at the following areas in 2019:

- ARB remedial excavation area; and
- Bosworth Creek east bank.

These areas are discussed in more detail in Sections 4.8.1.1 and 4.8.3.2 respectively.

4.7 Mainland West

The Mainland West area includes the land bounded by Bosworth Creek and the IOR barge dock to the east, the J-16X well site to the west, the Mackenzie River to the south and the Site access ring road and fire break to the north (Figures 2 and 3A).

C&R works undertaken in Mainland West during 2019 included groundwater sampling, borehole drilling and soil sampling. C&R work was conducted at the following Mainland West areas in 2019:

- Central Processing Facility (CPF);
- Former AST and Pit, West of the Former Cemetery Sump;
- E-27X Well Site; and,
- F-28X Well Site.

Two other sub-areas within Mainland West, the Cemetery Sump and C-27X Sump, are discussed in Sections 4.10.1 and 4.10.2, respectively. The following subsections provide summaries for Mainland West areas where C&R activities were undertaken in 2019. Data collected from background locations is summarized in Appendix 3.

4.7.1 Central Processing Facility (CPF)

The Central Processing Facility (CPF) is located north of the Mackenzie River and west of Bosworth Creek, near the west end of the developed Mainland area (Figure 3C). Based on review of aerial photographs, construction of the CPF began around 1983. The CPF was operational until 2017, when oil production works were temporarily suspended pending repairs to the Enbridge pipeline that services the facility. In November 2018 start-up of major equipment in the CPF was completed, and the facility was once again operational at limited capacity while production was ramped up for the remainder of 2018.

Restricted access due to the presence of operational infrastructure has limited the extent of intrusive historical environmental site assessments within the CPF yard. Although efforts have been made to characterize and delineate identified sources/impacts within the facility, facility decommissioning will be required before full characterization and delineation of potential environmental issues can be achieved.

A network of monitoring wells has been installed in and around the current CPF footprint, and these serve to assess the potential for migration of facility-related impacts towards potential nearby receptors (i.e. Bosworth Creek).

4.7.1.1 Groundwater Monitoring

Fourteen groundwater monitoring wells have been installed in and around the CPF since 1997, three of which remain part of the active groundwater monitoring network and were sampled in 2019. Results of the 2019 sampling and analytical program are summarized as follows:

- the water level at CPF 97-2-7 was observed to be approximately 1.5 metres lower than the 2018 water level. Water level fluctuations have been identified at this well historically;
- measurable non-aqueous phase liquid (NAPL) was not detected in the three CPF wells monitored;
- field-measured pH values were within the acceptable FWAL guideline range but the field-measured electrical conductivity (EC) at one location exceeded the applicable background level; and
- exceedances of both background concentrations and applied guidelines were observed at one of the three sampled locations for dissolved selenium and dissolved uranium.

Monitoring well locations are shown on Figure 3C.

4.7.2 E-27X Well Site

The E-27X well site is located approximately 150 m south of the CPF Backwash Pond (Figure 3C), within the same well pad as F-25X, G-26X, H-27X and G-28X. The E-27X well site was selected to represent older wells located between the Mackenzie River and the majority of the Mainland infrastructure.

In 2014, the E-27X wellhead was abandoned, adjacent underground utilities were cut and capped and soil samples were collected from around the wellhead and underground utilities. A preliminary Phase II ESA, consisting of three delineation test pits around the former wellhead, was also completed following infrastructure abandonment activities in 2014.

4.7.2.1 Groundwater Monitoring

Two groundwater monitoring wells exist within the E-27X area; however, one of these wells has historically been dry or frozen and has thus been removed from the analytical schedule. The remaining well is installed in the shallow bedrock groundwater-bearing zone. Results of the 2019 sampling program are summarized as follows:

- field-measured parameters were not measured as there was visible sheen present on the water. However, measurable NAPL was not detected in the monitoring well; and
- the reportable detection limit for dissolved nitrite (as N) was raised above the applied CCME FWAL guideline due to sample matrix interference.

The monitoring well location is shown on Figure 3C.

4.7.3 Former AST and Pit, West of Former Cemetery Sump

The former AST and Pit (APEC MW-13) is located immediately west of the Cemetery Sump, approximately 100 m north of the Norman Wells town cemetery (Figure 3B). A review of historical aerial photographs from 1987 indicated that one AST of unknown volume and contents was temporarily present at the site. A Phase II investigation in 2016 included five boreholes in the general location of APEC MW-13 which identified no evidence of soil impacts.

4.7.3.1 Phase II Environmental Site Assessment

Three boreholes were advanced in the area of the former AST, west of the former Cemetery Sump.

There were no reported exceedances of the applied CCME Industrial fine-grained guidelines and corresponding background concentrations in the locations/samples analyzed for all parameters analyzed (general and salinity, PHC, metals and trace elements)

Borehole locations are shown on Figure 3B, while soil data are provided in Tables 10A, 11A and 12A.

4.7.4 F-28X Well Site

The F-28X area is located approximately 50 m east of the F-28X well pad, on a slope near the banks of the Mackenzie River, up-gradient from an area of historical oil seeps on the river shore (Figures 3C and 9). A Phase I Investigation identified a former flare pit at this location from historical air photos. Previous environmental investigations undertaken since 1997 around the F-28X well head location had confirmed concentrations of hydrocarbons exceeding applicable guidelines in deep soil and bedrock down-gradient from the well head, and metal concentrations in surface soil exceeding applicable guidelines around the well head.

In 2018, a supplementary Phase II ESA was conducted in the vicinity of a suspected historical dump site adjacent to the F-28X Well Site. Soil samples were collected at a lower terrace similar to the river shore elevation while the remaining and on the upper terrace at a similar elevation to the F-28X Well. There were no reported Industrial use guideline exceedances in any of the analyzed soil samples from the test pit locations.

4.7.4.1 Groundwater Monitoring

Three groundwater wells within the F-28X area were monitored during the 2019 program. All three monitoring wells contained measurable NAPL, with corrected thicknesses of 37 millimetres (mm), 32 mm, and 848 mm. As per standard operating procedure, the wells were subsequently not sampled.

The monitoring well locations are shown on Figure 3C. NAPL in this area is interpreted to be primarily naturally occurring crude oil seepage from the upper bedrock.

4.8 Mainland Central

The Mainland Central sub-area includes the land area bounded by Bosworth Creek and the IOR barge dock to the west, the former Battery #3 to the east, the Mackenzie River to the south and the Site access ring road to the north (Figures 2 and 4A).

C&R work in 2019 included groundwater and surface water sampling, borehole drilling and soil sampling, and vegetation assessments. C&R work was conducted at the following Mainland Central areas in 2019:

- Biocells (Biocell 1 and Biocell 2);
- Battery #3 Flare Pit (BT3);
- F-31X Well Site (F31);
- G-32X Well Site (G32);
- E-33X Well Site (E33);
- B-30X Well Site (B30);
- Well Services/Warehouse Yard (WSY); and,
- Bosworth Creek and C-30X/C-32X Well Sites (BOS/C30).

The following subsections provide summaries for areas where C&R activities were undertaken in 2019. Data collected from background locations is summarized in Appendix 3.

4.8.1 Biocells, ARB and B-33X Area

The Biocell area is located on the Mainland, east of the production warehouse and north of the C-32X well site and consists of Biocell 1 (formerly Biocell A/ARB and Biocell B/Operations Biocell/OPB), Biocell 2 (formerly referred to as "Yard D"), and the area of former production well B-33X (Figures 4A/D). Biocell operations for soil hydrocarbon treatment are described in Sections 4.8.1.4 and 4.8.1.4.

Previous investigations have confirmed the presence of benzene, ethylbenzene, xylenes and PHC F1 at levels above CCME Industrial guidelines in the soils directly south of the current biocells footprint. These hydrocarbon impacts pre-date Biocell 1 construction and operation, which commenced in 2001. A second Biocell (Biocell 2) was constructed directly east of Biocell 1 in 2014.

In 2013, a Phase II ESA was conducted, and remedial excavation works were initiated at the site. In 2014, a supplemental Phase II ESA was completed alongside continuation of the remedial excavation. Further remedial excavation works were conducted in 2015 with the removal of 6,520 m^3 of impacted soil, much of which was treated in the on-site biocells and reused as backfill at various locations. The excavation around the warehouse access road was continued during the 2016 field season.

The former production well B-33X, situated southwest of Biocell 1 and Biocell 2, has been abandoned and capped. The B-33X Well Site area is currently used as a soil treatment pad, which was constructed by Englobe Corporation (Englobe) in 2016. A process water pond, two amendment tanks, one freshwater storage tank and an equipment container were also installed adjacent the soil treatment pad. A discussion of the Englobe treatment cell is included in Section 4.8.4.1. A supplementary Phase II ESA around the Englobe soil washing pad was also conducted in 2017 to provide sentinel wells around the facility.

In 2019, C&R activities included groundwater and surface water monitoring and continued remedial activities in the biocells and the ARB excavation area.

4.8.1.1 Abandonment and Reclamation Biocell (ARB) Reclamation

Following remedial soil excavations in the ARB area during 2014-16 (noted above), a reclamation assessment was conducted in June 2017 to determine the current site conditions and to identify any deficiencies with respect to vegetation, topsoil and landscape parameters. Seven vegetation plots located south of Biocell 1 were assessed and soil samples were collected from three of the plots for analysis of soil nutrient composition, as related to reclamation suitability.

In 2017, soil was imported to the site from the Biocell and was used to re-contour the site for improved runoff drainage and to minimize ponding of surface water. Areas of the site with higher percentages of bare ground were surface roughened and reseeded.

In 2018 low vegetation cover was observed within the areas with recent soil disturbance, consisting of natural infill and seeded grass from 2017. A woody species planting program was completed and seedling growth was evaluated during the 2018 program. Good survival, with only minimal mortality was observed. The east area of the Site was mulched in preparation for potential remedial activities, but no further disturbance was required. This area showed good vegetation establishment and was not included in the revegetation monitoring area in 2018.

2019 ARB Vegetation Activities

Photo 4-1 shows vegetation south of Biocell 1 at the ARB reclamation area as of summer 2019. Planted green alder had poor growth between years, as many main stems had died, and the seedlings were shorter in 2019. The leader stems for all planted green alders also experienced die back; however, new growth was noted at the base of some plants. By comparison, the willow and balsam poplar shrub species that had

naturally established grew in height. Of the seeded grass species, slender wild rye had the highest germination and all species were observed except for the narrow false oat.

To improve vegetation establishment, the area was decompacted and the soil was amended with mulch-soil mixture to improve soil structure and water retention, and potentially improve soil nutrient levels.

Photo 4-1 Vegetation Regrowth at ARB Remedial Excavation

4.8.1.2 Groundwater and Surface Water Monitoring

Sixteen groundwater monitoring wells were sampled during the 2019 sampling program for the biocells area (ARB and BC2 series wells, Table 4A and Figure 4D). Two surface water monitoring locations adjacent to the soil treatment pad (at the former B-33X well site) were also sampled in 2019. Results of the 2019 sampling program are summarized below:

- measurable NAPL was not detected at any monitoring location;
- field-measured pH values fell outside the FWAL guideline range at two monitoring wells and one surface water sampling location. All remaining field-measured pH values were within the FWAL guideline range and below the calculated background value for surficial sediments;
- exceedances of both calculated background concentrations and applied guidelines were observed at four of the sixteen sampled monitoring wells for one or more parameters including phenols (one well), dissolved arsenic (four wells), dissolved iron (three wells), and dissolved selenium (one well);

- exceedances of both calculated background concentrations and applied guidelines were observed at one of the two surface water samples for total selenium.

Monitoring well locations are shown on Figure 4D.

4.8.1.3 Biocell Operations

In 2001, Imperial constructed two synthetically-lined, engineered biocells for batch treatment of hydrocarbon-affected soils. Soils were transported to the biocells from various locations across the Site, after they had been appropriately characterized and deemed suitable for potential bioremediation.

In 2012, the two original biocells were decommissioned and replaced with a single larger capacity engineered biocell (Biocell A, now Biocell 1). In 2014, an identical cell (Biocell 2) was constructed directly to the east of Biocell 1 and commissioned for use in 2015 (Figure 4A).

An enhanced bioremediation trial initiated in 2014 continued throughout the 2015 and 2016 field seasons. The trial was designed to test use of surfactants and chemical oxidants to enhance treatment of petroleum hydrocarbon and polycyclic aromatic hydrocarbon impacted soils. Activities related to the enhanced bioremediation trial (i.e. treated soil monitoring) are on-going. An approximate volume of 17,100 cubic metres of soil has been treated since the original biocell construction in 2001.

4.8.1.4 2019 Biocell Activity

In 2019, windrowed soil in Biocell 1 and 2 was treated between June and September by an excavator equipped with either a standard clean-out bucket or a twister bucket attachment. No new soil was accepted into the biocells in 2019.

Fluid levels in the biocells' sumps were monitored weekly, at a minimum, or after major rainfall events. Fluids were periodically removed from the sumps to avoid any potential for overflow. Accumulated fluids were transported to the F-31X ("Grizzly Tank") injection well for disposal. Fluids were tracked by source, destination, date and volume. An estimated 1,261 m^3 of fluids were removed from the biocell sumps in 2019.

Biocell 1 contained 198 m^3 of PHC impacted soil in varying stages of treatment, as of October 2019.

Biocell 2 does not contain any soil requiring further treatment. Soil remaining in Biocell 2 was sourced from Battery 3 for temporary storage.

A total of 3,091 m^3 of soil successfully treated to CCME Industrial Fine Surface soil guidelines was removed from the biocells and used as sump capping material in the Mainland Sumps area to promote surface water draining away from the sumps. Remaining treated material was stockpiled adjacent to the entrance of the Mainland Sumps area. Future use of stockpiled soil is to be determined and end-use will be governed by land use and relevant guidelines.

4.8.2 B-30X Well Site

Geophysical surveys (EM 38, 31 and 61) were completed over the B-30X well pad area in June 2012. The surveys identified several zones of terrain conductivity elevated above the interpreted background levels for this area. Elevated EM 38 terrain conductivity values were denoted west and north of the wellhead. The well was cut and capped in July 2012 and a Phase II ESA was completed. A supplementary Phase II ESA was conducted in 2013 to further identify and assess potential areas of impact to soil and groundwater.

The B-30X area was selected for a CO_2 soil monitoring program in 2015 and 2016 and included the deployment of forced diffusion chambers and CO_2 traps in June and September. A supplemental Phase II ESA was completed in 2017. Petroleum hydrocarbon impacts are present in soils and groundwater around the former B-30X well site.

2019 C&R activities included a supplementary Phase II ESA to further characterize and delineate previously identified soil impacts and groundwater monitoring.

4.8.2.1 Phase II Environmental Site Assessment

The 2019 Phase II ESA included the advancement of six boreholes, one of which was completed as a monitoring well. Industrial land use guideline exceedances were identified at four of the boreholes for sodium adsorption ratio (SAR), PHC F1, PHC F2, PHC F3, and/or PHC F4. Borehole locations for 2019 work are shown on Figure 4B. Soil quality data are provided on Tables 10A, 11A and 12A.

Soil PHC data (Table 11A) indicates exceedances of both the applied guidelines and inferred background values for PHC F1, -F2 and -F3 primarily from 2.5 to 7.0 metres below ground surface (mbgs). These soil impacts apparently extend more than 150 m south of the former B-30X wellhead but appear to be effectively delineated within a shorter distance east and west of the former wellhead.

4.8.2.2 Groundwater Monitoring

A total of nine B30 series monitoring wells, associated with the B-30X well site area, were included during the annual 2019 groundwater monitoring program as shown on Figure 4D. One of the wells had limited water at the time of the monitoring event and could not be sampled as part of the 2019 sampling program. The remaining groundwater monitoring results are summarized as follows:

- measurable NAPL was not detected at any of the monitoring wells, however sheen was observed in the newly installed monitoring well;
- field-measured pH values fell outside the FWAL guideline at three monitoring wells. All remaining field-measured pH values were within the FWAL guideline range and below the calculated background value for surficial sediments;
- exceedances of both applied background concentrations and guidelines were observed at four of the seven sampled monitoring wells for one or more parameters including phenols (four wells), benzene (two wells), toluene (two wells), dissolved arsenic (three wells), dissolved iron (three wells), dissolved selenium (one well), and dissolved zinc (one well); and

- dissolved PHC concentrations reported for two local, down-gradient monitoring wells indicate that the PHC groundwater impacts at this location do not extend more than 40 m west of the former B-30X wellhead but exceedances of background conditions were noted approximately 150 m south.

Monitoring well locations are shown on Figure 4D.

4.8.3 C-30X/C-32X, Bosworth Creek and Bosworth Delta Area

Bosworth Creek effectively bisects the Mainland area from north to south, as illustrated on Figure 4A. The focus of early Bosworth Creek C&R activities was the removal of a weir formerly located underneath the lower Bosworth Creek bridge. After the weir removal in 2005 and the subsequent major decrease in local creek water levels, the focus shifted to creek bed and bank restoration activities, and characterization of surface water quality, as well as fish habitat assessment.

In 2009, a surface water quality monitoring program was initiated in Bosworth Creek. In 2010, the fish habitat assessment was initiated in conjunction with the surface water sampling program. In 2011, surface water quality, fish habitat, and benthic invertebrates monitoring activities were continued. In 2012, only surface water quality monitoring was conducted. In 2013, the monitoring program was reduced to only include select locations.

Surface restoration activities on the east Bosworth Creek bank have been in progress since 2006, and have included soil characterization, debris and impacted soil removal, asbestos pipe wrap removal, and erosion control. In 2016 and 2017, visual assessments of previous slope stabilization and revegetation works were completed.

The C-30X well site is located approximately 100 m southwest of the Production Warehouse and 150 m north of Bosworth Creek (Figure 4D). Two historical flow line failures were reported in a 30 m stretch of line transporting crude oil and produced water from the C-30X well site to Land Terminal 11 (LT11) at the former Battery #3 area. The line failures occurred near the C-32X well site. The flow line release area south of the C-32X well was identified as an area of interest, and one groundwater monitoring well was installed in 2010. Groundwater and surface water monitoring down-gradient of the release site continued in 2017, 2018 and 2019.

A summary of the 2019 C&R activities is included below.

4.8.3.1 Groundwater and Surface Water Monitoring

The majority of groundwater monitoring wells installed historically on the Bosworth Delta and in the Bosworth Creek valley have been damaged or destroyed by seasonal ice break-up within a few years of installation, and many have been subsequently abandoned. The current monitoring network in the Bosworth Creek valley consists of one monitoring well, four drive point piezometers and one surface water location (Figure 4D).

One drive point contained insufficient water to sample at the time of the site visit and field parameters were not measured at three drive point piezometers as there was limited water available in these locations at the time of sampling. One monitoring well, three of the four drive point piezometers, and the surface

water location were sampled in July as part of the 2019 program and a summary of the results is provided below:

- measurable NAPL was not detected at any of the monitoring locations;
- the field-measured pH value fell outside the FWAL guideline range at one monitoring well. Remaining field-measured pH values were within the FWAL guideline range and the calculated background chemistry value for bedrock-hosted groundwater; and
- Exceedances of both applied background concentrations and guidelines were observed at the monitoring well and one of the drive points for one or more parameters including chloride (one drive point), phenols (one well), and dissolved iron (one well).

4.8.3.2 Bosworth Creek Enhancement

An erosional area was identified approximately 500 m upstream from the Mackenzie River, and 30 m upstream from the Lower Bosworth Creek bridge. The area had been previously disturbed during historical flowline crossing construction, and by subsequent remedial activities on the east bank of Bosworth Creek between 2006 and 2009. Site restoration efforts were initiated in 2009, including transplanting native trees and shrubs to expedite the growth of riparian vegetation and enhance the fish habitat in Bosworth Creek.

Revegetation activities were undertaken in 2009, 2012, and 2014-2016. Slope stabilization activities were conducted in 2014-2015 but have had limited success due to various factors including soil slumping.

Visual assessments of previous slope stabilization and re-vegetation works were completed in September 2016, during which several erosion control measures were identified as requiring maintenance to prevent further erosion and soil loss. A subsequent inspection in 2017 identified signs of soil instability, including slumping, erosion, and surface cracking. Silt fencing was identified as requiring maintenance in order to prevent future undercutting and erosion/soil loss. An assessment of revegetation success in 2017 indicated encroachment of natural species, although the success rate of willow staking has proven to be poor at this location. During a 2018 assessment slumping of the rip rap and silt fence was observed. Additionally, transverse cracks had increased in size since first observed in 2017 and were filled in during 2018 activities. In addition to the seeded grasses, thirteen native herbaceous species were observed in trace amounts within the site in 2018. Fertilizer packs were planted in 2018 next to dominant woody species on the terraces.

2019 Bosworth Creek Vegetation Activities

The Bosworth Creek Enhancement Plan focused on improving the growth of riparian vegetation on the upper portion of the streambank at the site. Photo 4-2 shows the condition of the slope as of summer 2019.

Slope stabilization effectiveness has improved as there is no sign of slumping, or movement of the Geojute® and rock armour since 2018. Loss of surface soils from the terraces was observed in 2019. These areas were backfilled with approximately 15 cm of mulch-soil material consisting of a mixture of topsoil and coarse woody debris. Further monitoring will determine if the mulch-soil material will improve vegetation establishment.

The grass mix seeded in 2014 and 2016 showed low establishment during the 2018 and 2019 assessments. A single alien species, common dandelion was observed in trace amounts. In addition to the seeded grasses, 11 native herbaceous species also were observed in trace amounts within the Site, and overall species richness increased compared to 2018. The mulch-soil mixture may increase vegetation establishment because of the addition of plant propagules, topsoil material, soil microbes, and fungi.

Woody species establishment from natural encroachment was evenly distributed across the Site, with some areas of lower establishment on steeper areas of the slope. Natural regeneration comprised most of the woody species present. It is not clear how many of the planted stakes survived, as dead stems had been removed in previous years for safety reasons; however, growing stakes were not apparent so it is thought that most had died. Woody species such as willows, prickly rose, and balsam poplar appear to have primarily regenerated naturally.

Photo 4-2 Bosworth Creek East Bank Revegetation and Overview of Terraces

4.8.4 Former Battery #3, and Battery #3 Flare Pit

The former Battery #3 site is located on the east side of Bosworth Creek, approximately 200 m north of the Mackenzie River. Battery #3 was operational from the 1940s until circa 1990. C&R activities on the site started in 1997 with decommissioning and dismantling, followed by detailed site characterization (geophysical surveys, soil and groundwater investigations). The Battery #3 site includes a former flare pit area, a former tank farm area and a former process area. Active facilities in the area include wellsite G-35X and the Land Terminal #11 building (also referred to as the LT11 satellite).

A CSM developed for the Battery #3 Flare Pit is presented in Appendix 5.

Previous investigations and a 2014 Remedial Action Plan identified an area of salt and hydrocarbon impacted soil underlying, and down-gradient of, the former flare pit. The zone of impact extended to a depth of approximately 5 m below ground surface.

In early 2016, Englobe Corporation of Quebec (Englobe) was contracted to construct a soil treatment cell and leachate collection pond at the former B-33X Well Site to the north of the proposed excavation area. The soil treatment strategy was soil washing, primarily for the purpose of reducing soil chloride concentrations. Following cell construction, a remedial excavation was completed at the former Battery #3 Flare Pit area to excavate impacted soil and transport it to the treatment cell for on-site remediation. Approximately 5,760 m^3 of soil was excavated, with approximately 5,000 m^3 transported to Englobe's cell for treatment. The remaining soil was transported to Biocell 2 for storage until the next treatment cycle. Treatment of the chloride impacted soil in the cell was not continued during the 2017-18 field seasons.

Additional Phase II ESAs were completed in 2017 and 2018 in the area of a former soil landfarm and a potential dump site area north of the former Battery #3 flare pit excavation area.

The 2019 C&R activities included continued groundwater monitoring and soil remediation activities, as summarized below.

4.8.4.1 Soil Remediation

The soil washing pilot remediation system was continued during the 2019 field season and included trial treatment of 5,000 cubic metres (m^3) chloride impacted soil in the Englobe treatment cell. A total of 5,052 m^3 of effluent water produced during the trial soil washing process was hauled to the on-site injection well. Full evaluation of the pilot program is on-going; however, the program has been deemed unsuccessful and further management strategies for Battery 3 are under consideration.

4.8.4.2 Groundwater Monitoring

Monitoring well locations are shown on Figure 4D, and additional details including cross sections are provided in the CSM (Appendix 5). The 2019 annual groundwater monitoring program focused on continued well network and analytical schedule refinement, field parameter measurements, and groundwater sampling for laboratory analyses. The 2019 results are summarized as follows:

- eight wells within the Battery #3 area were included in the 2019 groundwater monitoring program (BT3-series wells in Table 4A and Figure 4D), all of which were sampled;
- most of the sampled wells in this area are completed in the upper bedrock, and flow through fractures is expected to be the dominant transport mechanism for groundwater migration in the bedrock;
- natural hydrocarbon and saline water seepage originating from deeper bedrock would be subject to the local upward vertical hydraulic gradient, and as such may be seen in shallower intervals;
- measurable NAPL was not detected in any of the monitored BT3 wells;
- field-measured pH values were within the FWAL guideline range. Two monitoring wells had limited water and field-measured parameters were not collected;

- exceedances of both calculated background concentrations and applied guidelines were observed at four of the eight sampled monitoring wells for one or more parameters including: chloride (one well), phenols (one well), benzene (one well), dissolved aluminum (one well), dissolved arsenic (one well), dissolved boron (two wells), dissolved iron (two wells), and dissolved zinc (one well); and
- the reportable detection limit for nitrite (as N) was raised above the applied CCME FWAL guideline due to sample matrix interference at one well.

4.8.5 F-31X Well Site

The F-31X site is situated northeast of the Land Terminal #3 (LT3) Satellite Building, between the Mackenzie River to the south and Bosworth Creek to the north. Four monitoring wells have historically been installed in the F-31X area to monitor groundwater conditions following a 1997 flowline release (Figure 4D, bottom left).

4.8.5.1 Groundwater Monitoring

Two monitoring wells were included as part of the 2019 monitoring program. Both of these two wells had limited water in 2019 and could not be sampled. Measurable NAPL was not detected at either monitoring location. Monitoring well locations are shown on Figure 4D.

4.8.6 G-32X Well Site

The G-32X well site is situated just east of the F-31X well site (Figure 4D bottom left), between the Mackenzie River barge dock to the south and Bosworth Creek to the north. Two monitoring wells were installed in the area to investigate a large pit which was visible on historic aerial photographs.

4.8.6.1 Groundwater Monitoring

One monitoring well was included as part of the 2019 monitoring program. The well was dry at the time of the monitoring event and could not be sampled. The monitoring well location is shown on Figure 4D.

4.8.7 E-33X Well Site

The E-33X production well was spudded on July 20, 1942 and is situated to the northeast of the barge dock, and about 75 m west of Bosworth Creek (Figures 4A and 4D).

A Phase II ESA targeting various APECs identified across the Norman Wells site was conducted in 2009 and included a preliminary investigation of the E-33X well site. Three soil boreholes were advanced and sampled during this investigation. All analyzed samples/parameters returned results below the applicable guidelines. No field observations of hydrocarbon presence were noted.

In 2013, an electromagnetic survey at the E-33X well site was completed in order to identify potential areas of elevated terrain conductivity associated with the well and facilities. The survey identified a small area of elevated terrain conductivity to the north of the wellhead.

A limited Phase II ESA was conducted in 2014, following the cut and cap abandonment of the former wellhead and two associated flow lines. Petroleum hydrocarbon concentrations were reported above the applied guidelines in soil sampled from within the wellhead excavation and the test pit to the southwest of the abandoned flow lines. Supplementary Phase II ESAs were conducted in 2016, 2017 and 2018 to assess the lateral and vertical extent of the impacts associated with the E-33X Well Site.

It should be noted that there are known natural hydrocarbon seeps from the shallow upper bedrock occurring in this area.

2019 C&R activities included a supplementary Phase II ESA to further characterize previously identified soil impacts and groundwater monitoring.

4.8.7.1 Phase II Environmental Site Assessment

The 2019 Phase II ESA included the advancement of five boreholes, two of which were completed as a monitoring well. Industrial land use guideline exceedances were identified at every borehole for pH and SAR, PHC F1, PHC F2, PHC F3, and/or arsenic. Borehole locations are shown on Figure 4C, while soil quality data are provided in Tables 10B, 11B and 12B.

Soil PHC exceedances of both applied guidelines and background were generally for the PHC F2 and -F3 fractions, and concentrations typically increased with depth. This pattern indicates that some of the observed issues are from a bottom-up source, likely attributable to natural seepage of crude oil from the shallow upper bedrock.

4.8.7.2 Groundwater Monitoring

The monitoring well locations are shown on Figures 4C and 4D. Three monitoring wells were sampled as part of the 2019 monitoring program and results of the sampling program are summarized below:

- measurable NAPL was not detected at any of the monitoring wells. However, field parameters were not measured at the monitoring wells due to the presence of visible sheen; and
- Exceedances of both calculated background concentrations and applied guidelines were observed for chloride, dissolved aluminum, dissolved iron, and/or dissolved zinc at two of the monitoring wells.

4.9 Mainland East

The Mainland East sub-area includes the land area bounded by the Town of Norman Wells on the east, the former Battery #3 to the west, the Mackenzie River to the south, and the Site access ring road to the north (Figures 2 and 5A). The following areas within Mainland East were targeted for C&R works during 2019:

- Former Refinery Area (REF/NWR/RB);
- Former Reduced Crude Flare Pit (RCFP/RCF);
- B-38X Area (B38), including the Former Fire Training Area (FTA), Land Terminal #7 area (LT7), and the former pit/sump area northwest of the B-38X Well Site;
- Mainland Tank Farm (MTF/TF);

- B-42X Well Site (B42);
- C-36X Well Site (C36); and
- Former Fuel Tanks and Former Campsite Areas (FT/CAB).

The following subsections provide summaries for areas where C&R activities were undertaken in 2019. Data collected from background locations is summarized in Appendix 3.

4.9.1 Former Reduced Crude Flare Pit (RCFP)

The former Reduced Crude Flare Pit is situated 100 m north of the Mainland Tank Farm (Figure 5D). Four monitoring wells were installed around the RCFP in 1998, 1999, and 2003. A remedial excavation to remove salt and hydrocarbon impacted soils was completed in 2003. In 2004, the RCFP excavation was backfilled, re-contoured, and seeded with a seed mix developed for Norman Wells.

The 2019 C&R program for the RCFP site included the annual groundwater monitoring program.

4.9.1.1 Groundwater and Surface Water Monitoring

Two monitoring wells and one surface water location were included in the 2019 groundwater monitoring program (RCF series wells). The results are summarized below:

- chloride concentrations remain consistently above background conditions in both groundwater and surface water;
- measurable NAPL was not detected at any of the active monitoring locations;
- field-measured pH values were within the FWAL guideline and background ranges for surficial sediments; and
- a dissolved zinc concentration exceeding the applied guideline and background concentration was observed at one monitoring well. No other exceedances were reported relative to applied guideline and background values for the area.

Monitoring locations are shown on Figure 5D.

4.9.2 B-38X/FTA Area

The B-38X well site is located approximately 200 m north of the former Refinery. The B-38X area includes the B-38X well site, the C-40X well site, the B-40X well site, the former FTA, a former buried pit west of the B-38X well, and the LT7 satellite building (Figures 5A and 5B).

A CSM has been developed for the B-38X Area and is presented in Appendix 7.

Historical air photos and files indicate that this area was also the site of several large storage tanks (pre-1975). The B-38X well was one of the first wells drilled in Norman Wells; it produced from 1942 to 1957, when it was converted to a naphtha injection well. Naphtha was a by-product of the former refinery operations. The B-38X well is currently an oil-producing well and is no longer used for injection purposes.

Initial assessment work on the B-38X site began in 1997 with environmental assessment and characterization, followed by development of a remediation and reclamation plan. In 2004, an in-situ soil and groundwater treatment system (Dual Phase Extraction or DPE) was commissioned to the east of the B-38X well to remove bulk hydrocarbon mass related to historic site operations. The DPE system operated seasonally until 2016, but operations were not possible during 2017 and 2018, while oil production at Norman Wells was temporarily suspended, due to lack of required power and water treatment facilities at the CPF to support the in situ remedial programs.

In 2007, an estimated 2,000 m^3 of hydrocarbon impacted soil was excavated from the B-38X buried pit or sump area located 100 m northwest of the B-38X well site. The impacted soil was transported to an on-site biocell for treatment. The treated soil was subsequently tracked and re-used as industrial fill material on-site. Inferred natural crude oil seepage from depth was observed in the base of this remedial excavation, and crude oil persists in some local monitoring wells.

4.9.2.1 2019 Field Program

The 2019 C&R program for the B-38X site included groundwater monitoring and sampling, a Phase II ESA at the Fire Training Area, and the inspection, re-commissioning and monitoring of the B-38X area remediation systems. The results of the programs are summarized below.

4.9.2.2 Phase II Environmental Site Assessment

The 2019 Phase II ESA works in the Fire Training Area included the advancement of sixteen boreholes to further characterize known impacts and address previous data gaps in the area. Industrial land use guideline exceedances were identified at fifteen boreholes for benzene, toluene, xylenes (total), PHC F1, PHC F2, PHC F3, and/or PHC F4. Borehole locations are shown on Figure 5B.

Soil PHC results in Table 11A indicate that 9 of the 15 boreholes only had impacts above applied guidelines in the upper 1.5 m of overburden. Parameter exceedances were generally characterized by relatively light end PHC fractions F1 and F2, and less commonly by benzene, toluene, PHC F3 and -F4 exceedances in a smaller subset of samples. A total of 6 boreholes displayed PHC exceedances deeper in the soil profile. Vertical delineation of PHC impacts was achieved in 10 of 15 boreholes. The maximum depth of investigation was 6.0 mbgs. The investigative program was designed to characterize the contaminated area rather than seek lateral delineation.

4.9.2.3 B-38X Remediation System Operations

A dual phase extraction (DPE) and groundwater treatment system (referred to as B38-DPE-GWTF) was designed in 2003 for the purpose of recovering hydrocarbons associated with the B-38X Wellsite and Fire Training Areas. The original 24 trenches for DPE were installed between 2003 and 2004. Between 2008 and 2009, the DPE system was expanded and six additional trenches were installed to the north in the Fire Training Area.

Due to a plant-wide shut down, the systems did not operate in 2017 or 2018. Following prestart inspections and maintenance, the B-38X liquid extraction system was restarted on 22 July 2019. The B-38X vapour extraction system was restarted on 3 September 2019. Restart of the vapour extraction system was

delayed due to repairs required on the P-301 transfer pump, which is essential equipment used to remove separated fluids (i.e. mixed groundwater and NAPL droplets) from the V-300 Separator Tank.

The shallow silty soils in the area remain impacted with floating free-phase LNAPL, vapour phase hydrocarbons, and/or dissolved-phase hydrocarbons. The impacts are predominantly related to volatile light-end hydrocarbons, including BTEX compounds and hydrocarbons in the C_5 to C_{10} fraction range. The hydrocarbon impacts are generally located approximately 0.5 to 4.5 mbgs near the uppermost unconfined groundwater surface.

Hydrocarbon-impacted shallow groundwater in the vicinity of the B-38X area is interpreted to occur in a seasonally active water-bearing zone perched on top of permafrost. The southern (down-gradient) extent of the dissolved hydrocarbon plume is believed to be delineated laterally by historical groundwater monitoring data at wells B38 02-17-3 and TF03-12-3. This interpretation is supported by the results of extensive site characterization programs, and the presence of shallow permafrost in the area which serves to limit the potential for lateral and vertical plume migration.

The B-38X DPE water extraction system operated for 64 days and the vapour extraction system operated for 22 days in 2019. The limited season was due to start up delays following a prolonged system shut down. A total of 2,164 m^3 of fluids were extracted from the B-38X DPE remediation system in 2019 representing approximately 29 kg of hydrocarbon mass removal. Cumulatively, 22,233 m^3 of impacted groundwater has been extracted since 2004 representing approximately 155 kg of hydrocarbon mass removal. LNAPL was observed in six monitoring and extraction wells monitored during 2019 within the active remediation area.

The hydrocarbon vapour mass removal during 2019 was calculated to be 1,070 kg, for a cumulative total of 65,305 kg removed by vapour extraction since 2004. Vapour phase extraction remains the predominant means of hydrocarbon mass recovery. The system has recovered approximately 524 barrels of hydrocarbon liquid equivalent over 14 seasons of operation between 2004 and 2019.

4.9.2.4 Groundwater Monitoring

Six monitoring wells were included in the 2019 groundwater sampling and analytical program for this area (B38 and FTA series wells). The results are summarized below. Monitoring locations are shown on Figure 5D.

B-38X Well Site

The current monitoring network includes six wells. In 2019, one of the wells was dry and one contained measurable NAPL. These locations were not sampled during the 2019 program.

- measurable NAPL was detected at one monitoring well near the former B-38X pit/sump (B38-16-2-4) which was interpreted to be natural crude oil seepage from the upper bedrock;
- field-measured pH values from all sampled locations were within the FWAL guideline range and below the calculated background value for surficial sediments; and

- exceedances of both calculated background values and applied guidelines were observed at four sampled monitoring wells for benzene (one well), dissolved arsenic (two wells), dissolved iron (four wells), and dissolved zinc (one well).

Fire Training Area (FTA)

The current monitoring network in the FTA area includes three wells. Results of the sampling program are summarized below:

- measurable NAPL was not detected at any of the monitoring locations active for this program. However, field parameters were not measured due to the presence of visible hydrocarbon sheen in all three wells; and
- exceedances of both calculated background values and applied guidelines were observed at all three of the sampled monitoring wells for one or more parameters including chloride (two wells), benzene (two wells), toluene (two wells), and ethylbenzene (two wells).

4.9.3 Mainland Tank Farm (MTF/TF)

The Mainland Tank Farm is located northeast of the former Refinery site and west of the Town of Norman Wells (Figures 2, 5A and 5D). The tank farm currently consists of 21 ASTs) of various sizes and contents within gravelled berms, and a ditch system to direct surface runoff to a holding pond south of the Mainland Tank Farm. Various environmental characterization activities have been undertaken at the Mainland Tank Farm since 1997.

4.9.3.1 Groundwater Monitoring

Six monitoring wells within the Mainland Tank Farm area were included in the groundwater monitoring program. Results of the 2019 sampling program are summarized below:

- measurable NAPL was not detected at any of the active monitoring locations;
- field-measured pH values were within the FWAL guideline range and below the calculated background value for surficial sediments. Field-measured parameters were not collected at two monitoring wells due to the presence of visible hydrocarbon sheen; and
- exceedances of both calculated background values and applied guidelines were observed at all sampled monitoring wells for one or more parameters, including chloride (one well), phenols (two wells), benzene (three wells), toluene (two wells), ethylbenzene (two wells), dissolved arsenic (three wells), dissolved iron (four wells), dissolved lead (one well), and dissolved selenium (one well).

Monitoring well locations are shown on Figure 5D.

4.9.4 B-42X Well Site

The B-42X well site is located on the south side of the Mainland Tank Farm near the Former Mainland Water Flood Pond (Figure 5A). The B-42X well was spudded on November 15, 1944. Based on National Energy Board (NEB) Well Records reviewed in 2008, B-42X was most recently used for injection purposes.

An initial site assessment was conducted in 2006, including six test pits around the wellhead. These test pits identified elevated hydrocarbon concentrations potentially associated with the utilidor which borders the well site to the south, or a former barrel storage yard which was situated across the site access road to the east. In 2010, three additional boreholes were drilled around the lease to further delineate the extent of the hydrocarbon impacts.

In 2013, geophysical electromagnetic (EM) surveys were completed around the B-42X wellhead and lease. These surveys identified three elevated conductivity features around the lease, all of which appeared to be associated with site infrastructure.

The wellhead and associated above- and below-ground infrastructure were abandoned in 2015. The well was cut and capped, and three test pits were completed around the associated excavation footprint. Elevated hydrocarbon concentrations were reported adjacent the wellhead, south of the wellhead (adjacent the site access road), and east of the wellhead.

A supplementary Phase II ESA was completed at the B-42X well site in September 2017, to delineate soil and groundwater impacts and included the installation of three groundwater monitoring wells.

4.9.4.1 Groundwater Monitoring

The current monitoring network includes three active monitoring wells, one of which was frozen in 2019 and could not be sampled. Results of the 2019 sampling program are summarized below:

- measurable NAPL was not detected at any monitoring location;
- field-measured pH values were within the FWAL guideline range and below the calculated background value for surficial sediments; and
- exceedances of calculated background values and applied guidelines were observed at both sampled wells for one or more parameters, including dissolved arsenic (two wells) and dissolved iron (one well).

Monitoring well locations are shown on Figure 5E (top right).

4.9.5 C-36X Well Site

The C-36X well site is located approximately 250 m west of the B-38X well site (Figure 5D). A review of historical aerial photographs and interviews with Imperial personnel indicated that the C-36X area was possibly used as a dump site, in addition to records of a historical well blowout. Four monitoring wells have been installed south of the C-36X well pad since 2009.

4.9.5.1 Groundwater and Surface Water Monitoring

Three monitoring wells and one surface water sampling location were included as part of the 2019 monitoring program. Results of the program are summarized below:

- measurable NAPL was not detected at any monitoring location;
- field-measured pH values were within the FWAL guideline range and below the calculated background value for surficial sediments;

- exceedances of both calculated background concentrations and applied guidelines were observed at one of the three sampled monitoring wells for phenols, benzene, toluene, and dissolved iron; and
- at the surface water monitoring location, which is a small wetland area about 100 m southwest of the C-36X wellhead, reported concentrations of phenols and dissolved iron exceeded calculated background concentrations and applied guidelines.

Monitoring locations are shown on Figure 5D.

4.9.6 Former Fuel Tanks and Former Camp Area (FT/CAB)

A former construction camp site (CAB) existed east of the Frontier Warehouse/Flint Shop (FT) as shown on Figure 5A, top left. This area is currently used as a laydown area and for equipment/vehicle parking. Three groundwater monitoring wells were installed adjacent to the CAB area in 2009.

Two above-ground fuel storage tanks, an underground flow line, and a fuelling station were formerly situated west of the Frontier Warehouse/Flint Shop. These fuel tanks have since been decommissioned and removed, and two monitoring wells were installed in 2010.

4.9.6.1 Groundwater Monitoring

One monitoring well in the CAB site and one monitoring well in the FT site were included in the 2019 groundwater monitoring program. Results of the sampling program are summarized below:

- measurable NAPL was not detected at any monitoring location;
- the field-measured pH value from one of the wells fell below the FWAL guideline range; and
- The only parameter reported to exceed both the calculated background value and the applied guideline was dissolved selenium (one well).

Monitoring well locations are shown on Figure 5D.

4.9.7 Former Refinery Area

A CSM has been developed for the former Refinery Area and is presented in Appendix 6.

The Norman Wells Refinery was located on the north bank of the Mackenzie River on the east side of the Norman Wells lease area (Figures 2 and 5A). It began operation in 1921, processing crude oil from the Norman Wells oilfield until May of 1996 when IOR announced that the refining facility would close. The Phase I and Phase II C&R Plans for the facility were submitted by IOR in 1998 and 1999, respectively, and were approved by the SLWB in 2001. Initial C&R work on the Refinery site began in 1996 with decommissioning and dismantling activities, followed by environmental assessment, characterization and development of a remediation and reclamation plan. In 2002, some preliminary soil remediation activities were initiated.

Prior to completion of the infrastructure dismantlement at the former Refinery, metal affected soil from the process area was excavated and temporarily stockpiled within the Tank 201 area which was bermed and lined. In 2002, the material was packaged in sea cans and temporarily stored at the IOR Frontier

warehouse. The sea cans were then shipped to an offsite Class II landfill for disposal in 2003. The Tank 201 site also contained stockpiled soil from different excavations which was left on-site for potential treatment in a biotreatment cell. A Phase II ESA was completed in 2018 in the area of the former Tank 201.

An escarpment with several terraces or benches is located north of the Mackenzie River and south of the Former Refinery access road. A review of historical aerial photographs indicated that ten ASTs of unknown volume and contents were situated along the upper bench/terrace of the former Norman Wells Refinery area between the late 1940's and mid 1970's. Based on the aerial photograph review, the area was vacant in 1945 and all ten tanks were present by 1950. Only four tanks remained in 1974 and all tanks were removed by 1975.

A groundwater containment system was commissioned at the Refinery Bank area (Figures 5A/5E) and became operational in 2003. A complementary in situ multiphase extraction (MPE) remediation system (described in Appendix 6) has been seasonally operational since 2004.

Both remediation systems were temporarily suspended beginning in February 2017 following the plant-wide shutdown due to the closure of the Enbridge pipeline. To ensure that temporary suspension of the remediation system would not have a deleterious effect on down-gradient receptors, a sentinel network including eleven additional monitoring wells (RB-MW17 series) was installed between the former Refinery site and the Mackenzie River. In addition to the new monitoring wells, monitoring frequency at a number of key existing wells was increased from annually to near-monthly during 2017-18 for the duration of the remediation system suspension, beginning in March 2017. The remediation system was inspected, re-commissioned and resumed operations in 2019 as discussed in Section 4.9.7.3.

4.9.7.1 2019 Field Program

The 2019 C&R program for the former Refinery site included the following activities:

- a Phase II ESA investigation surrounding the former Tank 201 area and on the upper bench surrounding separate former ASTs, above the Refinery Bank;
- porewater sampling at inferred groundwater seep locations on the Mackenzie River foreshore;
- start-up and monitoring of the Refinery Bank area remediation systems; and
- annual groundwater and surface water sampling as per the standard annual monitoring program.

Liquid hydrocarbons consisting of both refined light-end product and naturally-occurring crude oil seepage are present on the Refinery Bank. A total of fourteen monitoring and remediation wells in this area contained measurable free-phase hydrocarbons during one or more of the 2019 field monitoring events.

4.9.7.2 Phase II Environmental Site Assessment

Former Tank 201

The 2019 Phase II ESA works included the advancement of nine boreholes to further characterize and delineate known impacts in the area. Industrial land use guideline exceedances were identified at seven

boreholes for SAR, toluene, xylenes (total), PHC F1, PHC F2, and/or PHC F3. Borehole locations are shown on Figure 5C.

Boreholes in this area included NWR-19-01 to NWR-19-09. Soil PHC results in Table 11A indicate that PHC impacts above applied guidelines were vertically delineated in the upper 1.5 m of soil at 4 boreholes. Three other boreholes displayed deeper hydrocarbon exceedances, to a maximum depth of impact of 5.5 mbgs. Parameter exceedances were typically characterized by relatively light end PHC fractions F1 and F2, while isolated sub-samples displayed exceedances for benzene, xylenes, or PHC F3. The maximum depth of investigation was 7.5 mbgs.

Historic ASTs on Upper Bench/Terrace

The 2019 Phase II ESA works included the advancement of thirteen boreholes to assess for potential impacts in the area. Industrial land use guideline exceedances were identified at eleven boreholes for pH, benzene, toluene, xylenes (total), PHC F1, PHC F2, PHC F3, and/or arsenic. Borehole locations are shown on Figure 5C.

Boreholes in this area included RB-19-01 to RB-19-16. Soil PHC results in Table 11A indicate that 12 of the 13 boreholes had PHC impacts above applied guidelines in one or more subsamples. Vertical delineation of PHC impacts was apparently achieved in seven of the impacted boreholes by a depth of 7.5 mbgs or less. Five boreholes displayed deeper hydrocarbon exceedances. Parameter exceedances were typically characterized by relatively light end PHC fractions F1 and F2, while isolated sub-samples displayed exceedances for benzene, toluene, xylenes, or PHC F3. The maximum depth of investigation was 9.0 mbgs.

4.9.7.3 Remediation System Operations

A full-scale in situ remediation strategy consisting of groundwater pumping for hydraulic containment and multiphase extraction for hydrocarbon source removal has been active since 2003. Due to a plant-wide shut down, both the GWTF and MPE systems did not operate in 2017 or 2018. Following prestart inspections and maintenance, the systems were restarted in July 2019.

The total groundwater extraction rate in 2019 by the RB-GWTF averaged 27.0 L/min. The RB-GWTF was operable for 184 days out of 184 available days, equating to a 100% run-time calculated from the restart date. Data analysis in WorleyParsons (2014) indicated that an extracted flow rate of approximately 20 L/min was sufficient to capture the hydrocarbon plume. Hydrocarbon mass removal via the vapour phase (through MPE) during 2019 was estimated at 2,068 kg (17 barrels). An additional 1,540 kg (12 barrels) was remediated by direct recovery of LNAPL fluids from selected wells.

Over the operable lifetime of the RB-GWTF and RB-MPE systems, a total of approximately 53,649 kg of hydrocarbon mass has been recovered, representing approximately 400 barrels of hydrocarbon liquid equivalent over 14 operational seasons between 2001 and 2019. Vapour phase extraction remains the predominant means of hydrocarbon mass recovery.

4.9.7.4 Porewater Monitoring

The discharge of groundwater to the Mackenzie River and the potential conveying of contaminants of concern to the aquatic environment can be better understood by sampling shallow porewater near the

wetted perimeter of the river. Groundwater can move to surface through porewater in the hyporheic zone, which is where groundwater and surface water interact. Porewater is a pathway to the surface aquatic environment and receptors. Understanding porewater chemistry is a key step in assessing potential risks to aquatic receptors.

Twelve porewater sample locations were assessed in 2018. Chloride values in the porewater samples did not exceed the expected background range in this area of natural saline water and oil seepage. All reported dissolved PHC and polycyclic aromatic hydrocarbon (PAH) results were below CCME reference guidelines for Freshwater Aquatic Life and/or background concentrations. The dissolved PHC and PAH results were also reported below laboratory reportable detection limits, with the exception of naphthalene detected in one porewater sample. The inorganic parameters were generally below applied guidelines and background concentrations, with the only exceedances of select dissolved metals reported in two porewater samples.

Fifteen porewater sample locations were assessed in 2019 (Figure 5E). Chloride values in the porewater samples ranged from 13 to 79 mg/L and did not exceed the expected background range in this area of natural saline water and oil seepage. All reported dissolved PHC and PAH results were below reference guidelines and/or background concentrations. The dissolved PHC and PAH results were also reported below laboratory reportable detection limits, with the exception of fluorene detected at PW-19-6 and phenanthrene detected at PW-19-1, PW-19-2, PW-19-3, PW-19-5, PW-19-6, PW-19-14 and PW-19-15. The inorganic parameters were generally below reference guidelines and background concentrations, with the only exceedances of both criteria reported at locations PW-19-16 (dissolved arsenic and iron) and PW-19-17 (dissolved arsenic).

4.9.7.5 Groundwater Monitoring

Monitoring well locations are shown on Figure 5E. Additional details related to both the NWR- and RB-series monitoring networks are provided in the CSM for the Refinery Bank included in Appendix 6. Groundwater monitoring analytical data collected as part of the remediation system operation are provided in the groundwater tables.

The annual groundwater monitoring program is primarily focused on groundwater sampling for laboratory analyses and field parameter measurements. The 2019 groundwater sampling results are summarized as follows:

- currently, eight monitoring wells are included in the annual groundwater program in the Former Refinery area (NWR series wells), excluding the remediation system extraction and observation wells discussed above (which are typically denoted as RB series wells);
- three wells out of the eight NWR-series wells scheduled for regular annual monitoring were not sampled because they contained measurable NAPL;
- field-measured pH values were within the CCME guideline range and below the calculated background value for bedrock. There was insufficient water to sample for field parameters at the surficial sediments well;

- exceedances of calculated background values and applied guidelines were observed at five of the sampled NWR-series monitoring wells for one or more parameters, including chloride (three wells), nitrite (as N) (one well), benzene (one well), and dissolved iron (one well); and
- the Refinery Bank area is well documented as an area of refined hydrocarbon impacts, superimposed over natural crude oil and saline water seepage. As such, the observed chloride in groundwater is considered primarily from natural upward seepage of deeper saline groundwater.

4.10 Sumps

There are three former sump areas on the Mainland that were assessed as part of the 2019 C&R program. Environmental assessment activities to date at the various sump sites have included soil sampling by drilling and test pitting, installation and sampling of monitoring wells, surface water sampling at ponded areas on the capped sumps, and selective draining, backfilling and regrading of collapsed cap areas.

Mainland area sumps included in the C&R program are as follows:

- Mainland Sumps (Figures 6A/B); an area which collectively includes the Mainland Drilling Sump (MDS), Well Services Sump (WSS), and six other drilling waste sumps (Sumps 1-6);
- Cemetery Sump (Figures 3A/C); and
- C-27X Sump (Figures 3A/C).

Data collected from nearby background locations is summarized in Appendix 3.

4.10.1 Cemetery Sump

The Cemetery Sump is located to the west of the CPF and approximately 100 m northwest of the Town of Norman Wells cemetery (Figure 3A). Site investigations including geophysical surveys and soil and groundwater sampling programs were conducted in this area between 1998 and 2010, with results indicating the presence of soil EC, chloride and petroleum hydrocarbon concentrations above CCME industrial land use guidelines and/or expected background conditions to an average depth of 3.0 to 4.0 mbgs.

A supplementary Phase II ESA was completed in 2009, including 13 shallow boreholes, four shallow monitoring wells and one deep bedrock monitoring well. Lateral delineation of identified soil impacts was achieved to the north, south, west and east of the Sump. A screening level risk assessment (SLRA) for the Sump was undertaken in 2010 to determine optimal future management options. The sump was re-contoured, capped and seeded in 2010.

In 2013, a supplementary geophysical assessment of the Cemetery Sump area was completed. This information guided a subsequent Phase II ESA, which included five additional borehole locations, four of which were completed as monitoring wells and one of which was completed as a thermistor to assess local permafrost conditions.

A review of historical aerial photographs indicated that two ASTs of unknown volume and contents were situated at the western edge of the Cemetery Sump area during 1987. A Phase II ESA targeting this former tank storage area was completed in 2016, but no guideline exceedances of note were identified.

In 2019, C&R activities in the Cemetery Sump area included groundwater monitoring, which is summarized below. The Phase II ESA investigation of a former AST and pit area west of the Cemetery Sump completed during 2019 was previously described in Section 4.6.3.

4.10.1.1 Groundwater Monitoring

The 2019 groundwater monitoring program at the closed Cemetery Sump included five wells in and around the sump (CEM series). These wells were all dry or contained insufficient water to provide samples in 2019. Monitoring well locations are shown on Figure 3C.

4.10.2 C-27X Sump

The C-27X sump, previously known as the CPF Sump, is located north of the C-27X injection well and west of Bosworth Creek (Figure 3A). This sump is visible on aerial photographs from 1979 to 1983, having an approximate footprint of 50 m by 50 m. Geophysical surveys conducted in 2005 indicated that a conductive anomaly was present in the southern portion of the survey area, and that any inorganic impact potentially associated with the sump was likely to exceed depths of 1 mbgs. In 2008 and 2009, investigations (geophysical surveys, soil and groundwater sampling) around the sump identified above background conductivity values throughout the central portion of the survey area. During 2015, the collapsed portion of the sump was dewatered and partially filled. In 2016, the sump was capped and a supplementary Phase II ESA was completed, including installation of down-gradient monitoring wells and further delineation of previously identified impacts.

In 2019, C&R works in the C-27X Sump area included groundwater monitoring.

4.10.2.1 Groundwater Monitoring

The 2019 groundwater sampling program results are summarized as follows. Monitoring well locations are shown on Figure 3C:

- of the four groundwater monitoring locations (C27 series wells in Table 4A) included in the 2019 program, two wells were dry and could not be sampled;
- measurable NAPL was not detected in any of the monitoring wells;
- field-measured pH values were within the acceptable FWAL guideline range; and
- there were no reported exceedances of both calculated background concentrations and applied guidelines at either of the sampled monitoring wells.

4.10.3 Mainland Sumps

The Mainland Sumps area is located on the northern side of the Imperial Site access ring road. The sumps were historically used for disposal of drilling or well services waste. These have been assessed as the Mainland Drilling Sump (MDS), the Well Services Sump (WSS) and the six Closed Mainland Sumps (Figure 6A).

A CSM has been developed for the Mainland Sumps area and is presented in Appendix 8.

In 2008, the Mainland Drilling Sump was dewatered and the remaining sump solid material was encapsulated within liners. The sump was backfilled, capped and re-contoured. Also, in 2008, the Well Services Sump was excavated and waste material was disposed of off-site. The excavation was then backfilled, and re-contoured.

In 2013, Sump 1 was drained of water and backfilled with treated soil sourced from Biocell 1. In 2014, dewatering and sump capping works continued, with material being placed in depression areas at Sumps 2, 3, 4, and 5. In 2015, further dewatering, backfilling, capping and contouring was completed at Sumps 2, 4, and 5, as well as supplemental soil sampling and groundwater and surface water sampling. Further dewatering was completed at Sumps 1, 3 and 5 in 2016, and Sump 5 was contoured to emulate pre-disturbance conditions to ensure positive drainage away from the sump area. In 2018 sump caps were assessed for physical stability/integrity.

2019 C&R works included groundwater monitoring.

4.10.3.1 Groundwater Monitoring

Mainland Drilling Sump Area

The 2019 groundwater monitoring program at the former MDS included four wells. Monitoring locations are shown on Figure 6B. A summary of the 2019 findings includes:

- one monitoring well was observed to be damaged below ground surface at the time of the monitoring event and could not be sampled;
- measurable NAPL was not detected in any of the monitoring wells;
- field-measured pH values from wells were within the FWAL guideline range; and
- an exceedance of both applied background concentrations and applied CCME guidelines was observed at one of the three sampled monitoring wells for dissolved boron.

Well Services Sump Area

The 2019 groundwater monitoring program at the former WSS included eight wells. Monitoring locations are shown on Figure 6B. A summary of the findings includes:

- measurable NAPL was not detected in any of the monitoring wells;
- field-measured pH values at six wells fell outside the applied CCME guideline range and calculated background value for shallow bedrock; and
- exceedances of both the background concentrations and the applied CCME guidelines were observed for chloride (5 wells).

Sumps 1 Through 6

Eight monitoring wells were included as part of the 2019 analytical schedule for Mainland Sumps 1 through 6. Monitoring locations are shown on Figure 6B. Nine wells were monitored and one was observed to be dry in 2019. Groundwater sampling results are summarized as follows:

- measurable NAPL was not detected in any of the monitoring wells;
- field-measured pH values were within the FWAL guideline range and below the calculated background values for surficial sediments and bedrock; and
- exceedances of calculated background values and applied guidelines were observed at seven monitoring wells for chloride.

4.11 Bear Island

Bear Island and Frenchy's Island are two of three natural islands included in the IOR Norman Wells Site. Bear Island is located adjacent to the south bank of the Mackenzie River and is accessible by boat or barge in summer, ice road in winter or helicopter for the remainder of the year.

Geophysical surveys, soil and/or groundwater sampling have been conducted at the Bear Island target areas noted below to date. The primary Bear Island work areas are shown on Figures 2 and 7A.

- West Sumps area (BI and BIS);
- Former facilities south of injection well R-36X (R36);
- Former Bear Island Battery west of Q-34X Well Site (BIBT1);
- East Sump area: (BI and BIWS);
- Former battery area near N-42X well site (BIN42 and BIB); and
- Former Bear Island Flare Pit (BIFP).

C&R work in 2019 for Bear Island included groundwater and surface water sampling, as summarized in the following sections. Data collected from background locations is summarized in Appendix 3.

4.11.1 Bear Island West Sumps (Sumps 1-5)

A CSM has been developed for the Bear Island West Sumps (#1 to 5) and East Sump (#6), and is presented in Appendix 10.

The Bear Island West Sumps area includes a series of historical capped drilling waste sumps (#1 through #5), located on the north western side of Bear Island (Figures 7A/B). The caps have subsided in each of these sumps, resulting in standing surface water and wetland vegetation over much of the area. Between 1997 and 2016, numerous environmental sampling programs were completed in and around the Sumps, including Phase I ESAs, a screening level risk assessment (SRLA), geophysical surveys, soil sampling, monitoring well installations, and groundwater and surface water sampling. The dominant soil type at the Sumps was classified as fine-grained. Exceedances of petroleum hydrocarbons, salinity parameters and metals has been identified in the soil and groundwater throughout the Sumps.

C&R work in 2019 around the Bear Island West Sumps included groundwater and surface water sampling, as summarized below. Monitoring well and surface water sampling locations are shown in Figure 7B.

4.11.1.1 Groundwater and Surface Water Monitoring

The current monitoring network for the Bear Island West Sumps includes twelve wells, three drive points, and six surface water sampling locations. Of these, three locations were either frozen or contained insufficient water to be sampled. Subsequently, these wells could not be sampled. Results of the sampling program are summarized below:

- measurable NAPL was not detected at any monitoring location;
- field-measured pH values were within the FWAL guideline range and below the calculated background values for island surficial sediments and surface water. Six monitoring wells and one drive point were either dry or had limited water and field-measured parameters could not be collected;
- exceedances of calculated background values and applied guidelines were observed at seven of eleven monitoring well and drive point locations, and five of the six surface water locations for one or more parameters including:
  - Indicator Parameters: chloride (five wells, one drive point and four surface water locations) and phenols (one well);
  - Petroleum Hydrocarbons: benzene (two wells), toluene (two wells), and ethylbenzene (one well); and
  - Dissolved Metals: dissolved arsenic (two wells), dissolved iron (three wells), dissolved selenium (one well), and dissolved zinc (one well).

4.11.2 Former Tanks South of R-36X Well Site

The former tank farm site was identified as an APEC during a review of historical aerial photographs as part of a Phase I ESA update in 2008-2009. Two ASTs were evident in a historical aerial photograph from circa 1945. In 2015, two test pits were advanced near the site of the former ASTs. In 2016, a preliminary Phase II ESA was completed around the former AST locations, including the advancement of nine boreholes, five of which were completed as groundwater monitoring wells.

4.11.2.1 Groundwater Monitoring

Five monitoring wells were installed at the historical tank site. The monitoring wells were all dry or contained limited water and were subsequently not sampled in 2019. Monitoring well locations are shown in Figure 7B.

4.11.3 Bear Island BT1

A CSM has been developed for the Bear Island BT1 site and is presented in Appendix 9.

Previous investigations in the BIBT1 area identified approximately 5,000 m^3 of hydrocarbon impacted soil and localized groundwater impacts. Remedial excavation activities were initiated in 2014 and are being completed in stages. In 2014, approximately 1,115 m^3 of impacted soil was excavated and stockpiled. In 2015, an additional 3,110 m^3 of impacted soil was excavated and transported to the temporary holding cell at BIT5. Confirmatory soil samples from the excavation base and all sidewalls except in the northeast and

east corner of the site indicated PHC, PAH, EC and/or SAR concentrations exceeding the applied Residential/Parkland guidelines. A high water table, adjacent active access road and operational flowlines limited excavation extents and depth in 2014 and 2015.

In 2016, a Phase II ESA was completed at BIBT1, including the advancement of thirteen boreholes, three of which were completed as groundwater monitoring wells. A supplementary Phase II ESA completed in 2017 was intended to further characterize soil conditions and improve impact delineation at BIBT1.

C&R work in 2019 around BIBT1 included groundwater monitoring. Monitoring well locations are shown in Figure 7B.

4.11.3.1 Groundwater Monitoring

Ten groundwater wells were included in the 2019 groundwater monitoring program for the BIBT1 area. One of the wells could not be located and was not sampled. The remaining monitoring locations were sampled in 2019 and results are summarized below:

- measurable NAPL was not detected at any monitoring location;
- three wells had pH values which fell outside the FWAL guideline range. One monitoring well contained limited water and field-measured parameters were not collected. All remaining field-measured pH values were within the FWAL guideline range and below the calculated background value for island surficial sediments;
- exceedances of both applied background and guidelines were observed at four of the nine sampled monitoring wells for one or more parameters, including phenols (three wells), benzene (two wells), toluene (two wells), ethylbenzene (two wells), dissolved arsenic (three wells), dissolved iron (three wells), dissolved selenium (one well), and dissolved zinc (one well); and
- the reportable detection limit for dissolved nitrite (as N) was raised above the applied CCME FWAL guideline at one location due to sample matrix.

The down-gradient (northern) edge of groundwater PHC impacts is effectively delineated by several perimeter wells containing no detectable PHCs (see Appendix 9).

4.11.4 Bear Island East Sump (Sump 6)

A CSM has been developed for the Bear Island Sumps (including the Bear Island East Sump), and is presented in Appendix 10.

Bear Island Sump 6 (East Sump) is located on the east end of the developed portion of Bear Island, and is adjacent to the M-50X well pad (Figures 7A/B). There is no current infrastructure on the island further east from this Sump. The Sump is surrounded by conifer forest to the east and south, and by thick willows to the north, where the topography slopes down towards a wetland located approximately 50 m to the north. There is another wetland situated approximately 50 m to the south. A channel of the Mackenzie River that runs between Bear Island and Frenchy's Island is located approximately 250 m north of the East Sump.

Supplementary Phase II ESAs were completed at Sump 6 in 2016 and 2017 to improve impact delineation around and within the Sump. The programs included the advancement of boreholes and groundwater monitoring well installation.

C&R work in 2019 at Bear Island East Sump included groundwater and surface water sampling, as summarized below. Monitoring well locations are shown in Figure 7B.

4.11.4.1 Groundwater and Surface Water Monitoring

Three groundwater wells and two surface water locations were included in the 2019 monitoring program. One of the wells was dry or blocked below ground surface and could not be sampled during the 2019 event. Results are summarized below:

- measurable NAPL was not detected at any monitoring location;
- field-measured pH values were within the FWAL guideline range and below the calculated background values for surficial sediments and surface water. One well contained limited water and field-measured parameters were not collected;
- exceedances of calculated background concentrations and applied guidelines were observed at both of the sampled monitoring wells for chloride; and
- there were no reported exceedances of the calculated background concentrations and applied guidelines at the surface water sampling locations.

4.11.5 Former Bear Island Battery and N-42X Well Site

The area of interest is located south of the N-42X well head and was the historic location of a tank farm associated with the former Bear Island Battery. This location was identified during a Phase I ESA and subsequent Phase II investigations in 1998 and 2008 as having concentrations of salts and hydrocarbons exceeding the applied guidelines in proximity to the former Battery.

In 2009, this area was investigated with the advancement of one shallow borehole and one groundwater monitoring well. Additional sampling was precluded by the presence of drilling camp infrastructure on the site. Soil analytical data confirmed EC values above the applied CCME guideline. In 2010, five boreholes were advanced around the N-42X well site to further characterize and delineate soils impacts, two of which were completed as groundwater monitoring wells.

In 2019, C&R works included ongoing groundwater and surface water monitoring and are summarized below. Monitoring well locations are shown in Figure 7B.

4.11.5.1 Groundwater and Surface Water Monitoring

Three groundwater wells and one surface water sampling location are currently monitored around the former battery and current N-42X well site. One well was dry in 2019 and could not be sampled. A surface water sample was collected from the unnamed creek adjacent to the N-42X well site. Results of the program are summarized below:

- measurable NAPL was not detected at any monitoring location;

- field-measured pH values were within the CCME guideline range and below the calculated background values for island surficial sediments and surface water;
- exceedances of calculated background concentrations and applied guidelines were observed at the two sampled monitoring wells for parameters including chloride (one well), dissolved arsenic (one well), and dissolved iron (two wells); and
- no exceedances of calculated background concentrations or applied guidelines were reported for the surface water monitoring location.

4.11.6 Bear Island Flare Pit (BIFP)

A CSM has been developed for the Bear Island Flare Pit and is presented in Appendix 11.

The BIFP is situated downslope from the former Bear Island Battery site, near the current N-Pad location (Figures 7A/B). The flare pit was historically connected to the battery site by a flare line. As the flare pit had not been used since at least 1993, the site was supporting a heavy vegetation cover comprising primarily willows, alders, grasses and shrubs. A pipeline corridor consisting of eight buried lines running north-south intersects the site. A creek runs along the eastern and northern extents of the site. The overall topography slopes gradually down from the flare pit towards the Mackenzie River, approximately 120 m to the north; the distance to the river varies with seasonal water levels. The site is located along the north-central portion of Bear Island and may be subject to ice scouring and/or flooding during the Mackenzie River spring break-up.

In 2011, geophysical investigations including terrain conductivity, magnetic, and electrical resistivity surveys were completed across the BIFP site to help guide subsequent intrusive works. A single test pit was excavated to provide preliminary soil characterization. In 2012, six boreholes were advanced, three of which were completed as groundwater monitoring wells.

In 2014, a remedial action plan (RAP) was developed to address contaminant source removal. Approximately 527 m^3 of impacted material was excavated and removed to an approved landfill, approximately 327 m^3 of impacted material was excavated and stored in a temporary containment cell at BIT5, and approximately 320 m^3 of impacted material was excavated and moved to Mainland Biocell 1 for on-site treatment. Residual hydrocarbon and PAH impacts were left at the southeast and southwest perimeter of the excavated area pending further impact delineation upgradient (south) toward the former Bear Island Battery. Six test pits were completed south of the excavation boundary, confirming residual impacts to the southeast. A liner was placed over areas of residual impact prior to backfilling the excavated area with clean fill.

In March and September-October 2016, a supplementary Phase II ESA was completed around the former Flare Pit area. A supplementary Phase II ESA was completed at the Bear Island Flare Pit in 2017 including the advancement of nine boreholes, with one completed as a groundwater monitoring well.

C&R works in 2019 around the BIFP included groundwater and surface water sampling, as summarized below. The groundwater and surface water monitoring locations are shown in Figure 7B.

4.11.6.1 Groundwater and Surface Water Monitoring

Four monitoring wells and three surface water locations were included in the 2019 analytical program for the BIFP. Results from the sampling program are summarized below:

- measurable NAPL was not detected at any monitoring location;
- one well had a field-measured pH value which fell outside the FWAL guideline range. All remaining field-measured pH values were within the FWAL guideline range and below the applied background values for island surficial sediments and surface water; and
- a dissolved iron concentration exceeding the calculated background concentration and applied guideline was observed at one of the three surface water locations. All other analytical results were below the background concentrations and applied guidelines.

4.12 Goose Island

Goose Island (Figure 8A) is the third natural island included in the Norman Wells site. Goose Island is seasonally inundated with river ice and water. Vehicle access is typically limited to a few months each year.

In 1998, geophysical surveys and a preliminary soil investigation indicated an area of hydrocarbon impacted soil at a former fuel storage area adjacent to well pad Q-08X. In 2008, additional geophysical surveys were conducted at various spill locations, former tank storage areas, and borrow pit areas.

Soil and groundwater characterization programs have been completed at a number of areas across Goose Island since 2009. Annual groundwater monitoring was initiated in 2009 following installation of the first monitoring wells and is ongoing.

In 2017, a Phase II ESA was completed at the O-29X well site to provide delineation of impacts related to the former wellhead and associated infrastructure, which was abandoned and cut/capped in 2014. In 2018 one damaged monitoring well was abandoned and re-installed.

The 2019 C&R program for Goose Island included the annual groundwater monitoring program. Results of the annual groundwater monitoring program are summarized below. Additional groundwater monitoring activities were undertaken at the O-18X site and are reported under separate cover. Data collected from background locations is summarized in Appendix 3.

4.12.1 Groundwater and Surface Water Monitoring

Across Goose Island, five monitoring wells and one surface water location were included as part of the 2019 analytical schedule. All of the wells were dry or could not be located and subsequently were not sampled in 2019. Measurable NAPL was not detected at any monitoring location. The remaining surface water location was sampled in 2019 and the monitoring results are summarized below:

- the field-measured pH value was within the FWAL guideline range; and
- there were no reported exceedances of background and guidelines for any analyzed parameters.

Monitoring locations are shown in Figure 8B.

5 Quality Assurance/Quality Control (QA/QC)

The following is a description of the QA/QC program as included in the 2019 groundwater and soil monitoring programs. The intention of the C&R report is to summarize various environmental programs, without providing all related details, data tables and equations referenced in this description, which are reported under separate cover. Based on the review of QA/QC information, the overall data quality is considered acceptable for the purposes of the 2019 monitoring programs.

5.1 Water Sampling QA/QC

5.1.1 Laboratory QA/QC

Upon arrival of the Sample Receipt Confirmation from Bureau Veritas (BV) Canada, formerly Maxxam Analytics Inc., Advisian staff reviewed the confirmation form to verify that all the shipped samples had been received and that the requested parameters had been logged for analysis. For quality assurance purposes, Bureau Veritas Canada regularly uses calibration checks, surrogate matrix spikes, blanks, and laboratory duplicates during analyses. Laboratory QA/QC results indicated that quality assurance guidelines were generally met as outlined in the laboratory reports. Any deviations or exceptions to this have been summarized, along with potential impacts that such deviations may have had upon the reported data and its interpretation. The laboratory dataset was entered into the Advisian internal database for data management purposes following receipt and review of any Certificates of Analysis.

5.1.2 Field QA/QC – Field Duplicate Samples

In 2019, a total of 25 coded field duplicate samples for dissolved hydrocarbons, phenols, dissolved metals and trace elements, total metals and trace elements, and/or polycyclic aromatic hydrocarbons were submitted to the laboratory, representing approximately 10% of the actively monitored wells and surface water locations (159 total). The purpose of field duplicates was to determine repeatability and accuracy of analytical results.

For low-level concentrations (<0.1 mg/L), duplicate data within an order of magnitude are considered adequate. Higher analytical concentrations are typically assessed in terms of relative percent difference (RPD). The RPD between an original field sample and its blind field duplicate is calculated. Analytical data within an RPD of 50% (inorganic parameters) or 80% (organic parameters) are generally considered to be of good quality.

5.1.3 Field QA/QC – Trip Blank Samples

Coded trip blank samples consisting of mega-pure distilled water (i.e. hydrocarbon-free) were requested from Bureau Veritas and analyzed for BTEX, PHC F1 and F2. The purpose of a trip blank is to identify whether the inadvertent introduction of hydrocarbons has occurred during sample handling, transport, or in the laboratory. A total of nine coded trip blanks were submitted to the laboratory in 2019.

Trip blank analytical results for dissolved hydrocarbons including BTEX and PHC F1 and F2 were below method detection limits.

5.1.4 Field QA/QC – Field Blank Samples

Field blank samples are created by filling clean sample bottles with pure distilled water (i.e. hydrocarbon-free) in the same locations and following the same field sampling procedures as used during collection of groundwater and surface water samples. A total of nine coded field blanks were submitted to the laboratory for BTEX, PHC F1 and F2 in 2019. Field blank analytical results for dissolved hydrocarbons including BTEX and PHC F1 and F2 were below method detection limits.

5.2 Soil Sampling QA/QC

5.2.1 Field QA/QC – Field Duplicate Samples

Twelve coded field duplicate samples were submitted to the laboratory for analysis of petroleum hydrocarbon parameters. The purpose of a field duplicate is to determine repeatability and accuracy of analytical results. Soils analytical data within an RPD of 100% are generally considered to be of good quality. Duplicate data compiled generally indicates this criterion was met, and as such the data quality is considered satisfactory for the purposes of this program.

6 2020 Closure and Reclamation Program

Imperial is planning the 2020 C&R program for Norman Wells, based on data gathered from the 2019 and previous programs. It is anticipated that the following activities will be included in the 2020 program:

- the site wide groundwater and surface water monitoring program will be conducted in 2020;
- operations of the Refinery Bank and B38X remediation systems will be active in 2020;
- Bosworth Creek restoration activities will include monitoring the slope stabilization and revegetation progress, conducting maintenance of slope stabilization infrastructure, including adding mulch-soil mixture as required, inspecting silt fencing and repairing worn sections as needed;
- Phase II investigations will be conducted at well sites selected by IOR for abandonment, reported spill locations from operational facilities, and at historic areas where data gaps have been identified;
- ARB restoration and monitoring activities will include monitoring revegetation progress, soil sampling to determine available soil nutrients, re-seeding and monitoring of any invasive species and control and needed;
- background soil and water geochemical conditions document will be updated;
- wellhead cut and cap activities will be conducted at abandoned wells deemed by IOR to be no longer required for Site operations;
- selected remedial excavations that meet biocell acceptance criteria based on results from Phase II ESA programs and location accessibility during the 2020 field season;
- key applied technology and guideline development (vegetation and invertebrate eco-toxicity) projects will continue; and
- shallow permafrost conditions will be monitored through a network of thermistors installed in key areas during the 2013 and 2016 programs. The thermistors will assist in determining the potential for lateral groundwater migration above permafrost on a year-round basis in the vicinity of key areas of concern.

For general reference:

- Appendix 12 provides a series of historical trend charts for groundwater quality at selected monitoring wells for key parameters of interest (i.e. benzene, toluene, ethylbenzene and chloride);
- Appendix 13 provides an updated list of historical and on-going C&R program activities; and
- Figure 9 illustrates the APECs listed in Appendix 13, as well as the known areas of natural hydrocarbon seepage where they have been observed daylighting at ground surface.

7 Closure

We trust that this report satisfies your current requirements and provides suitable documentation for your records. If you have any questions or require further details, please contact the undersigned at any time.

Report Prepared by

Melissa Lord, C.E.T.
Environmental Technologist

Alex Haigh, P.Eng. (AB)
Environmental Engineer

Senior Review by:

REGISTERED PROFESSIONAL GEOLOGIST
M.J. BROWN
LICENSEE
NWT/NU

28 May 2020

PERMIT TO PRACTICE
WORLEYPARSONS CANADA SERVICES LTD.
Signature
Date 28 May 2020
PERMIT NUMBER: P 029
NWT/NU Association of Professional Engineers and Geoscientists

Michael Brown, M.Sc., P.Geol. (AB, NT)
Principal Hydrogeologist

Decommissioning & Restoration
Advisian Americas

Tables

Advisian
Worley Group

Table 1

2019 Groundwater and Surface Water Analytical Schedule

Sampling Location	Status	Field Analytical		Laboratory Analytical						
		Water Level	Field Parameters	Indicators	Routine Potability	Phenols	BTEX F1-F2	D.Metals	T.Metals	PAHs
Mainland West - Central Processing Facility										
CPF 97-2-7	E&PS	Y	Y	Y	-	-	-	-	-	-
CPF 98-6-3	E&PS	Y	Y	-	-	-	-	Y	-	-
CPF 09-6-19	E&PS	Y	Y	-	-	-	-	Y	-	-
Mainland West - F-28X Well Site										
F28 09-1-6	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
F28 09-2-6	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
F28 09-3-14	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
Mainland West - E-27X Well Site										
E27 09-2-16	E&PS	Y	Y	Y	-	-	-	-	-	-
Mainland Central - Biocells / B-33X Well Site										
ARB-10-2-3	E&PS	Y	Y	Y	-	-	Y	Y	-	-
ARB-12-1-4	E&PS	Y	Y	Y	-	-	Y	Y	-	-
ARB-12-4-2	E&PS	Y	Y	Y	-	-	-	Y	-	-
ARB-13-1-4.5	E&PS	Y	Y	Y	-	-	-	Y	-	-
ARB-13-3-4.5	E&PS	Y	Y	Y	-	-	Y	Y	-	-
ARB-13-5-4.5	E&PS	Y	Y	Y	-	-	-	Y	-	-
ARB-16-1-3 (re-install of ARB-12-2-2)	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
ARB-17-1-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
ARB-17-2-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
ARB-17-3-5	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BC2-15-1-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BC2-15-2-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BC2-15-3-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BC2-15-4-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
OPB 09-2-4	E&PS	Y	Y	Y	-	-	Y	-	-	-
OPB 09-3-4	E&PS	Y	Y	Y	-	-	Y	-	-	-
ARB-17-SW01	E&PS	n/a	Y	-	Y	Y	Y	-	Y	-
ARB-17-SW02	E&PS	n/a	Y	-	Y	Y	Y	-	Y	-
Mainland Central - B-30X Well Site										
B30X-12-1-4	E&PS	Y	Y	-	-	Y	Y	Y	-	-
B30X-12-2-4	E&PS	Y	Y	-	-	Y	Y	Y	-	-
B30-13-1-5.4	E&PS	Y	Y	Y	-	-	Y	-	-	-
B30-13-2-4.5	E&PS	Y	Y	-	-	Y	-	Y	-	-
B30-13-3-4.5	E&PS	Y	Y	-	-	-	-	Y	-	-
B30-13-4-3.9	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
B30-17-1-5	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
B30-17-2-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
B30-19-01-5	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
Mainland Central - C-30X Well Site / Bosworth Creek and Delta										
C30-10-1-5	E&PS	Y	Y	Y	-	Y	Y	Y	-	-
BOS-DP-13-1-1.4	E&PS	Y	Y	Y	-	Y	Y	Y	-	Y
BOS-DP-13-2-1.35	E&PS	Y	Y	Y	-	Y	-	Y	-	Y
BOS-DP-13-3-2	E&PS	Y	Y	-	Y	Y	Y	Y	-	Y
BOS-DP-13-4-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	Y
BOS SW01	E&PS	n/a	Y	-	Y	Y	Y	-	Y	-

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Sampling Location	Status	Field Analytical		Laboratory Analytical						
		Water Level	Field Parameters	Indicators	Routine Potability	Phenols	BTEX F1-F2	D.Metals	T.Metals	PAHs
Mainland Central - Former Battery #3										
BT3 97-11-11	E&PS	Y	Y	Y	-	-	-	Y	-	-
BT3 98-7-7	E&PS	Y	Y	-	-	-	-	Y	-	-
BT3 99-20-13	E&PS	Y	Y	Y	-	-	-	-	-	-
BT3 99-23-13	E&PS	Y	Y	Y	-	-	-	Y	-	Y
BT3 02-32-6	E&PS	Y	Y	-	-	-	-	Y	-	Y
BT3 02-34-4	E&PS	Y	Y	Y	-	-	-	Y	-	Y
BT3 02-36-4	E&PS	Y	Y	-	-	Y	Y	Y	-	-
BT3-18-1-5.5	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
Mainland Central - F-31X Well Site										
F31 98-1-4	E&PS	Y	Y	-	-	-	-	Y	-	-
F31 97-3-5	E&PS	Y	Y	Y	-	-	Y	-	-	-
Mainland Central - G-32X Well Site										
G32-10-1-3	E&PS	Y	Y	Y	-	Y	-	Y	-	-
Mainland Central - E-33X Well Site										
E33-18-1-2.5	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
E33-19-01-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
E33-19-02-5	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
Mainland East - Former Fuel Tanks and Potential Campsite Biocell										
CAB 09-3-3	E&PS	Y	Y	-	-	-	-	Y	-	-
FT-10-1-3	E&PS	Y	Y	-	-	-	-	Y	-	-
Mainland East - C-36X Well Site										
C36-10-1-3	E&PS	Y	Y	Y	-	Y	Y	Y	-	-
C36-10-2-3	E&PS	Y	Y	-	-	-	-	Y	-	-
C36-10-3-3	E&PS	Y	Y	Y	-	Y	-	Y	-	-
C36 SW01	E&PS	n/a	Y	Y	-	Y	-	-	Y	-
Mainland East - B-38X Well Site										
B38 03-38-5	E&PS	Y	Y	Y	-	-	Y	Y	-	-
B38 08-2-4	E&PS	Y	Y	-	-	-	Y	Y	-	-
B38-10-2-5	E&PS	Y	Y	-	-	-	Y	Y	-	-
B38-10-1-5	E&PS	Y	Y	-	-	-	-	Y	-	-
Mainland East - B-38X Remediation System										
B38-N-INLET	E&PS	n/a	Y	-	Y	-	Y	Y	-	Y
FTA-N-INLET	E&PS	n/a	Y	-	Y	-	Y	Y	-	Y
LT7-INLET	E&PS	n/a	Y	-	Y	-	Y	Y	-	Y
Mainland East - Fire Training Area										
FTA 99-2-4	E&PS	Y	Y	Y	-	-	Y	-	-	-
FTA 99-3-4	E&PS	Y	Y	Y	-	-	Y	-	-	-
FTA 98-4-5	E&PS	Y	Y	-	-	-	Y	-	-	-
Mainland East - Reduced Crude Flare Pit										
RCF 03-1-5	E&PS	Y	Y	Y	-	-	-	Y	-	-
RCF 98-3-4	E&PS	Y	Y	Y	-	-	-	Y	-	-
RCF-16-SW01	E&PS	n/a	Y	Y	-	-	-	-	Y	-

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		Water Level	Field Parameters	Indicators	Routine Potability	Phenols	BTEX F1-F2	D.Metals	T.Metals	PAHs
Mainland East - Mainland Tank Farm										
MTF 98-4-5	E&PS	Y	Y	Y	-	-	-	-	-	-
MTF 98-5-4	E&PS	Y	Y	Y	-	-	-	Y	-	-
TF 02-7-3	E&PS	Y	Y	Y	-	Y	Y	Y	-	-
TF 02-9-3	E&PS	Y	Y	-	-	-	Y	Y	-	-
TF 02-10-5	E&PS	Y	Y	Y	-	Y	Y	Y	-	-
TF 03-11-4	E&PS	Y	Y	-	-	-	Y	Y	-	-
Mainland East - B-42X Well Site										
B42-17-1-5	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
B42-17-2-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
B42-17-3-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
Mainland East - Former Refinery										
NWR 98-13-21	E&PS	Y	Y	Y	-	-	-	Y	-	Y
NWR 98-23-21	E&PS	Y	Y	Y	-	-	Y	Y	-	-
NWR 02-12-7	E&PS	Y	Y	Y	-	-	-	-	-	-
NWR 03-42-19	E&PS	Y	Y	Y	-	-	Y	-	-	-
NWR 03-43-20	E&PS	Y	Y	Y	-	-	Y	-	-	-
NWR 09-4-5	E&PS	Y	Y	Y	-	-	Y	-	-	Y
NWR 09-2-26	E&PS	Y	Y	Y	-	-	Y	Y	-	-
NWR 09-5-19	E&PS	Y	Y	Y	-	-	-	Y	-	-
RB-OBS-28	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-OBS-29	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-OBS30	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-OBS32	E&PS	Y	n/a	-	-	-	-	-	-	-
NWR-OBS37	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-OBS35	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-OBS36	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-OBS38	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-OBS39	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-RW-1	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-RW-2	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-RW-4	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-RW-5	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-RW-6	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-RW-7	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-RW-8	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-RW-9	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-RW-10	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-RW-11	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-RW-12	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-RW-13	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-RW-14	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-OBS-46	E&PS	Y	Y	-	Y	-	Y	Y	-	-
RB-OBS-47	E&PS	Y	Y	-	Y	-	Y	Y	-	-
RB-OBS-48	E&PS	Y	n/a	-	-	-	-	-	-	-
RB-MW17-01	E&PS	Y	Y	-	Y	-	Y	Y	-	-
RB-MW17-02	E&PS	Y	Y	-	Y	-	Y	Y	-	-
RB-MW17-03	E&PS	Y	Y	-	Y	-	Y	Y	-	-
RB-MW17-04	E&PS	Y	Y	-	Y	-	Y	Y	-	-
RB-MW17-05	E&PS	Y	Y	-	Y	-	Y	Y	-	-

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		Water Level	Field Parameters	Indicators	Routine Potability	Phenols	BTEX F1-F2	D.Metals	T.Metals	PAHs
RB-MW17-06	**E&PS**	Y	Y	-	Y	-	Y	Y	-	-
RB-MW17-07	**E&PS**	Y	Y	-	Y	-	Y	Y	-	-
RB-MW17-08	**E&PS**	Y	Y	-	Y	-	Y	Y	-	-
RB-MW17-09	**E&PS**	Y	Y	-	Y	-	Y	Y	-	-
RB-MW17-10	**E&PS**	Y	Y	-	Y	-	Y	Y	-	-
RB-MW17-11	**E&PS**	Y	Y	-	Y	-	Y	Y	-	-
P100	**E&PS**	n/a	n/a	-	Y	-	Y	Y	-	Y
P200	**E&PS**	n/a	n/a	-	Y	-	Y	Y	-	Y
P700	**E&PS**	n/a	n/a	-	Y	-	Y	Y	-	Y
Sumps - C-27X Sump										
C27-16-1-3	**E&PS**	Y	Y	-	Y	Y	Y	Y	-	-
C27-16-2-3	**E&PS**	Y	Y	-	Y	Y	Y	Y	-	-
C27-16-3-4	**E&PS**	Y	Y	-	Y	Y	Y	Y	-	-
C27-16-4-3	**E&PS**	Y	Y	-	Y	Y	Y	Y	-	-
Sumps - Cemetery Sump										
CEM 08-2-5	**E&PS**	Y	Y	Y	-	-	-	Y	-	-
CEM 08-4-5	**E&PS**	Y	Y	Y	-	-	-	Y	-	-
CEM 09-1-4	**E&PS**	Y	Y	-	-	Y	-	Y	-	-
CEM 09-3-2	**E&PS**	Y	Y	Y	-	Y	-	Y	-	-
CEM-13-1-2	**E&PS**	Y	Y	-	Y	Y	Y	Y	-	-
Sumps - Mainland Sumps Area										
MLS 02-5-8	**E&PS**	Y	Y	Y	-	-	-	-	-	-
MLS 09-1-3	**E&PS**	Y	Y	Y	-	-	-	Y	-	-
MLS 09-2-3	**E&PS**	Y	Y	Y	-	-	-	-	-	-
MLS 09-5-3	**E&PS**	Y	Y	Y	-	-	-	-	-	-
MLS 09-15-3	**E&PS**	Y	Y	Y	-	-	-	Y	-	-
MLS-10-1-7	**E&PS**	Y	Y	Y	-	-	-	-	-	-
MLS-13-2-3	**E&PS**	Y	Y	-	Y	Y	Y	Y	-	-
MLS-14-5-4	**E&PS**	Y	Y	Y	-	-	-	Y	-	-
Sumps - Mainland Drilling Sump										
MLS 08-1-4	**E&PS**	Y	Y	Y	-	-	-	Y	-	-
MLS 08-2-5	**E&PS**	Y	Y	Y	-	-	-	-	-	-
MLS 08-3-4	**E&PS**	Y	Y	Y	-	-	-	Y	-	-
MLS-13-1-3	**E&PS**	Y	Y	Y	-	-	-	Y	-	-
Sumps - Closed Well Services Sump										
MLS 02-7-7	**E&PS**	Y	Y	Y	-	-	-	-	-	-
MLS 02-8-8	**E&PS**	Y	Y	Y	-	-	-	-	-	-
MLS 02-9-8	**E&PS**	Y	Y	Y	-	-	-	-	-	-
MLS 02-10-8	**E&PS**	Y	Y	Y	-	-	-	-	-	-
MLS 09-9-2	**E&PS**	Y	Y	Y	-	-	-	Y	-	-
MLS-10-2-3	**E&PS**	Y	Y	Y	-	Y	-	Y	-	-
MLS-13-3-3	**E&PS**	Y	Y	Y	-	Y	-	-	-	-
MLS-13-4-3	**E&PS**	Y	Y	Y	-	Y	-	Y	-	

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		Water Level	Field Parameters	Indicators	Routine Potability	Phenols	BTEX F1-F2	D.Metals	T.Metals	PAHs
Bear Island - Bear Island West Sumps										
BI 08-3-2	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BI 08-6-4	E&PS	Y	Y	Y	-	-	-	Y	-	-
BI 08-7-2	E&PS	Y	Y	Y	-	-	-	Y	-	-
BI 08-8-4	E&PS	Y	Y	Y	-	-	Y	Y	-	-
BI DP 08-4	E&PS	Y	Y	-	-	-	-	-	-	-
BI DP 08-5	E&PS	Y	Y	Y	-	-	-	-	-	-
BIS-10-3-DP	E&PS	Y	Y	Y	-	-	-	Y	-	-
BIS-16-1-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIS-16-7-5	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIS-16-8-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIS-16-10-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIS-16-11-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIS-16-12-5	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BI-13-5-2	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BI-13-18-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BI SW01	E&PS	n/a	Y	Y	-	-	-	-	-	-
BI SW03	E&PS	n/a	Y	Y	-	-	-	-	-	-
BI SW04	E&PS	n/a	Y	Y	-	-	-	-	-	-
BI SW05	E&PS	n/a	Y	Y	-	-	-	-	-	-
BI SW06	E&PS	n/a	Y	Y	-	-	-	-	-	-
BI-13-11	E&PS	n/a	Y	-	-	Y	-	-	Y	-
Bear Island - R-36X Well Site										
R36-16-1-5	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
R36-16-3-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
R36-16-4-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
R36-16-6-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
R36-16-9-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
Bear Island - Former Bear Island Battery										
BI-14-13-3	E&PS	Y	Y	-	-	-	-	Y	-	-
BI BT1 09-1-4	E&PS	Y	Y	-	-	Y	-	Y	-	-
BIBT1-15-1-3.5	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIBT1-15-2-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIBT1-15-4-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIBT1-15-5-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIBT1-15-7-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIBT1-16-1-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIBT1-16-2-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIBT1-16-3-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
Bear Island - Bear Island East Sump (Sump 6)										
BI 08-2-3	E&PS	Y	Y	Y	-	-	-	-	-	-
BI-13-2-4.5	E&PS	Y	Y	Y	-	-	-	-	-	-
BIWS-16-1-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIS6-17-SW01	E&PS	n/a	Y	Y	-	-	-	-	-	-
BI SW-13-1	E&PS	n/a	Y	-	Y	Y	Y	-	Y	-
Bear Island - N-42X Well Site										
BIB 98-2-5	E&PS	Y	Y	Y	-	-	-	Y	-	-
BIN42-10-1-5	E&PS	Y	Y	Y	-	Y	-	Y	-	-
BIN42-10-2-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIN42 SW01	E&PS	n/a	Y	-	Y	Y	Y	-	Y	-

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		Water Level	Field Parameters	Indicators	Routine Potability	Phenols	BTEX F1-F2	D.Metals	T.Metals	PAHs
Bear Island - Former Bear Island Flare Pit										
BIFP-16-1-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIFP-16-2-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIFP-16-3-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIFP-17-1-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
BIFP-16-SW1	E&PS	n/a	Y	-	Y	Y	Y	-	Y	-
BIFP-17-SW2	E&PS	n/a	Y	-	Y	Y	Y	-	Y	-
BI SW09	E&PS	n/a	Y	-	-	-	Y	-	Y	-
Goose Island										
GIP9 09-1-4	E&PS	Y	Y	Y	-	Y	-	Y	-	-
GIQ8 09-1-6	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
GIQ8-10-1-5	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
GIT10 09-1-4	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
GIT10 09-2-3	E&PS	Y	Y	-	Y	Y	Y	Y	-	-
GI SW05	E&PS	N/A	Y	-	Y	Y	Y	-	Y	-
Mainland - Background										
WBIO 08-1-2	Background	Y	Y	Y	-	Y	-	Y	-	Y
BT3 97-2-5	Background	-	-	-	-	-	-	-	-	-
BT3-99-21-12	Background	Y	Y	Y	-	-	-	Y	-	Y
B38 93-2-4	Background	-	-	-	-	-	-	-	-	-
B38 02-33-3	Background - Destroyed	-	-	-	-	-	-	-	-	-
B38 02-34-3	Background - Destroyed	-	-	-	-	-	-	-	-	-
B38-16-1-3	Background	Y	Y	-	Y	Y	Y	Y	-	-
B38-16-2-4	Background	Y	Y	-	Y	Y	Y	Y	-	-
NWR 98-18-15	Background	-	-	-	-	-	-	-	-	-
NWR 99-16-17	Background	-	-	-	-	-	-	-	-	-
NWR-09-1-20	Background	Y	Y	Y	-	-	-	Y	-	Y
NWR-09-3-20	Background	Y	Y	Y	-	-	-	Y	-	Y
NWR-09-4-17	Background	Y	Y	Y	-	-	-	Y	-	-
NWR 03-38-3	Background	-	-	-	-	-	-	-	-	-
RB 02-3-2	Background	-	-	-	-	-	-	-	-	-
RB-13-2-2.4	Background - Damaged	-	-	-	-	-	-	-	-	-
RB-13-4-3	Background - Damaged	-	-	-	-	-	-	-	-	-
RB-13-5-2.4	Background - Damaged	-	-	-	-	-	-	-	-	-
RB-13-8-1.5	Background - Damaged	-	-	-	-	-	-	-	-	-
MLS 09-6-2	Background	-	-	-	-	-	-	-	-	-
MLS-13-9-3	Background	Y	Y	-	Y	Y	Y	Y	-	Y
MLS-14-2-3	Background	Y	Y	-	Y	Y	Y	Y	-	Y
MLS-14-3-3/MLS-14-3-SW	Background - Damaged	-	-	-	-	-	-	-	-	-
MLS-14-4-3/MLS-14-4-SW	Background - Damaged	-	-	-	-	-	-	-	-	-
MLS-14-8-3/MLS-14-8-SW	Background - Damaged	-	-	-	-	-	-	-	-	-
MWBG-10-1-3	Background	Y	Y	-	Y	Y	Y	Y	-	Y
MWBG-12-1-3	Background - Destroyed	-	-	-	-	-	-	-	-	-
MCBG-10-1-3	Background	Y	Y	-	Y	Y	Y	Y	-	Y
MCBG-12-1-2	Background	Y	Y	-	Y	Y	Y	Y	-	Y
MCBG-16-5-4	Background - Destroyed	-	-	-	-	-	-	-	-	-
MEBG-10-1-3	Background	Y	Y	-	Y	Y	Y	Y	-	Y
MEBG-12-1-3	Background	-	-	-	-	-	-	-	-	-
MEBG-12-2-3	Background	Y	Y	-	Y	Y	Y	Y	-	Y
MEBG-15-4-3	Background	Y	Y	-	Y	Y	Y	Y	-	Y

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Table 1

2019 Groundwater and Surface Water Analytical Schedule

Sampling Location	Status	Field Analytical		Laboratory Analytical						
		Water Level	Field Parameters	Indicators	Routine Potability	Phenols	BTEX F1-F2	D.Metals	T.Metals	PAHs
Bear Island - Background										
BI 08-1-4	Background - Destroyed	-	-	-	-	-	-	-	-	-
BI-13-6-2	Background	Y	Y	-	Y	Y	Y	Y	-	Y
BI-14-8-3	Background - Abandoned	-	-	-	-	-	-	-	-	-
BIBG-10-1-4	Background	Y	Y	-	Y	Y	Y	Y	-	Y
BIBG-10-2-4	Background - Damaged	-	-	-	-	-	-	-	-	-
BIBG-12-1-7	Background - Damaged	-	-	-	-	-	-	-	-	-
BIBG-10-2-4	Background - Damaged	-	-	-	-	-	-	-	-	-
BIBG-12-2-4	Background	Y	Y	-	Y	Y	Y	Y	-	Y
FIBG-10-1-4	Background - Destroyed	-	-	-	-	-	-	-	-	-
Goose Island - Background										
GIBG-10-1-5	Background	Y	Y	-	Y	Y	Y	Y	-	-
GIBG-10-2-3	Background	Y	Y	-	Y	Y	Y	Y	-	-

NOTES:

1. Y in data row denotes analyte(s) to be sampled
2. - in data row denotes analyte(s) not to be sampled
3. n/a denotes not applicable
4. Status Categories:
   - E&PS: location included in 2019 E&PS environmental program
   - Background: location used in updating background guidelines
   - Damaged / Destroyed / Abandoned: location condition prevents sample collection
   - Backfilled: location was backfilled during separate program
5. Location not included in 2019 environmental program

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Table 2

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
Mainland West - Central Processing Facility - Surficial Sediment																						
CPF 98-6-3	**W-CAT-1**	598951.622	7241860.042	61.12	61.76	0.64	2.90	58.13	N/A	0.80 - 3.00	06-Aug-2016	2.17	1.53	N/M	N/A	N/A	1.53	59.59	N/M	1.00E-07	Fill/peat/silt	Oil on bailer. Brown material on tap.
											17-Aug-2017	2.13	1.49	N/M	N/A	N/A	1.49	59.63	N/M			
											16-Jul-2018	2.08	1.44	N/M	N/A	N/A	1.44	59.68	0.59			
											18-Jun-2019	1.98	1.34	N/M	N/A	N/A	1.34	59.78	N/M			
Mainland West - Central Processing Facility - Bedrock																						
CPF 09-6-19	**W-CAT-3**	598973.721	7242191.602	62.61	63.41	0.80	18.80	43.81	15.80 - 18.80	15.50 - 18.95	06-Aug-2016	9.62	8.82	N/M	N/A	N/A	8.82	53.79	N/M	N/M	Silty sandstone	
											17-Aug-2017	9.93	9.13	N/M	N/A	N/A	9.13	53.48	N/M			
											16-Jul-2018	9.70	8.90	N/M	N/A	N/A	8.90	53.71	N/M			Loose pvc joint, kinked 0.5 mbgs
											18-Jun-2019	10.93	10.13	N/M	N/A	N/A	10.13	52.48	N/M			Orange/Rust coloured water
CPF 97-2-7	**W-CAT-3**	598809.870	7242314.371	62.72	63.35	0.63	6.70	56.02	0.80 - 3.80	4.70 - 6.70	06-Aug-2016	1.30	0.67	N/M	N/A	N/A	0.67	62.05	N/M	N/M	Siltstone	
											17-Aug-2017	2.22	1.59	N/M	N/A	N/A	1.59	61.13	N/M			
											20-Jul-2018	1.26	0.63	N/M	N/A	N/A	0.63	62.09	0.62			
											11-Jul-2019	2.71	2.08	N/M	N/A	N/A	2.08	60.64	N/M			
Mainland West - E-27X Well Site - Bedrock																						
E27 09-2-16	**W-CAT-3**	598724.257	7241687.822	58.16	59.01	0.85	16.30	41.86	15.30 - 16.30	12.75 - 16.70	03-Aug-2016	10.65	9.80	N/M	N/A	N/A	9.80	48.36	N/M	>1.0E-05	Silty sandstone	
											20-Aug-2017	11.39	10.54	N/M	N/A	N/A	10.54	47.62	N/M			
											16-Jul-2018	10.96	10.11	N/M	N/A	N/A	10.11	48.05	0.83			H2S odour, clear
											11-Jul-2019	11.04	10.19	N/M	N/A	N/A	10.19	47.97	N/M			Sheen, hydrocarbon odour
Mainland West - F-28X Well Site - Surficial Sediment																						
F28 09-1-6	**W-CAT-4**	598867.753	7241600.641	49.09	49.93	0.84	6.00	43.09	3.00 - 6.00	2.70 - 6.00	22-Jul-2018	5.587	4.730	5.566	0.021	0.017	4.730	44.360	N/M	N/M	Sandy silt/sand/sand & gravel/sandy silt	Black, crude appearance
											11-Jul-2019	5.695	4.818	5.649	0.046	0.037	4.818	44.272	N/M			
F28 09-2-6	**W-CAT-4**	598893.314	7241573.950	48.86	49.63	0.77	5.50	43.36	2.50 - 5.50	2.20 - 6.00	22-Jul-2018	N/M	N/M	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Clayey silt/sand/sandy silt & gravel	Could not locate
											11-Jul-2019	5.729	4.927	5.689	0.040	0.032	4.927	43.933	N/M			Dark brown, black product on well tape
Mainland West - F-28X Well Site - Bedrock																						
F28 09-3-14	**W-CAT-3**	598893.554	7241575.954	48.78	49.72	0.94	14.10	34.68	12.10 - 14.10	11.80 - 14.50	22-Jul-2018	N/M	N/M	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Silty sandstone/silty shale	Could not locate
											11-Jul-2019	3.090	1.302	2.030	1.060	0.848	1.302	47.478	N/M			Black product on well tape
Mainland Central - Biocells / B-33X Well Site - Surficial Sediment																						
ARB-10-2-3	**W-CAT-1**	599730.914	7241983.610	N/M	N/M	N/A	3.00	N/A	1.50 - 3.00	1.20 - 2.40	04-Aug-2016	1.81	N/A	N/M	N/A	N/A	N/A	N/A	N/M	8.42E-07	Silty Clay and Sand	Replaced lock
											12-Aug-2017	1.84	N/A	N/M	N/A	N/A	N/A	N/A	N/M			
											11-Jul-2018	1.76	1.66[¥]	N/M	N/A	N/A	1.66[¥]	N/A	0.10			
											11-Jul-2019	1.71	1.59[¥]	N/M	N/A	N/A	1.59[¥]	N/A	0.12			
ARB-12-1-4	**W-CAT-1**	599719.248	7241937.631	64.66	65.40	0.74	3.40	61.26	1.90 - 3.40	1.50 - 3.40	04-Aug-2016	2.42	1.68	N/M	N/A	N/A	1.68	62.98	N/M	1.00E-06	Sandy Gravel/Sand/Top Soil	
											11-Aug-2017	2.48	1.74	N/M	N/A	N/A	1.74	62.92	N/M			
											11-Jul-2018	2.42	1.68	N/M	N/A	N/A	1.68	62.98	0.74			
											11-Jul-2019	2.41	1.67	N/M	N/A	N/A	1.67	62.99	0.74			
ARB-12-4-2	**W-CAT-1**	599781.082	7241921.930	64.92	65.62	0.70	2.45	62.47	0.75 - 2.25	0.40 - 2.45	04-Aug-2016	2.06	1.36	N/M	N/A	N/A	1.36	63.56	N/M	2.40E-06	Gravel fill/Sand/Peat	
											11-Aug-2017	2.05	1.35	N/M	N/A	N/A	1.35	63.57	N/M			
											11-Jul-2018	1.97	1.27	N/M	N/A	N/A	1.27	63.65	0.70			
											11-Jul-2019	1.98	1.28	N/M	N/A	N/A	1.28	63.64	0.71			
ARB-13-1-4.5	**W-CAT-1**	599684.676	7241949.919	63.13	64.15	1.03	N/A	N/A	2.70 - 4.20	2.33 - 4.50	04-Aug-2016	1.64	0.61	N/M	N/A	N/A	0.61	62.51	N/M	8.10E-08	Sandy clay	
											12-Aug-2017	1.86	0.83	N/M	N/A	N/A	0.83	62.29	N/M			Installed dedicated bailer
											11-Jul-2018	1.94	0.91	N/M	N/A	N/A	0.91	62.21	1.32			
											12-Jul-2019	2.06	1.03	N/M	N/A	N/A	1.03	62.09	1.34			
ARB-13-3-4.5	**W-CAT-1**	599590.175	7241935.302	62.82	63.85	1.03	N/A	N/A	2.70 - 4.20	2.40 - 4.50	04-Aug-2016	1.92	0.89	N/M	N/A	N/A	0.89	61.93	N/M	N/M	Sandy clay/Siltstone	
											12-Aug-2017	1.83	0.80	N/M	N/A	N/A	0.80	62.02	N/M			Needs permanent bailer
											12-Jul-2018	1.90	0.87	N/M	N/A	N/A	0.87	61.95	1.24			
											11-Jul-2019	1.86	0.83	N/M	N/A	N/A	0.83	61.99	1.52			Severely jack fosted
ARB-13-5-4.5	**W-CAT-1**	599643.671	7241876.137	63.12	64.07	0.95	4.50	N/A	2.85 - 4.35	2.55 - 4.50	04-Aug-2016	1.82	0.87	N/M	N/A	N/A	0.87	62.25	N/M	N/M	Sandy clay	
											12-Aug-2017	4.98	4.03	N/M	N/A	N/A	4.03	59.09	N/M			
											12-Jul-2018	1.71	0.76	N/M	N/A	N/A	0.76	62.36	0.84			
											11-Jul-2019	1.70	0.75	N/M	N/A	N/A	0.75	62.37	0.90			
ARB-16-1-3	**W-CAT-1**	N/M	N/M	N/M	N/M	0.85	3.00	N/A	1.50 - 3.00	1.40 - 3.35	11-Aug-2017	2.75	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Silty sand	
											12-Jul-2018	2.59	1.81[¥]	N/M	N/A	N/A	1.81[¥]	N/A	0.78			
											11-Jul-2019	2.45	1.65[¥]	N/M	N/A	N/A	1.65[¥]	N/A	0.80			
ARB-17-1-3	**W-CAT-1**	N/M	N/M	N/M	N/M	1.0	4.5	N/A	1.70 - 3.20	1.40 - 3.20	14-Oct-2017	1.35	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Clayey silt	
											11-Jul-2018	1.51	0.45[¥]	N/M	N/A	N/A	0.45[¥]	N/A	1.06			
											13-Jul-2019	1.66	0.49[¥]	N/M	N/A	N/A	0.49[¥]	N/A	1.17			

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Table 2

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
ARB-17-2-3	**W-CAT-1**	N/M	N/M	N/M	N/M	0.95	3.3	N/A	1.80 - 3.30	1.50 - 3.30	14-Oct-2017	1.15	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Clayey silt	
											12-Jul-2018	1.24	0.24[¥]	N/M	N/A	N/A	0.24[¥]	N/A	1.00			
											11-Jul-2019	1.25	0.18[¥]	N/M	N/A	N/A	0.18[¥]	N/A	1.07			
ARB-17-3-5	**W-CAT-1**	N/M	N/M	N/M	N/M	1.04	4.6	N/A	3.10 - 4.60	2.40 - 4.60	14-Oct-2017	1.53	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Clayey silt/Sandy silt	
											12-Jul-2018	1.71	0.66[¥]	N/M	N/A	N/A	0.66[¥]	N/A	1.05			
											11-Jul-2019	1.76	0.62[¥]	N/M	N/A	N/A	0.62[¥]	N/A	1.14			
BC2-15-1-3	**W-CAT-1**	599893.080	7242021.090	64.91	65.74	0.83	3.0	N/A	1.50 - 3.00	1.20 - 3.00	04-Aug-2016	2.21	1.38	N/M	N/A	N/A	1.38	63.53	N/M	N/M	Sandy silt	
											12-Aug-2017	2.25	1.42	N/M	N/A	N/A	1.42	63.49	N/M			
											11-Jul-2018	2.22	1.39	N/M	N/A	N/A	1.39	63.52	0.83			
											12-Jul-2019	2.23	1.40	N/M	N/A	N/A	1.40	63.51	0.86			
BC2-15-2-4	**W-CAT-1**	599908.110	7241971.250	64.91	65.61	0.70	3.8	N/A	2.30 - 3.80	2.00 - 3.80	04-Aug-2016	1.95	1.25	N/M	N/A	N/A	1.25	63.66	N/M	1.30E-07	Silty clay	
											12-Aug-2017	1.88	1.18	N/M	N/A	N/A	1.18	63.73	N/M			
											11-Jul-2018	1.89	1.19	N/M	N/A	N/A	1.19	63.72	0.76			
											12-Jul-2019	1.93	1.23	N/M	N/A	N/A	1.23	63.68	0.70			
BC2-15-3-4	**W-CAT-1**	599893.890	7241906.730	64.56	65.32	0.76	3.80	N/A	2.00 - 3.50	1.80 - 3.50	04-Aug-2016	1.60	0.84	N/M	N/A	N/A	0.84	63.72	N/M	N/M	Silty clay	
											11-Aug-2017	1.55	0.79	N/M	N/A	N/A	0.79	63.77	N/M			
											11-Jul-2018	1.47	0.71	N/M	N/A	N/A	0.71	63.85	0.90			
											12-Jul-2019	1.42	0.66	N/M	N/A	N/A	0.66	63.90	0.93			
BC2-15-4-3	**W-CAT-1**	599844.080	7241872.110	64.73	65.56	0.83	2.80	N/A	1.30 - 2.80	1.00 -2.80	04-Aug-2016	1.86	1.03	N/M	N/A	N/A	1.03	63.70	N/M	N/M	Sandy silt	
											11-Aug-2017	1.87	1.04	N/M	N/A	N/A	1.04	63.69	N/M			
											11-Jul-2018	1.81	0.98	N/M	N/A	N/A	0.98	63.75	0.86			
											11-Jul-2019	1.80	0.97	N/M	N/A	N/A	0.97	63.76	0.88		Dry
OPB 09-2-4	**W-CAT-1**	599772.127	7242049.770	64.43	65.24	0.81	4.00	60.43	1.00 - 4.00	0.80 - 4.30	11-Jul-2018	2.05	1.24	N/M	N/A	N/A	1.24	63.19	0.51	1.50E-06	Sand & gravel fill/sandy silt/silty clay	Well not locked. Secured with rope
											11-Jul-2019	2.06	1.25	N/M	N/A	N/A	1.25	63.18	0.52		
OPB 09-3-4	**W-CAT-1**	599741.345	7242028.458	64.14	64.94	0.80	4.10	60.04	1.10 - 4.10	0.90 - 4.10	11-Jul-2018	1.78	0.98	N/M	N/A	N/A	0.98	63.16	0.23	1.70E-06	Sand & gravel/silt/silty clay/siltstone	
											11-Jul-2019	1.73	0.93	N/M	N/A	N/A	0.93	63.21	0.18		
Mainland Central - B-30X Well Site - Surficial Sediment																						
B30X-12-1-4	**W-CAT-1**	599460.422	7242066.046	63.62	64.41	0.79	4.50	59.12	1.00 - 4.00	0.70 - 4.00	04-Aug-2016	2.39	1.60	N/M	N/A	N/A	1.60	62.02	N/M	N/M	Silty Sand/Clay	
											13-Aug-2017	2.89	2.10	N/M	N/A	N/A	2.10	61.52	N/M			
											11-Jul-2018	3.67	2.88	N/M	N/A	N/A	2.88	60.74	N/M			
											13-Jul-2019	3.94	3.15	N/M	N/A	N/A	3.15	60.47	0.89			
B30X-12-2-4	**W-CAT-1**	599472.180	7242075.933	62.95	63.74	0.80	3.80	59.15	0.70 - 3.70	0.50 - 3.80	04-Aug-2016	1.71	0.92	N/M	N/A	N/A	0.92	62.03	N/M	N/M	Sand/Clay	
											13-Aug-2017	2.73	1.94	N/M	N/A	N/A	1.94	61.01	N/M			
											11-Jul-2018	3.041	2.244	3.039	0.002	0.002	2.244	60.705	N/M			
											13-Jul-2019	3.18	2.39	N/M	N/A	N/A	2.39	60.56	1.01			
B30-13-1-5.4	**W-CAT-1**	599472.007	7241920.271	61.91	62.92	1.01	5.4	56.51	2.10 - 5.10	1.80 - 5.40	04-Aug-2016	2.13	1.12	N/M	N/A	N/A	1.12	60.79	N/M	2.90E-08	Sandy clay	Added dedicated bailer
											13-Aug-2017	2.77	1.76	N/M	N/A	N/A	1.76	60.15	N/M			
											12-Jul-2018	2.30	1.29	N/M	N/A	N/A	1.29	60.62	N/M			
											13-Jul-2019	2.64	1.63	N/M	N/A	N/A	1.63	60.28	0.96			
B30-13-2-4.5	**W-CAT-1**	599613.230	7242077.063	63.31	64.23	0.92	4.5	58.81	2.40 - 3.90	2.10 - 4.50	04-Aug-2016	2.78	1.86	N/M	N/A	N/A	1.86	61.45	N/M	N/M	Sandy clay	
											13-Aug-2017	2.89	1.96	N/M	N/A	N/A	1.96	61.34	N/M			
											12-Jul-2018	3.85	2.93	N/M	N/A	N/A	2.93	60.38	N/M			
											13-Jul-2019	3.83	2.91	N/M	N/A	N/A	2.91	60.40	0.87			
B30-13-3-4.5	**W-CAT-1**	599464.259	7242109.385	63.52	64.42	0.90	4.5	59.02	2.70 - 4.20	2.40 - 4.50	04-Aug-2016	2.42	1.52	N/M	N/A	N/A	1.52	62.00	N/M	N/M	Silty clay	
											13-Aug-2017	2.95	2.05	N/M	N/A	N/A	2.05	61.47	N/M			
											11-Jul-2018	3.76	2.86	N/M	N/A	N/A	2.86	60.66	N/M			
											15-Jul-2019	3.88	2.98	N/M	N/A	N/A	2.98	60.54	0.98			
B30-13-4-3.9	**W-CAT-1**	599282.599	7242116.513	62.97	63.90	0.93	3.9	59.07	2.25 - 3.75	1.95 - 3.90	04-Aug-2016	4.80	3.87	N/M	N/A	N/A	3.87	59.10	N/M	N/M	Sandy clay	Insufficient water to sample
											18-Aug-2017	1.59	0.66	N/M	N/A	N/A	0.66	62.31	N/M			
											11-Jul-2018	4.84	3.91	N/M	N/A	N/A	3.91	59.06	N/M			
											15-Jul-2019	4.80	3.87	N/M	N/A	N/A	3.87	59.10	0.88		Insufficient water to sample
B30-17-1-5	**W-CAT-1**	N/M	N/M	N/M	N/M	1.03	4.6	N/A	3.10 - 4.60	2.70 - 4.60	14-Oct-2017	2.99	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Silt	
											11-Jul-2018	3.80	N/A	N/M	N/A	N/A	N/A	N/A	N/M			
											13-Jul-2019	4.01	3.01[¥]	N/M	N/A	N/A	3.01[¥]	N/A	1.00		
B30-17-2-3	**W-CAT-1**	N/M	N/M	N/M	N/M	-0.09	2.4	N/A	0.90 - 2.40	0.60 - 3.00	12-Jul-2018	0.55	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Sandy silt/Silt	
											15-Jul-2019	0.43	0.40[¥]	N/M	N/A	N/A	0.40[¥]	N/A	0.03		Possibly silting up
Mainland Central - B-30X Well Site - Bedrock																						
B30-19-01-5	**W-CAT-3**	599412.326	7242214.688	61.08	61.08	0.00	5.50	55.58	4.00 - 5.50	3.50 - 5.50	02-Sep-2019	1.82	1.82	N/M	N/A	N/A	1.82	59.26	N/M	N/M	Siltstone	Sheen observed

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Table 2

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
Mainland Central - C-30X Well Site / Bosworth Creek and Delta - Surficial Sediment																						
C30-10-1-5	**W-CAT-3**	N/M	N/M	61.10	61.88	0.79	4.50	56.60	1.50 - 4.50	1.20 - 4.50	12-Aug-2017	4.05	3.26	N/M	N/A	N/A	3.26	57.83	N/M	3.63E-07	Clayey Silt	
											12-Jul-2018	3.78	2.99	N/M	N/A	N/A	2.99	58.10	N/M			
											13-Jul-2019	3.47	2.68	N/M	N/A	N/A	2.68	58.41	0.77			
BOS-DP-13-1-1.4	**W-CAT-3**	599584.495	7241734.263	46.27	47.47	1.20	2.00	44.27	0.50 - 2.00	0.50 - 2.00	11-Aug-2016	1.20	0.00	N/M	N/A	N/A	0.00	46.27	N/M	1.40E-05	Clay	
											18-Aug-2017	N/M	N/M	N/M	N/A	N/A	N/A	N/A	N/M			Well underwater in Bosworth creek
											21-Jul-2018	N/M	N/M	N/M	N/A	N/A	N/A	N/A	N/M			Could not access
											13-Jul-2019	1.24	0.04	N/M	N/A	N/A	0.04	46.23	N/M			
BOS-DP-13-2-1.35	**W-CAT-3**	N/M	N/M	NM	47.03	N/A	1.60	44.58	1.00 - 1.60	1.00 - 1.60	06-Aug-2016	1.16	N/A	N/M	N/A	N/A	N/A	45.87	N/M	N/M	Gravel	No lid on arrival. Add Jplug/lock
											18-Aug-2017	1.24	N/A	N/M	N/A	N/A	N/A	45.79	N/M			
											21-Jul-2018	N/M	N/M	N/M	N/A	N/A	N/A	N/A	N/M			Could not access
											13-Jul-2019	1.68	N/A	N/M	N/A	N/A	N/A	45.79	N/M			Limited water, no sample
BOS-DP-13-3-2	**W-CAT-3**	N/M	N/M	NM	47.24	N/A	2.00	44.18	0.50 - 2.00	0.50 - 2.00	06-Aug-2016	1.50	N/A	N/M	N/A	N/A	N/A	45.74	N/M	N/M	Clay	Added lock in new Jplug. Lid not on when arrived. Pinched at ground surface
											18-Aug-2017	1.66	N/A	N/M	N/A	N/A	N/A	45.58	N/M			Kinked
											21-Jul-2018	1.79	0.37[¥]	N/M	N/A	N/A	0.37[¥]	45.45	1.42			Well pinched at 2mbgs
											13-Jul-2019	2.03	0.54[¥]	N/M	N/A	N/A	0.54[¥]	45.21	1.49			Well partially blocked
BOS-DP-13-4-3	**W-CAT-3**	N/M	N/M	NM	47.33	N/A	2.00	43.99	0.50 - 2.00	0.50 - 2.00	06-Aug-2016	1.45	N/A	N/M	N/A	N/A	N/A	45.88	N/M	N/M	Clay	Added lock. Limited sample.
											18-Aug-2017	1.67	N/A	N/M	N/A	N/A	N/A	45.66	N/M			Kinked
											21-Jul-2018	1.75	0.51[¥]	N/M	N/A	N/A	0.51[¥]	45.58	1.24			Well pinched at 2mbgs
											13-Jul-2019	1.77	0.59[¥]	N/M	N/A	N/A	0.59[¥]	45.56	1.18			Well partially blocked
Mainland Central - Former Battery #3 - Surficial Sediment																						
BT3 02-34-4	**W-CAT-3**	599856.103	7241542.276	58.95	59.65	0.70	4.45	54.50	1.45 - 4.30	1.00 - 6.10	13-Aug-2017	2.97	2.27	N/M	N/A	N/A	2.27	56.68	N/M	8.70E-07	Sand and shale	Frost jacked, well kinked
											17-Jul-2018	2.60	1.90	N/M	N/A	N/A	1.90	57.05	1.83			Casing frost jacked
											14-Jul-2019	2.80	2.10	N/M	N/A	N/A	2.10	56.85	1.85			Frost jacked
BT3 02-36-4	**W-CAT-3**	599845.996	7241509.336	58.94	59.64	0.70	3.90	55.04	0.90 - 3.90	0.50 - 5.00	17-Jul-2018	2.36	1.66	N/M	N/A	N/A	1.66	57.28	0.84	3.10E-07	Sand	
											14-Jul-2019	2.49	1.79	N/M	N/A	N/A	1.79	57.15	0.82			
BT3-18-1-5.5	**W-CAT-3**	N/M	N/M	N/M	N/M	0.92	5.5	N/A	4.00 - 5.50	3.70 - 5.50	12-Jul-2018	6.08	N/A	N/M	N/A	N/A	N/A	N/A	N/M			
											14-Jul-2019	6.37	5.47[¥]	N/M	N/A	N/A	5.47[¥]	N/A	0.90	N/M	Clayey silt	
Mainland Central - Former Battery #3 - Bedrock																						
BT3 02-32-6	**W-CAT-3**	599747.164	7241624.252	56.39	57.09	0.70	5.90	N/A	2.90 - 5.90	2.70 - 6.00	05-Aug-2016	5.32	4.62	N/M	N/A	N/A	4.62	51.77	N/M	4.40E-07	Silt	
											13-Aug-2017	5.69	4.99	N/M	N/A	N/A	4.99	51.40	N/M			
											12-Jul-2018	5.69	4.99	N/M	N/A	N/A	4.99	51.40	N/M			
											13-Jul-2019	5.87	5.17	N/M	N/A	N/A	5.17	51.22	N/M			Limited sample
BT3 97-11-11	**W-CAT-3**	599721.600	7241502.300	57.13	58.19	1.06	11.21	45.91	N/A	8.31 - 10.91	05-Aug-2016	10.10	9.04	N/M	N/A	N/A	9.04	48.09	N/M	9.30E-10	Siltstone	
											13-Aug-2017	10.08	9.02	N/M	N/A	N/A	9.02	48.11	N/M			
											17-Jul-2018	10.13	9.07	N/M	N/A	N/A	9.07	48.06	0.88			
											14-Jul-2019	10.16	9.10	N/M	N/A	N/A	9.10	48.03	0.90			
BT3 98-7-7	**W-CAT-3**	599710.216	7241467.112	52.29	52.77	0.48	6.75	N/A	3.75 - 6.75	2.90 - 6.75	17-Jul-2018	6.77	6.29	N/M	N/A	N/A	6.29	46.00	0.48	2.30E-06	Siltstone	
											14-Jul-2019	6.52	6.04	N/M	N/A	N/A	6.04	46.25	0.48			
BT3 99-20-13	**W-CAT-3**	599714.629	7241605.876	55.82	56.42	0.60	12.50	43.23	9.40 - 12.40	9.30 - 13.10	05-Aug-2016	10.53	9.93	N/M	N/A	N/A	9.93	45.89	N/M	>1.0E-05	Siltstone	Replaced waterra and well cap
											13-Aug-2017	10.45	9.85	N/M	N/A	N/A	9.85	45.97	N/M			
											12-Jul-2018	10.70	10.10	N/M	N/A	N/A	10.10	45.72	N/M			
											13-Jul-2019	10.57	9.97	N/M	N/A	N/A	9.97	45.85	N/M			
BT3 99-23-13	**W-CAT-3**	599683.523	7241696.591	57.07	57.63	0.57	13.40	43.58	7.50 - 13.40	6.40 - 13.40	05-Aug-2016	10.79	10.23	N/M	N/A	N/A	10.23	46.84	N/M	1.30E-06	Shale	
											13-Aug-2017	10.77	10.21	N/M	N/A	N/A	10.21	46.86	N/M			
											12-Jul-2018	11.13	10.57	N/M	N/A	N/A	10.57	46.50	N/M			
											13-Jul-2019	11.01	10.45	N/M	N/A	N/A	10.45	46.62	N/M			
Mainland Central - F-31X Well Site - Surficial Sediment																						
F31 97-3-5	**W-CAT-1**	N/M	N/M	52.92	53.77	0.84	4.60	48.26	1.50 - 4.60	1.10 - 4.60	06-Aug-2016	4.29	3.45	N/M	N/A	N/A	3.45	49.48	N/M	3.56E-07	Silt	
											17-Aug-2017	> 5.70	> 4.86	N/M	N/A	N/A	> 4.86	< 48.07	N/M			Dry
											16-Jul-2018	5.48	4.64	N/M	N/A	N/A	4.64	48.29	0.92			
											18-Jul-2019	5.67	4.83	N/M	N/A	N/A	4.83	48.10	0.99			Dry, insufficient water for sampling
F31 98-1-4	**W-CAT-1**	N/M	N/M	52.87	53.69	0.82	4.00	48.84	1.00 - 4.00	0.80 - 4.00	06-Aug-2016	4.28	3.46	N/M	N/A	N/A	3.46	49.41	N/M	1.90E-06	Silt	
											17-Aug-2017	4.76	3.94	N/M	N/A	N/A	3.94	48.93	N/M			
											16-Jul-2018	4.83	4.01	N/M	N/A	N/A	4.01	48.86	0.91			Dry, insufficient water for sampling
											18-Jul-2019	4.83	4.01	N/M	N/A	N/A	4.01	48.86	N/M			Dry, insufficient water for sampling

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Table 2

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
Mainland Central - G-32X Well Site - Surficial Sediment																						
G32-10-1-3	**W-CAT-1**	599316.728	7241454.864	49.66	50.42	0.76	2.88	46.78	1.31 - 2.88	1.21 - 2.88	06-Aug-2016	2.31	1.55	N/M	N/A	N/A	1.55	48.11	N/M	N/M	Clayey Silt	
											17-Aug-2017	2.86	2.10	N/M	N/A	N/A	2.10	47.56	N/M			Frost jacked
											16-Jul-2018	> 3.80	> 3.04	N/M	N/A	N/A	> 3.04	< 46.62	1.20			Dry, stick up frost jacked, unable to lock
											11-Jul-2019	> 2.67	> 1.91	N/M	N/A	N/A	> 1.91	< 47.75	N/M			Dry
Mainland Central - E-33X Well Site - Surficial Sediment																						
E33-18-1-2.5	**W-CAT-3**	N/M	N/M	N/M	N/M	0.15	2.40	N/A	1.7 - 2.4	1.6 - 2.4	22-Jul-2018	1.90	1.75[v]	N/M	N/A	N/A	1.75[v]	N/A	0.15	N/M	Gravelly sand	Sheen, hydrocarbon odour, black
											11-Jul-2019	1.95	1.80[v]	N/M	N/A	N/A	1.80[v]	N/A	N/M			Sheen observed
E33-19-01-4	**W-CAT-3**	599281.048	7241568.447	43.14	0.20	4.50	38.44	38.44	3.00 - 4.50	2.70 - 4.50	02-Sep-2019	2.33	2.13	N/M	N/A	N/A	2.13	40.81	N/M	N/M	Siltstone	Sheen observed
E33-19-02-5	**W-CAT-3**	599395.943	7241588.907	44.39	0.25	6.00	38.14	38.14	4.50 - 6.00	4.20 - 6.00	02-Sep-2019	5.54	5.29	N/M	N/A	N/A	5.29	38.85	N/M	N/M	Siltstone	Sheen observed
Mainland East - Former Fuel Tanks and Potential Campsite Biocell - Surficial Sediment																						
CAB 09-3-3	**W-CAT-1**	600112.261	7241900.244	64.86	65.65	0.79	3.25	61.61	N/A	1.15 - 2.65	05-Aug-2016	1.74	0.95	N/M	N/A	N/A	0.95	63.91	N/M	1.20E-05	Sandy silt/silty clay	
											12-Aug-2017	1.92	1.13	N/M	N/A	N/A	1.13	63.73	N/M			
											12-Jul-2018	1.88	1.09	N/M	N/A	N/A	1.09	63.77	1.35			Casing frost jacked, loose
											15-Jul-2019	1.40	0.61	N/M	N/A	N/A	0.61	64.25	2.67			Clear
FT-10-1-3	**W-CAT-1**	599970.305	7241995.871	65.45	66.17	0.72	2.50	62.95	1.00 - 2.50	0.80 - 2.70	05-Aug-2016	2.31	1.59	N/M	N/A	N/A	1.59	63.86	N/M	1.68E-06	Silty Gravel / Clayey Silt / Sandy Silt	
											12-Aug-2017	2.33	1.61	N/M	N/A	N/A	1.61	63.84	N/M			
											12-Jul-2018	2.24	1.52	N/M	N/A	N/A	1.52	63.93	0.61			Lock replaced
											15-Jul-2019	2.25	1.53	N/M	N/A	N/A	1.53	63.92	0.71			
Mainland East - C-36X Well Site - Surficial Sediment																						
C36-10-1-3	**W-CAT-1**	600050.878	7241582.428	59.94	60.72	0.78	3.00	56.94	1.50 - 3.00	1.20 - 3.00	05-Aug-2016	1.26	0.48	N/M	N/A	N/A	0.48	59.46	N/M	N/M	Clayey Silt	
											12-Aug-2017	1.34	0.56	N/M	N/A	N/A	0.56	59.38	N/M			
											12-Jul-2018	1.23	0.45	N/M	N/A	N/A	0.45	59.49	0.82			
											15-Jul-2019	1.13	0.35	N/M	N/A	N/A	0.35	59.59	0.95			
C36-10-2-3	**W-CAT-1**	600087.537	7241637.626	62.65	63.45	0.80	3.00	59.65	1.50 - 3.00	1.20 - 3.00	05-Aug-2016	2.24	1.44	N/M	N/A	N/A	1.44	61.21	N/M	N/M	Clayey Silt	
											12-Aug-2017	2.95	2.15	N/M	N/A	N/A	2.15	60.50	N/M			
											12-Jul-2018	2.13	1.33	N/M	N/A	N/A	1.33	61.32	0.88			
											15-Jul-2019	2.08	1.28	N/M	N/A	N/A	1.28	61.37	0.98			
C36-10-3-3	**W-CAT-1**	600048.351	7241644.648	61.55	62.32	0.76	3.00	58.55	1.50 - 3.00	1.20 - 3.00	05-Aug-2016	1.80	1.04	N/M	N/A	N/A	1.04	60.52	N/M	1.16E-06	Clayey Silt	
											12-Aug-2017	2.38	1.62	N/M	N/A	N/A	1.62	59.94	N/M			
											12-Jul-2018	1.85	1.09	N/M	N/A	N/A	1.09	60.47	0.92			
											15-Jul-2019	1.43	0.67	N/M	N/A	N/A	0.67	60.89	0.99			
Mainland East - B-38X Well Site - Surficial Sediment																						
B38 03-38-5	**W-CAT-1**	600505.002	7241460.656	58.37	58.97	0.60	4.60	N/A	1.40 - 4.60	1.40 - 4.60	04-Aug-2016	1.42	0.82	N/M	N/A	N/A	0.82	57.55	N/M	4.10E-06	Silty and sandy clay	Frost jacked. Hydrocabron odour. Clear
											13-Aug-2017	1.34	0.74	N/M	N/A	N/A	0.74	57.63	N/M			
											16-Jul-2018	0.990	0.312	0.893	0.097	0.078	0.312	58.058	1.21			NAPL, purged 5 litres
											18-Jul-2019	1.42	0.82	N/M	N/A	N/A	0.82	57.55	1.51			Hydrocarbon odour
B38 08-2-4	**W-CAT-1**	600296.350	7241580.328	63.59	64.31	0.72	3.60	59.99	2.10 - 3.60	1.80 - 3.60	07-Jun-2016	> 4.32	> 3.60	N/M	N/A	N/A	> 3.60	< 59.99	N/M	2.00E-07	Clayey sandy silt	Dry
											03-Aug-2016	2.75	2.03	N/M	N/A	N/A	2.03	61.56	N/M			Hydrocarbon odour. Clear
											13-Aug-2017	> 4.41	> 3.69	N/M	N/A	N/A	> 3.69	< 59.90	N/M			Dry
											16-Jul-2018	> 4.45	> 3.73	N/M	N/A	N/A	> 3.73	< 59.86	0.62			Dry
											13-Jul-2019	> 4.46	> 3.74	N/M	N/A	N/A	> 3.74	< 59.85	N/M			Dry
B38-10-1-5	**W-CAT-5**	600188.275	7241625.351	63.27	64.06	0.79	4.50	58.77	1.50 - 4.50	1.20 - 4.50	04-Aug-2016	1.68	0.89	N/M	N/A	N/A	0.89	62.38	N/M	2.10E-06	Clayey Silt	Dry, Frost jack ~ 15cm
											18-Aug-2017	1.88	1.09	N/M	N/A	N/A	1.09	62.18	N/M			
											12-Jul-2018	1.59	0.80	N/M	N/A	N/A	0.80	62.47	N/M			
											13-Jul-2019	1.37	0.58	N/M	N/A	N/A	0.58	62.69	N/M			
B38-10-2-5	**W-CAT-5**	600147.215	7241631.909	63.18	63.92	0.74	4.70	58.48	1.70 - 4.70	1.50 - 4.70	04-Aug-2016	1.98	1.24	N/M	N/A	N/A	1.24	61.94	N/M	1.70E-06	Clayey Silt	Sand above top of casing fell into the well when opened
											18-Aug-2017	2.25	1.51	N/M	N/A	N/A	1.51	61.67	N/M			
											12-Jul-2018	1.67	0.93	N/M	N/A	N/A	0.93	62.25	N/M			
											13-Jul-2019	1.48	0.74	N/M	N/A	N/A	0.74	62.44	N/M			
B38-16-1-3	**W-CAT-5**	N/M	N/M	N/M	N/M	1.00	3.20	N/A	1.60 - 3.20	1.20 - 3.20	12-Aug-2017	1.50	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M		
											13-Jul-2018	1.22	0.28[v]	N/M	N/A	N/A	0.28[v]	N/A	0.94			
											13-Jul-2019	1.25	0.25[v]	N/M	N/A	N/A	0.25[v]	N/A	1.00			
B38-16-2-4	**W-CAT-5**	N/M	N/M	N/M	N/M	0.80	3.80	N/A	2.10 - 3.80	1.80 - 4.00	12-Aug-2017	4.497	N/A	1.467	3.030	2.424	N/A	N/A	N/M	N/M		
											13-Jul-2018	1.160	N/A	1.080	0.080	0.064	N/A	N/A	N/M			NAPL no sample
											13-Jul-2019	1.233	0.097[v]	1.150	0.083	0.066	0.097[v]	N/A	1.07			NAPL no sample

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Table 2

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
Mainland East - Fire Training Area - Surficial Sediment																						
FTA 98-4-5	**W-CAT-1**	600478.469	7241655.771	63.30	63.84	0.54	4.60	58.51	1.46 - 4.46	1.00 - 4.60	04-Aug-2016	2.644	1.841	2.315	0.329	0.263	1.841	61.454	N/M	>1.1E-06	Silt and sand	Brown NAPL, hydrocarbon odour
											16-Aug-2016	2.41	1.87	N/M	N/A	N/A	1.87	61.43	N/M			
											13-Aug-2017	2.56	2.02	N/M	N/A	N/A	2.02	61.28	N/M			
											16-Jul-2018	2.20	1.66	N/M	N/A	N/A	1.66	61.64	0.66			
											15-Jul-2019	2.12	1.58	N/M	N/A	N/A	1.58	61.72	0.60			
FTA 99-2-4	**W-CAT-1**	600439.638	7241661.403	63.86	64.52	0.66	4.40	N/A	1.40 - 4.40	1.00 - 4.40	04-Aug-2016	2.00	1.34	N/M	N/A	N/A	1.34	62.52	N/M	7.10E-07	Silt and sand	Hydrocarbon odour / sheen observed
											13-Aug-2017	3.108	2.446	3.105	0.003	0.002	2.446	61.414	N/M			
											16-Jul-2018	2.79	2.13	N/M	N/A	N/A	2.13	61.73	0.88			
											15-Jul-2019	2.84	2.18	N/M	N/A	N/A	2.18	61.68	0.87			
FTA 99-3-4	**W-CAT-1**	600501.251	7241674.947	64.15	64.79	0.64	4.10	60.04	1.10 - 4.10	0.90 - 4.10	04-Aug-2016	2.73	2.09	N/M	N/A	N/A	2.09	62.06	N/M	1.80E-06	Peat, silt and sand	
											10-Sep-2016	3.02	2.38	N/M	N/A	N/A	2.38	61.77	N/M			
											17-Aug-2017	2.96	2.32	N/M	N/A	N/A	2.32	61.83	N/M			
											16-Jul-2018	2.65	2.01	N/M	N/A	N/A	2.01	62.14	N/M			
											18-Jun-2019	2.20	1.56	N/M	N/A	N/A	1.56	62.59	N/M			
Mainland East - Reduced Crude Flare Pit - Surficial Sediment																						
RCF 03-1-5	**W-CAT-1**	600644.136	7241821.599	63.79	64.49	0.70	4.60	59.19	N/A	1.00 - 4.60	03-Aug-2016	1.78	1.08	N/M	N/A	N/A	1.08	62.71	N/M	2.2e-006	Silt and peat	
											21-Aug-2017	2.20	1.50	N/M	N/A	N/A	1.50	62.29	N/M			
											21-Jul-2018	1.87	1.17	N/M	N/A	N/A	1.17	62.62	1.30			
											12-Jul-2019	1.87	1.17	N/M	N/A	N/A	1.17	62.62	1.36			
RCF 98-3-4	**W-CAT-1**	600653.339	7241795.122	64.18	65.03	0.85	4.30	59.70	1.30 - 4.30	1.00 - 4.30	03-Aug-2016	2.41	1.56	N/M	N/A	N/A	1.56	62.62	N/M	2.6e-006	Silt/sand/peat	
											21-Aug-2017	2.88	2.03	N/M	N/A	N/A	2.03	62.15	N/M			
											21-Jul-2018	2.56	1.71	N/M	N/A	N/A	1.71	62.47	1.41			
											12-Jul-2019	2.48	1.63	N/M	N/A	N/A	1.63	62.55	1.52		Frost jacked - casing out of ground
Mainland East - Mainland Tank Farm - Surficial Sediment																						
MTF 98-4-5	**W-CAT-1**	600600.070	7241469.950	59.14	59.84	0.70	5.10	53.92	2.10 - 5.10	1.40 - 5.10	06-Aug-2016	1.51	0.81	N/M	N/A	N/A	0.81	58.33	N/M	1.10E-06	Sandy silt	
											17-Aug-2017	1.70	1.00	N/M	N/A	N/A	1.00	58.14	N/M			
											16-Jul-2018	1.65	0.95	N/M	N/A	N/A	0.95	58.19	1.30			
											18-Jun-2019	1.78	1.08	N/M	N/A	N/A	1.08	58.06	N/M			
MTF 98-5-4	**W-CAT-1**	600579.020	7241492.700	59.35	60.10	0.75	2.80	56.33	1.30 - 2.80	1.90 - 4.00	06-Aug-2016	0.51	-0.24	N/M	N/A	N/A	-0.24	59.59	N/M	3.10E-06	Silt, sandy silt	
											17-Aug-2017	0.53	-0.22	N/M	N/A	N/A	-0.22	59.57	N/M			Silt in well
											16-Jul-2018	0.66	-0.09	N/M	N/A	N/A	-0.09	59.44	0.55			
											18-Jun-2019	0.75	0.00	N/M	N/A	N/A	0.00	59.35	N/M			
TF 02-10-5	**W-CAT-1**	600538.459	7241497.380	59.19	59.89	0.70	4.40	54.79	1.40 - 4.40	1.10 - 4.50	06-Aug-2016	1.74	1.04	N/M	N/A	N/A	1.04	58.15	N/M	N/M	Sandy silt	Limited sample
											17-Aug-2017	1.65	0.95	N/M	N/A	N/A	0.95	58.24	N/M			Compromised, sand / bentonite on tape
											16-Jul-2018	1.56	0.86	N/M	N/A	N/A	0.86	58.33	1.24			
											18-Jun-2019	2.36	1.66	N/M	N/A	N/A	1.66	57.53	N/M			
TF 02-7-3	**W-CAT-1**	600524.949	7241585.869	62.36	62.96	0.60	3.30	59.06	1.20 - 3.30	1.00 - 3.50	17-Aug-2017	2.42	1.82	N/M	N/A	N/A	1.82	60.54	N/M	N/M	Sand and silt	
											16-Jul-2018	2.41	1.81	N/M	N/A	N/A	1.81	60.55	1.42			Casing protector frost jacketed / sticking out if the ground
											18-Jun-2019	2.69	2.09	N/M	N/A	N/A	2.09	60.27	N/M			
TF 02-9-3	**W-CAT-1**	600511.359	7241522.270	60.47	61.27	0.80	2.90	57.57	0.90 - 2.90	0.80 - 4.00	17-Aug-2017	1.12	0.32	N/M	N/A	N/A	0.32	60.15	N/M	1.60E-05	Silt and gravel	
											16-Jul-2018	1.25	0.45	N/M	N/A	N/A	0.45	60.02	1.12			
											18-Jun-2019	1.27	0.47	N/M	N/A	N/A	0.47	60.00	N/M			
TF 03-11-4	**W-CAT-1**	600532.221	7241471.152	57.89	58.59	0.70	4.30	53.59	1.30 - 4.30	1.20 - 4.50	06-Aug-2016	0.69	-0.01	N/M	N/A	N/A	-0.01	57.90	N/M	3.90E-06	Silty clay	
											17-Aug-2017	0.66	-0.04	N/M	N/A	N/A	-0.04	57.93	N/M			
											16-Jul-2018	0.76	0.06	N/M	N/A	N/A	0.06	57.83	0.73			
											18-Jun-2019	0.81	0.11	N/M	N/A	N/A	0.11	57.78	N/M			
Mainland East - B-42X Well Site - Surficial Sediment																						
B42-17-1-5	**W-CAT-1**	N/M	N/M	N/M	N/M	1.02	5.00	N/A	3.50 - 5.00	3.00 - 5.00	14-Oct-2017	1.88	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Sandy silt	
											20-Jul-2018	1.84	0.92[¥]	N/M	N/A	N/A	0.92[¥]	N/A	0.92			
											15-Jul-2019	1.78	0.86[¥]	N/M	N/A	N/A	0.86[¥]	N/A	0.92			
B42-17-2-4	**W-CAT-1**	N/M	N/M	N/M	N/M	1.06	4.90	N/A	2.70 - 4.30	2.40 - 4.90	14-Oct-2017	1.57	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Gravel	
											20-Jul-2018	1.61	0.55[¥]	N/M	N/A	N/A	0.55[¥]	N/A	1.06			
											14-Jul-2019	1.57	0.42[¥]	N/M	N/A	N/A	0.42[¥]	N/A	1.15			
B42-17-3-4	**W-CAT-1**	N/M	N/M	N/M	N/M	0.81	4.50	N/A	2.80 - 4.30	2.10 - 4.50	14-Oct-2017	1.82	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Clayey silt	
											20-Jul-2018	1.89	1.13[¥]	N/M	N/A	N/A	1.13[¥]	N/A	0.76			
											14-Jul-2019	2.24	1.42[¥]	N/M	N/A	N/A	1.42[¥]	N/A	0.82			Frozen

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Refinery Bank Remediation System - Surficial Sediments																						
NWR 93-10-6	**W-CAT-4**	600534.550	7241258.461	54.82	55.92	1.10	6.32	48.23	N/A	N/A	12-Mar-2016	> 7.42	> 6.32	N/A	N/A	N/A	> 6.32	< 48.50	N/M	N/M		Dry
											13-Aug-2016	6.89	5.79	N/A	N/A	N/A	5.79	49.03	N/M			
											22-Jun-2019	5.23	4.13	N/A	N/A	N/A	4.13	50.69	N/M			
											22-Jul-2019	7.11	6.01	N/A	N/A	N/A	6.01	48.81	N/M			
											24-Aug-2019	5.65	4.55	N/A	N/A	N/A	4.55	50.27	N/M			
											02-Oct-2019	6.94	5.84	N/A	N/A	N/A	5.84	48.98	N/M			
NWR 01-29-7	**W-CAT-4**	600447.160	7241260.610	48.90	49.62	0.72	7.30	41.59	4.40 - 7.40	4.10 - 7.40	12-Mar-2016	8.900	8.180	8.870	0.030	0.024	8.156	40.740	N/M	N/M	Silt/sand/mud/shale	Passive skimmer bailer in well
											08-Jun-2016	6.63	5.91	N/A	N/A	N/A	5.91	42.99	N/M			Passive skimmer bailer in well
											13-Aug-2016	8.375	7.655	8.370	0.005	0.004	7.651	41.245	N/M			Vapour extraction at this well
											14-Mar-2017	8.874	8.154	8.845	0.029	0.023	8.131	40.765	N/M			Medium brown product on probe.
											11-Apr-2017	9.070	8.350	8.920	0.150	0.120	8.230	40.666	N/M			
											15-Jun-2017	6.800	6.080	6.650	0.150	0.120	5.960	42.936	N/M			
											15-Jul-2017	7.130	6.410	7.100	0.030	0.024	6.386	42.510	N/M			
											19-Aug-2017	7.480	6.760	7.470	0.010	0.008	6.752	42.144	N/M			
											15-Sep-2017	7.245	6.525	7.205	0.040	0.032	6.493	42.403	N/M			
											14-Oct-2017	7.223	6.503	7.212	0.011	0.009	6.494	42.402	N/M			Dark brown free phase.
											21-Nov-2017	7.566	6.846	7.563	0.003	0.002	6.844	42.052	N/M			
											19-Dec-2017	7.855	7.135	7.840	0.015	0.012	7.123	41.773	N/M			
											17-Jan-2018	7.890	7.170	7.870	0.020	0.016	7.154	41.742	N/M			
											13-Feb-2018	8.350	7.630	8.340	0.010	0.008	7.622	41.274	N/M			
											20-Mar-2018	8.645	7.925	8.610	0.035	0.028	7.897	40.999	N/M			
											07-Apr-2018	8.720	8.000	8.670	0.050	0.040	7.960	40.936	N/M			Dark brown free phase
											01-May-2018	8.714	7.994	8.666	0.048	0.038	7.956	40.940	N/M			Medium brown free phase
											24-Jun-2018	7.160	6.440	7.150	0.010	0.008	6.432	42.464	N/M			Dark brown free phase
											17-Jul-2018	7.058	6.338	7.052	0.006	0.005	6.333	42.563	N/M			
											12-Aug-2018	7.300	6.580	7.270	0.030	0.024	6.556	42.340	N/M			
											17-Sep-2018	6.965	6.245	6.962	0.003	0.002	6.243	42.653	N/M			
											16-Oct-2018	7.230	6.510	7.180	0.050	0.040	6.470	42.426	N/M			
											27-Apr-2019	8.580	7.860	8.500	0.080	0.064	7.796	41.100	N/M			
											22-Jun-2019	7.140	6.420	7.100	0.040	0.032	6.388	42.508	N/M			FB-Light gold
											22-Jul-2019	7.665	6.945	7.625	0.040	0.032	6.913	41.983	N/M			
											24-Aug-2019	8.251	7.531	8.208	0.043	0.034	7.497	41.399	N/M			
											02-Oct-2019	8.074	7.354	8.027	0.047	0.038	7.316	41.580	N/M			
											10-Dec-2019	10.455	9.735	10.372	0.083	0.066	9.669	39.227	N/M			
NWR 02-12-7	**W-CAT-4**	600535.584	7241293.190	56.11	56.81	0.70	7.00	49.11	4.00 - 7.00	3.80 - 7.60	12-Mar-2016	> 7.67	> 6.97	N/A	N/A	N/A	> 6.97	< 49.14	N/M	6.7e-007	Sand/gravel	Dry
											05-Aug-2016	4.31	3.61	N/A	N/A	N/A	3.61	52.50	N/M			No sample
											13-Aug-2016	7.56	6.86	N/A	N/A	N/A	6.86	49.25	N/M			
											13-Aug-2017	7.41	6.71	N/A	N/A	N/A	6.71	49.40	N/M			
											20-Jul-2018	7.52	6.82	N/A	N/A	N/A	6.82	49.29	0.68			ltd sample, no fp
											22-Jun-2019	7.55	6.85	N/A	N/A	N/A	6.85	49.26	N/M			
											15-Jul-2019	7.49	6.79	N/A	N/A	N/A	6.79	49.32	0.65			limited sample
											22-Jul-2019	7.50	6.80	N/A	N/A	N/A	6.80	49.31	N/M			
											24-Aug-2019	7.46	6.76	N/A	N/A	N/A	6.76	49.35	N/M			
											02-Oct-2019	7.50	6.80	N/A	N/A	N/A	6.80	49.31	N/M			
RB-OBS-40	**W-CAT-4**	600495.475	7241211.570	44.96	45.11	0.15	2.50	42.46	1.00 - 2.50	0.70 - 2.50	13-Aug-2016	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M	N/M	Sandy Silt	Well destroyed
RB-OBS-41	**W-CAT-4**	600436.298	7241228.291	45.55	45.71	0.15	3.10	42.45	1.60 - 3.10	1.20 - 3.10	13-Mar-2016	> 3.02	> 2.87	N/A	N/A	N/A	> 2.87	< 42.69	N/M	N/M	Silty Clay/Silty Sand/Sand	Dry, PVC casing protector broken
											08-Jun-2016	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Well blocked
											13-Aug-2016	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Well destroyed
RB-OBS-42	**W-CAT-4**	600441.510	7241241.752	46.84	47.03	0.19	3.00	43.84	1.50 - 3.00	1.10 - 3.00	13-Mar-2016	> 3.27	> 3.09	N/A	N/A	N/A	> 3.09	< 43.76	N/M	N/M	Sandy Silt	Dry
											08-Jun-2016	2.27	2.09	N/A	N/A	N/A	2.09	44.76	N/M			
											13-Aug-2016	3.08	2.90	N/A	N/A	N/A	2.90	43.95	N/M			
											14-Mar-2017	> 3.19	> 3.00	N/A	N/A	N/A	> 3.00	< 43.84	N/M			Dry/Frozen at 3.26 mbtoc.
											11-Apr-2017	> 3.19	> 3.00	N/A	N/A	N/A	> 3.00	< 43.84	N/M			Dry at 3.29
											22-Jun-2019	2.97	2.79	N/A	N/A	N/A	2.79	44.06	N/M			
											22-Jul-2019	2.90	2.72	N/A	N/A	N/A	2.72	44.13	N/M			
											24-Aug-2019	3.12	2.94	N/A	N/A	N/A	2.94	43.91	N/M			
											02-Oct-2019	> 3.19	> 3.00	N/A	N/A	N/A	> 3.00	< 43.84	N/M			Dry at 3.21
RB-OBS-44	**W-CAT-4**	600510.233	7241232.608	48.17	48.32	0.15	4.00	44.17	2.50 - 4.00	2.10 - 4.00	13-Mar-2016	4.16	4.01	N/A	N/A	N/A	4.01	44.16	N/M	N/M	Silty Sand/Weathered Siltstone	Can't lock
											08-Jun-2016	3.09	2.94	N/A	N/A	N/A	2.94	45.23	N/M			
											13-Aug-2016	4.04	3.89	N/A	N/A	N/A	3.89	44.28	N/M			
											22-Jun-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Destroyed. Reminants of BH/bentonite
											22-Jul-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Destroyed.
											24-Aug-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Destroyed.
											02-Oct-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Destroyed.

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
RB-OBS-45	W-CAT-4	600496.480	7241232.103	47.41	47.58	0.16	3.80	43.61	2.30 - 3.80	1.90 - 3.80	13-Mar-2016	3.83	3.67	N/A	N/A	N/A	3.67	43.75	N/M	N/M	Silty Sand	
											08-Jun-2016	2.21	2.05	N/A	N/A	N/A	2.05	45.37	N/M			
											13-Aug-2016	3.18	3.02	N/A	N/A	N/A	3.02	44.40	N/M			
											02-Nov-2016	3.70	3.54	N/A	N/A	N/A	3.54	43.88	N/M			
											22-Jun-2019	2.75	2.59	N/A	N/A	N/A	2.59	44.83	N/M			
											22-Jul-2019	3.18	3.02	N/A	N/A	N/A	3.02	44.40	N/M			
											24-Aug-2019	3.37	3.21	N/A	N/A	N/A	3.21	44.21	N/M			
											02-Oct-2019	3.45	3.29	N/A	N/A	N/A	3.29	44.13	N/M			
RB-OBS-46	W-CAT-4	600481.874	7241233.855	47.81	47.93	0.12	4.30	43.51	2.80 - 4.30	2.40 - 4.30	13-Mar-2016	4.12	4.00	N/A	N/A	N/A	4.00	43.81	N/M	N/M	Sandy Clay/Silty Sand	
											08-Jun-2016	2.39	2.27	N/A	N/A	N/A	2.27	45.54	N/M			
											13-Aug-2016	3.86	3.74	N/A	N/A	N/A	3.74	44.07	N/M			
											14-Mar-2017	4.25	4.13	N/A	N/A	N/A	4.13	43.68	N/M		Light brown sheen on probe
											11-Apr-2017	4.29	4.17	N/A	N/A	N/A	4.17	43.64	N/M		
											15-Jun-2017	2.46	2.34	N/A	N/A	N/A	2.34	45.47	N/M		
											15-Jul-2017	3.30	3.18	N/A	N/A	N/A	3.18	44.63	N/M		
											19-Aug-2017	3.77	3.65	N/A	N/A	N/A	3.65	44.16	N/M		
											15-Sep-2017	3.64	3.52	N/A	N/A	N/A	3.52	44.29	N/M		
											14-Oct-2017	3.71	3.59	N/A	N/A	N/A	3.59	44.22	N/M		
											21-Nov-2017	3.98	3.86	N/A	N/A	N/A	3.86	43.95	N/M		
											19-Dec-2017	4.06	3.94	N/A	N/A	N/A	3.94	43.87	N/M		
											17-Jan-2018	4.09	3.97	N/A	N/A	N/A	3.97	43.84	N/M		
											13-Feb-2018	4.13	4.01	N/A	N/A	N/A	4.01	43.80	N/M		
											21-Mar-2018	4.21	4.09	N/A	N/A	N/A	4.09	43.72	N/M		
											07-Apr-2018	4.28	4.16	N/A	N/A	N/A	4.16	43.65	N/M		
											01-May-2018	4.04	3.92	N/A	N/A	N/A	3.92	43.89	N/M		
											24-Jun-2018	3.08	2.96	N/A	N/A	N/A	2.96	44.85	N/M		
											12-Aug-2018	3.72	3.60	N/A	N/A	N/A	3.60	44.21	N/M		
											18-Sep-2018	3.12	3.00	N/A	N/A	N/A	3.00	44.81	N/M		
											16-Oct-2018	3.59	3.47	N/A	N/A	N/A	3.47	44.34	N/M		
											27-Apr-2019	3.70	3.58	N/A	N/A	N/A	3.58	44.23	N/M		
											22-Jun-2019	2.90	2.78	N/A	N/A	N/A	2.78	45.03	N/M		
											22-Jul-2019	3.78	3.66	N/A	N/A	N/A	3.66	44.15	N/M		
											24-Aug-2019	3.57	3.45	N/A	N/A	N/A	3.45	44.36	N/M		
											02-Oct-2019	3.89	3.77	N/A	N/A	N/A	3.77	44.04	N/M		
											10-Dec-2019	4.15	4.03	N/A	N/A	N/A	4.03	43.78	N/M		
RB-OBS-47	W-CAT-4	600472.249	7241230.800	47.27	47.41	0.14	6.00	41.27	1.00 - 4.00	0.70 - 4.00	13-Mar-2016	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M	N/M	Silty Clay with Sand/Clay/Sand	Blocked at 1.20
											08-Jun-2016	1.74	1.60	N/A	N/A	N/A	1.60	45.67	N/M			
											13-Aug-2016	3.17	3.04	N/A	N/A	N/A	3.04	44.24	N/M			
											14-Mar-2017	3.92	3.78	N/A	N/A	N/A	3.78	43.49	N/M			
											11-Apr-2017	4.00	3.86	N/A	N/A	N/A	3.86	43.41	N/M			
											15-Jun-2017	1.09	0.95	N/A	N/A	N/A	0.95	46.32	N/M		Frozen, no sample
											15-Jul-2017	2.70	2.56	N/A	N/A	N/A	2.56	44.71	N/M		
											19-Aug-2017	3.26	3.12	N/A	N/A	N/A	3.12	44.15	N/M		
											15-Sep-2017	2.76	2.62	N/A	N/A	N/A	2.62	44.65	N/M		
											14-Oct-2017	3.28	3.14	N/A	N/A	N/A	3.14	44.13	N/M		
											21-Nov-2017	3.57	3.43	N/A	N/A	N/A	3.43	43.84	N/M		
											19-Dec-2017	3.69	3.55	N/A	N/A	N/A	3.55	43.72	N/M		
											17-Jan-2018	3.76	3.62	N/A	N/A	N/A	3.62	43.65	N/M		
											13-Feb-2018	3.78	3.64	N/A	N/A	N/A	3.64	43.63	N/M		
											21-Mar-2018	3.89	3.75	N/A	N/A	N/A	3.75	43.52	N/M		
											07-Apr-2018	3.97	3.83	N/A	N/A	N/A	3.83	43.44	N/M		
											01-May-2018	3.88	3.74	N/A	N/A	N/A	3.74	43.53	N/M		
											24-Jun-2018	2.52	2.38	N/A	N/A	N/A	2.38	44.89	N/M		
											12-Aug-2018	3.35	3.21	N/A	N/A	N/A	3.21	44.06	N/M		
											18-Sep-2018	2.57	2.44	N/A	N/A	N/A	2.44	44.84	N/M		
											16-Oct-2018	3.14	3.00	N/A	N/A	N/A	3.00	44.27	N/M		
											27-Apr-2019	3.49	3.35	N/A	N/A	N/A	3.35	43.92	N/M		
											22-Jun-2019	2.29	2.15	N/A	N/A	N/A	2.15	45.12	N/M		
											22-Jul-2019	3.06	2.92	N/A	N/A	N/A	2.92	44.35	N/M		Globules of HC on probe
											24-Aug-2019	2.94	2.80	N/A	N/A	N/A	2.80	44.47	N/M		
											02-Oct-2019	3.47	3.33	N/A	N/A	N/A	3.33	43.94	N/M		
											10-Dec-2019	3.84	3.70	N/A	N/A	N/A	3.70	43.57	N/M		
RB-OBS-48	W-CAT-4	600486.405	7241251.707	50.14	50.26	0.12	4.00	46.14	1.00 - 4.00	0.70 - 4.00	12-Mar-2016	3.87	3.75	N/A	N/A	N/A	3.75	46.39	N/M	N/M	Sandy Clay	
											08-Jun-2016	0.33	0.21	N/A	N/A	N/A	0.21	49.93	N/M			

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
RB-OBS-48 (cont.)											13-Aug-2016	3.71	3.58	N/A	N/A	N/A	3.58	46.55	N/M			
											02-Nov-2016	4.10	3.98	N/A	N/A	N/A	3.98	46.16	N/M			
											22-Jun-2019	3.61	3.49	N/A	N/A	N/A	3.49	46.65	N/M			Replace lock
											22-Jul-2019	3.63	3.51	N/A	N/A	N/A	3.51	46.63	N/M			
											24-Aug-2019	3.36	3.24	N/A	N/A	N/A	3.24	46.90	N/M			
											02-Oct-2019	3.64	3.52	N/A	N/A	N/A	3.52	46.62	N/M			
RB-OBS-49	W-CAT-4	600473.485	7241250.454	50.18	50.35	0.17	6.00	44.18	1.00 - 4.00	0.70 - 1.00	12-Mar-2016	> 4.40	> 4.23	N/A	N/A	N/A	> 4.23	< 45.95	N/M	N/M	Sandy Clay	Dry
											08-Jun-2016	2.83	2.66	N/A	N/A	N/A	2.66	47.52	N/M			
											13-Aug-2016	4.34	4.18	N/A	N/A	N/A	4.18	46.01	N/M			
											22-Jun-2019	4.21	4.04	N/A	N/A	N/A	4.04	46.14	N/M			
											22-Jul-2019	> 6.17	> 6.00	N/A	N/A	N/A	> 6.00	< 44.18	N/M			Dry @ 4.39
											24-Aug-2019	4.38	4.21	N/A	N/A	N/A	4.21	45.97	N/M			
											02-Oct-2019	> 6.17	> 6.00	N/A	N/A	N/A	> 6.00	< 44.18	N/M			Dry @ 4.39
RB-OBS-50	W-CAT-4	600454.914	7241249.529	49.26	49.40	0.14	4.30	44.96	1.30 - 4.30	0.90 - 4.30	12-Mar-2016	> 4.46	> 4.32	N/A	N/A	N/A	> 4.32	< 44.94	N/M	N/M	Silty Sandy Clay/Silty Sand	Dry
											08-Jun-2016	3.97	3.83	N/A	N/A	N/A	3.83	45.43	N/M			
											13-Aug-2016	4.35	4.21	N/A	N/A	N/A	4.21	45.05	N/M			
											02-Nov-2016	4.41	4.27	N/A	N/A	N/A	4.27	44.99	N/M			
											22-Jun-2019	4.22	4.08	N/A	N/A	N/A	4.08	45.18	N/M			
											22-Jul-2019	> 4.44	> 4.30	N/A	N/A	N/A	> 4.30	< 44.96	N/M			Dry @ 4.44
											24-Aug-2019	4.35	4.21	N/A	N/A	N/A	4.21	45.05	N/M			
											02-Oct-2019	4.38	4.24	N/A	N/A	N/A	4.24	45.02	N/M			
RB-OBS-51	W-CAT-4	600450.725	7241237.898	47.68	47.85	0.17	4.20	43.48	2.70 - 4.20	2.30 - 4.20	13-Mar-2016	> 4.53	> 4.36	N/A	N/A	N/A	> 4.36	< 43.32	N/M	N/M	Silty Sand/Sand	Dry
											08-Jun-2016	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Well damaged
											13-Aug-2016	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Well damaged and filled with soil material, fernco splice broken
											22-Jun-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Destroyed. Double check this isn't 50. Found old casing protector
											22-Jul-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Destroyed.
											24-Aug-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Destroyed. Definitely 50
											02-Oct-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Destroyed.
RB-OBS-52	W-CAT-4	600463.863	7241230.931	47.55	47.74	0.19	4.10	43.45	2.60 - 4.10	2.20 - 4.10	13-Mar-2016	3.76	3.57	N/A	N/A	N/A	3.57	43.98	N/M	N/M	Sandy Clay/Sandy Gravel	
											22-Jun-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Destroyed. CNL
											22-Jul-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Destroyed.
											24-Aug-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Destroyed.
											02-Oct-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Destroyed.
RB-13-1-2.4	W-CAT-4	600502.375	7241194.566	43.39	43.26	-0.13	N/A	N/A	0.90 - 2.40	N/A	14-Sep-2017	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M	N/M		Not measured.
RB-13-3-2.4	W-CAT-4	600377.966	7241221.821	41.87	41.68	-0.19	N/A	N/A	0.90 - 2.40	N/A	13-Aug-2016	0.69	0.87	N/A	N/A	N/A	0.87	40.99	N/M	N/M		
											01-Oct-2016	0.26	0.45	N/A	N/A	N/A	0.45	41.42	N/M			
											21-Sep-2018	0.00	0.19	N/A	N/A	N/A	0.19	41.68	N/M			
RB-13-6-2.4	W-CAT-4	600519.677	7241153.351	42.31	41.99	-0.32	N/A	N/A	0.90 - 2.40	N/A	13-Aug-2016	0.20	0.52	N/A	N/A	N/A	0.52	41.79	N/M	N/M		
											01-Oct-2016	0.39	0.71	N/A	N/A	N/A	0.71	41.60	N/M			
RB-13-7-1.5	W-CAT-4	600544.881	7241182.735	42.62	42.40	-0.22	N/A	N/A	0.60 - 1.50	N/A	21-Sep-2018	0.00	0.22	N/A	N/A	N/A	0.22	42.40	N/M	N/M		
RB-RW-3	W-CAT-4	600487.364	7241230.744	47.01	47.66	0.65	8.55	38.46	1.10 - 8.60	0.80 - 8.55	08-Jun-2016	2.775	2.130	2.734	0.041	0.033	2.097	44.913	N/M	N/M	Sand/gravel/siltstone	
											13-Aug-2016	8.370	7.725	8.288	0.082	0.066	7.659	39.351	N/M			
											02-Nov-2016	5.320	4.675	5.220	0.100	0.080	4.595	42.415	N/M			
											15-Jun-2017	2.850	2.205	2.790	0.060	0.048	2.157	44.853	N/M			
											15-Jul-2017	3.530	2.885	3.470	0.060	0.048	2.837	44.173	N/M			
											19-Aug-2017	3.902	3.257	3.893	0.009	0.007	3.250	43.760	N/M			
											15-Sep-2017	3.670	3.025	3.660	0.010	0.008	3.017	43.993	N/M			
											21-Nov-2017	4.155	3.510	4.145	0.010	0.008	3.502	43.508	N/M			
											17-Jan-2018	4.640	3.995	4.620	0.020	0.016	3.979	43.031	N/M			
											13-Feb-2018	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Frozen, trace free phase
											21-Mar-2018	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Frozen, trace free phase
											07-Apr-2018	5.620	4.975	5.480	0.140	0.112	4.863	42.147	N/M			
											01-May-2018	4.949	4.304	4.946	0.003	0.002	4.302	42.708	N/M			
											24-Jun-2018	3.640	2.995	3.630	0.010	0.008	2.987	44.023	N/M			Dark brown free phase
											17-Jul-2018	3.574	2.929	3.570	0.004	0.003	2.926	44.084	N/M			
											12-Aug-2018	3.790	3.145	3.760	0.030	0.024	3.121	43.889	N/M			
											17-Sep-2018	3.497	2.852	3.492	0.005	0.004	2.848	44.162	N/M			
											16-Oct-2018	3.700	3.055	3.690	0.010	0.008	3.047	43.963	N/M			
											22-Jun-2019	3.473	2.828	3.470	0.003	0.002	2.826	44.184	N/M			FP golden light brown
											22-Jul-2019	4.082	3.437	4.065	0.017	0.014	3.423	43.587	N/M			
											24-Aug-2019	4.448	3.803	4.438	0.010	0.008	3.795	43.215	N/M			Light gold product
											02-Oct-2019	4.413	3.768	4.405	0.008	0.006	3.762	43.248	N/M			Light gold
											10-Dec-2019	5.235	4.590	5.220	0.015	0.012	4.578	42.432	N/M			

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
RB-RW-4	W-CAT-4	600499.940	7241231.676	47.38	47.99	0.61	7.65	39.73	1.70 - 7.70	1.20 - 7.65	08-Jun-2016	2.71	2.10	N/A	N/A	N/A	2.10	45.28	N/M	N/M	Sand/gravel/siltstone	
											13-Aug-2016	4.43	3.82	N/A	N/A	N/A	3.82	43.56	N/M			
											22-Jun-2019	4.700	4.089	4.697	0.003	0.002	4.087	43.293	N/M			FB - Black and gold comingled
											22-Jul-2019	4.18	3.57	N/A	N/A	N/A	3.57	43.81	N/M			
											24-Aug-2019	4.553	3.942	4.542	0.011	0.009	3.933	43.447	N/M			Dark brown product
											02-Oct-2019	4.61	4.00	N/A	N/A	N/A	4.00	43.38	N/M			
RB-RW-5	W-CAT-4	600513.349	7241232.437	48.23	48.89	0.66	9.52	38.71	1.80 - 9.30	1.20 - 9.52	13-Mar-2016	6.56	5.90	N/A	N/A	N/A	5.90	42.33	N/M	N/M	Sand/gravel/siltstone	Skimmer bailer in well
											08-Jun-2016	3.58	2.92	N/A	N/A	N/A	2.92	45.31	N/M			
											13-Aug-2016	5.54	4.88	N/A	N/A	N/A	4.88	43.35	N/M			Bailer in well
											02-Nov-2016	6.39	5.73	N/A	N/A	N/A	5.73	42.50	N/M			No cap
											14-Mar-2017	6.84	6.18	N/A	N/A	N/A	6.18	42.05	N/M			
											11-Apr-2017	6.71	6.05	N/A	N/A	N/A	6.05	42.18	N/M			
											16-Jun-2017	3.64	2.98	N/A	N/A	N/A	2.98	45.25	N/M			
											15-Jul-2017	4.33	3.67	N/A	N/A	N/A	3.67	44.56	N/M			
											19-Aug-2017	5.02	4.36	N/A	N/A	N/A	4.36	43.87	N/M			
											15-Sep-2017	4.84	4.18	N/A	N/A	N/A	4.18	44.05	N/M			
											14-Oct-2017	5.05	4.39	N/A	N/A	N/A	4.39	43.84	N/M			
											21-Nov-2017	5.47	4.81	N/A	N/A	N/A	4.81	43.42	N/M			
											20-Dec-2017	5.74	5.08	N/A	N/A	N/A	5.08	43.15	N/M			
											17-Jan-2018	6.04	5.38	N/A	N/A	N/A	5.38	42.85	N/M			
											13-Feb-2018	6.18	5.52	N/A	N/A	N/A	5.52	42.71	N/M			
											21-Mar-2018	6.48	5.82	N/A	N/A	N/A	5.82	42.41	N/M			
											07-Apr-2018	6.55	5.89	N/A	N/A	N/A	5.89	42.34	N/M			
											01-May-2018	6.46	5.80	N/A	N/A	N/A	5.80	42.43	N/M			
											24-Jun-2018	5.01	4.35	N/A	N/A	N/A	4.35	43.88	N/M			
											17-Jul-2018	5.00	4.34	N/A	N/A	N/A	4.34	43.89	N/M			
											12-Aug-2018	5.16	4.50	N/A	N/A	N/A	4.50	43.73	N/M			
											18-Sep-2018	4.94	4.28	N/A	N/A	N/A	4.28	43.95	N/M			
											16-Oct-2018	5.10	4.44	N/A	N/A	N/A	4.44	43.79	N/M			
											27-Apr-2019	6.12	5.46	N/A	N/A	N/A	5.46	42.77	N/M			
											22-Jun-2019	4.89	4.23	N/A	N/A	N/A	4.23	44.00	N/M			
											22-Jul-2019	5.30	4.64	N/A	N/A	N/A	4.64	43.59	N/M			
											24-Aug-2019	5.62	4.96	N/A	N/A	N/A	4.96	43.27	N/M			
											02-Oct-2019	5.74	5.08	N/A	N/A	N/A	5.08	43.15	N/M			sheen on probe
											10-Dec-2019	6.51	5.85	N/A	N/A	N/A	5.85	42.38	N/M			
RB-RW-6	W-CAT-4	600523.550	7241233.536	48.86	49.58	0.72	9.40	39.46	1.90 - 9.40	1.20 - 9.40	13-Mar-2016	7.07	6.35	N/A	N/A	N/A	6.35	42.51	N/M	N/M	Sand/gravel/siltstone	Skimmer bailer in well
											08-Jun-2016	3.61	2.89	N/A	N/A	N/A	2.89	45.97	N/M			
											13-Aug-2016	5.09	4.37	N/A	N/A	N/A	4.37	44.49	N/M			Free-phase bailer in well
											22-Jun-2019	4.10	3.38	N/A	N/A	N/A	3.38	45.48	N/M			
											22-Jul-2019	4.93	4.21	N/A	N/A	N/A	4.21	44.65	N/M			
											24-Aug-2019	4.86	4.14	N/A	N/A	N/A	4.14	44.72	N/M			
											02-Oct-2019	5.45	4.73	N/A	N/A	N/A	4.73	44.13	N/M			
RB-RW-8	W-CAT-4	600434.648	7241246.702	45.87	46.39	0.52	8.09	37.78	2.60 - 7.80	2.60 - 7.80	08-Jun-2016	1.12	0.60	N/A	N/A	N/A	0.60	45.27	N/M	N/M	Silty clay / siltstone	
											13-Aug-2016	2.37	1.85	N/A	N/A	N/A	1.85	44.02	N/M			
											14-Mar-2017	3.63	3.11	N/A	N/A	N/A	3.11	42.76	N/M			
											15-Jun-2017	1.110	0.590	1.090	0.020	0.016	0.574	45.296	N/M			
											16-Jul-2017	1.76	1.24	N/A	N/A	N/A	1.24	44.63	N/M			
											19-Aug-2017	2.09	1.57	N/A	N/A	N/A	1.57	44.30	N/M			
											14-Sep-2017	1.92	1.40	N/A	N/A	N/A	1.40	44.47	N/M			
											14-Oct-2017	1.90	1.38	N/A	N/A	N/A	1.38	44.49	N/M			
											21-Nov-2017	2.22	1.70	N/A	N/A	N/A	1.70	44.17	N/M			
											20-Dec-2017	2.49	1.97	N/A	N/A	N/A	1.97	43.90	N/M			
											17-Jan-2018	2.77	2.25	N/A	N/A	N/A	2.25	43.62	N/M			
											07-Apr-2018	3.30	2.78	N/A	N/A	N/A	2.78	43.09	N/M			
											01-May-2018	2.99	2.47	N/A	N/A	N/A	2.47	43.40	N/M			
											24-Jun-2018	1.83	1.31	N/A	N/A	N/A	1.31	44.56	N/M			
											17-Jul-2018	1.86	1.34	N/A	N/A	N/A	1.34	44.53	N/M			
											12-Aug-2018	1.99	1.47	N/A	N/A	N/A	1.47	44.40	N/M			
											19-Sep-2018	1.77	1.25	N/A	N/A	N/A	1.25	44.62	N/M			
											16-Oct-2018	1.90	1.38	N/A	N/A	N/A	1.38	44.49	N/M			
											22-Jun-2019	1.68	1.16	N/A	N/A	N/A	1.16	44.71	N/M			
											22-Jul-2019	0.88	0.36	N/A	N/A	N/A	0.36	45.51	N/M			
											24-Aug-2019	2.79	2.27	N/A	N/A	N/A	2.27	43.60	N/M			
											02-Oct-2019	2.67	2.15	N/A	N/A	N/A	2.15	43.72	N/M			
											10-Dec-2019	3.66	3.14	N/A	N/A	N/A	3.14	42.73	N/M			

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Table 2

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
RB-RW-9	W-CAT-4	600456.161	7241234.880	47.64	48.35	0.71	8.77	38.87	2.30 - 8.40	2.30 - 8.40	08-Jun-2016	1.86	1.15	N/A	N/A	N/A	1.15	46.49	N/M	N/M	Silt/sand/gravel/siltstone	
											13-Aug-2016	3.06	2.35	N/A	N/A	N/A	2.35	45.29	N/M			
											14-Mar-2017	5.42	4.71	N/A	N/A	N/A	4.71	42.93	N/M			
											11-Apr-2017	5.40	4.69	N/A	N/A	N/A	4.69	42.95	N/M			
											15-Jun-2017	1.78	1.07	N/A	N/A	N/A	1.07	46.57	N/M			
											16-Jul-2017	2.84	2.13	N/A	N/A	N/A	2.13	45.51	N/M			
											19-Aug-2017	3.36	2.65	N/A	N/A	N/A	2.65	44.99	N/M			
											14-Sep-2017	3.19	2.48	N/A	N/A	N/A	2.48	45.16	N/M			
											14-Oct-2017	3.39	2.68	N/A	N/A	N/A	2.68	44.96	N/M			
											22-Nov-2017	3.72	3.01	N/A	N/A	N/A	3.01	44.63	N/M			
											20-Dec-2017	4.03	3.32	N/A	N/A	N/A	3.32	44.32	N/M			
											17-Jan-2018	4.35	3.64	N/A	N/A	N/A	3.64	44.00	N/M			
											13-Feb-2018	4.60	3.89	N/A	N/A	N/A	3.89	43.75	N/M			
											21-Mar-2018	4.86	4.15	N/A	N/A	N/A	4.15	43.49	N/M			
											07-Apr-2018	4.91	4.20	N/A	N/A	N/A	4.20	43.44	N/M			
											01-May-2018	4.37	3.66	N/A	N/A	N/A	3.66	43.98	N/M			
											24-Jun-2018	3.44	2.73	N/A	N/A	N/A	2.73	44.91	N/M			
											17-Jul-2018	3.37	2.66	N/A	N/A	N/A	2.66	44.98	N/M			
											12-Aug-2018	3.50	2.79	N/A	N/A	N/A	2.79	44.85	N/M			
											19-Sep-2018	3.21	2.50	N/A	N/A	N/A	2.50	45.14	N/M			
											16-Oct-2018	3.40	2.69	N/A	N/A	N/A	2.69	44.95	N/M			
											27-Apr-2019	4.63	3.92	N/A	N/A	N/A	3.92	43.72	N/M			
											22-Jun-2019	3.30	2.59	N/A	N/A	N/A	2.59	45.05	N/M		Brown globules on probe
											22-Jul-2019	2.10	1.39	N/A	N/A	N/A	1.39	46.25	N/M		
											24-Aug-2019	4.15	3.44	N/A	N/A	N/A	3.44	44.20	N/M		
											02-Oct-2019	4.15	3.44	N/A	N/A	N/A	3.44	44.20	N/M		
											10-Dec-2019	5.20	4.49	N/A	N/A	N/A	4.49	43.15	N/M		
RB-RW-12	W-CAT-4	600480.975	7241229.137	46.92	47.41	0.49	8.16	38.76	1.80 - 7.90	1.80 - 7.90	13-Aug-2016	1.82	1.33	N/A	N/A	N/A	1.33	45.59	N/M	N/M	Silty sand/siltstone	
											22-Jun-2019	1.31	0.82	N/A	N/A	N/A	0.82	46.10	N/M			
											22-Jul-2019	2.88	2.39	N/A	N/A	N/A	2.39	44.53	N/M			
											24-Aug-2019	2.16	1.67	N/A	N/A	N/A	1.67	45.25	N/M			
											02-Oct-2019	4.41	3.92	N/A	N/A	N/A	3.92	43.00	N/M			
RB-RW-13	W-CAT-4	600504.617	7241231.131	47.54	48.26	0.72	8.94	38.60	2.50 - 8.60	2.50 - 8.60	08-Jun-2016	2.88	2.16	N/A	N/A	N/A	2.16	45.38	N/M	N/M	Sand/gravel/siltstone	
											13-Aug-2016	2.74	2.02	N/A	N/A	N/A	2.02	45.52	N/M			
											14-Mar-2017	5.34	4.62	N/A	N/A	N/A	4.62	42.92	N/M			
											11-Apr-2017	5.32	4.60	N/A	N/A	N/A	4.60	42.94	N/M			
											15-Jun-2017	1.86	1.14	N/A	N/A	N/A	1.14	46.40	N/M			
											16-Jul-2017	2.52	1.80	N/A	N/A	N/A	1.80	45.74	N/M			
											19-Aug-2017	3.76	3.04	N/A	N/A	N/A	3.04	44.50	N/M			
											15-Sep-2017	3.74	3.02	N/A	N/A	N/A	3.02	44.52	N/M			
											14-Oct-2017	3.63	2.91	N/A	N/A	N/A	2.91	44.63	N/M			
											21-Nov-2017	4.01	3.29	N/A	N/A	N/A	3.29	44.25	N/M			
											20-Dec-2017	4.16	3.44	N/A	N/A	N/A	3.44	44.10	N/M			
											17-Jan-2018	4.36	3.64	N/A	N/A	N/A	3.64	43.90	N/M			
RB-RW-13 (cont.)											13-Feb-2018	4.57	3.85	N/A	N/A	N/A	3.85	43.69	N/M			
											21-Mar-2018	4.84	4.12	N/A	N/A	N/A	4.12	43.42	N/M			
											07-Apr-2018	4.91	4.19	N/A	N/A	N/A	4.19	43.35	N/M			
											01-May-2018	4.75	4.03	N/A	N/A	N/A	4.03	43.51	N/M			
											24-Jun-2018	2.75	2.03	N/A	N/A	N/A	2.03	45.51	N/M			
											17-Jul-2018	3.04	2.32	N/A	N/A	N/A	2.32	45.22	N/M			
											12-Aug-2018	3.66	2.94	N/A	N/A	N/A	2.94	44.60	N/M			
											19-Sep-2018	2.69	1.97	N/A	N/A	N/A	1.97	45.57	N/M			
											16-Oct-2018	3.38	2.66	N/A	N/A	N/A	2.66	44.88	N/M			
											22-Jun-2019	2.52	1.80	N/A	N/A	N/A	1.80	45.74	N/M			
											22-Jul-2019	2.93	2.21	N/A	N/A	N/A	2.21	45.33	N/M			
											24-Aug-2019	3.22	2.50	N/A	N/A	N/A	2.50	45.04	N/M			
											02-Oct-2019	4.37	3.65	N/A	N/A	N/A	3.65	43.89	N/M			
											13-Dec-2019	5.14	4.42	N/A	N/A	N/A	4.42	43.12	N/M			
RB-MW17-01	W-CAT-4	600512.866	7241204.771	44.11	44.46	0.35	2.70	41.41	1.20 - 2.70	1.00 - 3.00	16-Jun-2017	0.76	0.41	N/A	N/A	N/A	0.41	43.70	N/M	N/M	Silt/clayey sand	
											15-Jul-2017	1.10	0.75	N/A	N/A	N/A	0.75	43.36	N/M			
											19-Aug-2017	1.43	1.08	N/A	N/A	N/A	1.08	43.03	N/M			
											14-Sep-2017	1.35	1.00	N/A	N/A	N/A	1.00	43.11	N/M			
											14-Oct-2017	1.28	0.93	N/A	N/A	N/A	0.93	43.18	N/M			
											21-Nov-2017	1.80	1.45	N/A	N/A	N/A	1.45	42.66	N/M			
											19-Dec-2017	2.08	1.73	N/A	N/A	N/A	1.73	42.38	N/M			
											17-Jan-2018	2.38	2.03	N/A	N/A	N/A	2.03	42.08	N/M			
											13-Feb-2018	2.48	2.13	N/A	N/A	N/A	2.13	41.98	N/M		

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
RB-MW17-01 (cont.)											20-Mar-2018	2.72	2.37	N/A	N/A	N/A	2.37	41.74	N/M			
											07-Apr-2018	2.78	2.43	N/A	N/A	N/A	2.43	41.68	N/M			
											01-May-2018	2.71	2.36	N/A	N/A	N/A	2.36	41.75	N/M			
											24-Jun-2018	1.29	0.94	N/A	N/A	N/A	0.94	43.17	N/M			
											17-Jul-2018	1.24	0.89	N/A	N/A	N/A	0.89	43.22	N/M			
											11-Aug-2018	1.37	1.02	N/A	N/A	N/A	1.02	43.09	N/M			
											17-Sep-2018	1.20	0.85	N/A	N/A	N/A	0.85	43.26	N/M			
											16-Oct-2018	1.34	0.99	N/A	N/A	N/A	0.99	43.12	N/M			
											27-Apr-2019	2.620	2.270	3.130	-0.510	-0.408	2.678	41.432	N/M			
											22-Jun-2019	1.19	0.84	N/A	N/A	N/A	0.84	43.27	N/M			
											22-Jul-2019	1.65	1.30	N/A	N/A	N/A	1.30	42.81	N/M			
											24-Aug-2019	1.99	1.64	N/A	N/A	N/A	1.64	42.47	N/M			
											02-Oct-2019	2.07	1.72	N/A	N/A	N/A	1.72	42.39	N/M			20cm frost jack
											11-Dec-2019	2.96	2.61	N/A	N/A	N/A	2.61	41.50	N/M			
RB-MW17-02	W-CAT-4	600503.853	7241205.386	44.13	44.27	0.14	3.75	40.38	2.25 - 3.75	2.00 - 3.75	16-Jun-2017	0.59	0.45	N/A	N/A	N/A	0.45	43.68	N/M	N/M	Clayey silt	
											15-Jul-2017	0.89	0.75	N/A	N/A	N/A	0.75	43.38	N/M			
											19-Aug-2017	1.25	1.11	N/A	N/A	N/A	1.11	43.02	N/M			
											14-Sep-2017	1.14	1.00	N/A	N/A	N/A	1.00	43.13	N/M			
											14-Oct-2017	1.18	1.04	N/A	N/A	N/A	1.04	43.09	N/M			
											21-Nov-2017	1.55	1.41	N/A	N/A	N/A	1.41	42.72	N/M			
											19-Dec-2017	1.83	1.69	N/A	N/A	N/A	1.69	42.44	N/M			
											17-Jan-2018	2.09	1.95	N/A	N/A	N/A	1.95	42.18	N/M			
											13-Feb-2018	2.25	2.11	N/A	N/A	N/A	2.11	42.02	N/M			
											20-Mar-2018	2.49	2.35	N/A	N/A	N/A	2.35	41.78	N/M			
											07-Apr-2018	2.50	2.36	N/A	N/A	N/A	2.36	41.77	N/M			
											01-May-2018	2.49	2.35	N/A	N/A	N/A	2.35	41.78	N/M			
											24-Jun-2018	1.09	0.95	N/A	N/A	N/A	0.95	43.18	N/M			
											17-Jul-2018	1.02	0.88	N/A	N/A	N/A	0.88	43.25	N/M			
											11-Aug-2018	1.17	1.03	N/A	N/A	N/A	1.03	43.10	N/M			
											17-Sep-2018	0.98	0.84	N/A	N/A	N/A	0.84	43.29	N/M			
											16-Oct-2018	1.13	0.99	N/A	N/A	N/A	0.99	43.14	N/M			
											27-Apr-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Under ice
											22-Jun-2019	0.96	0.82	N/A	N/A	N/A	0.82	43.31	N/M			
											22-Jul-2019	1.41	1.27	N/A	N/A	N/A	1.27	42.86	N/M			
											24-Aug-2019	1.80	1.66	N/A	N/A	N/A	1.66	42.47	N/M			
											02-Oct-2019	1.83	1.69	N/A	N/A	N/A	1.69	42.44	N/M			
											11-Dec-2019	2.69	2.55	N/A	N/A	N/A	2.55	41.58	N/M			
RB-MW17-03	W-CAT-4	600493.699	7241206.460	44.37	44.43	0.06	4.50	39.87	3.00 - 4.50	2.75 - 4.50	16-Jun-2017	0.64	0.58	N/A	N/A	N/A	0.58	43.79	N/M	N/M	Clayey silt	
											16-Jul-2017	1.13	1.07	N/A	N/A	N/A	1.07	43.30	N/M			
											19-Aug-2017	1.41	1.35	N/A	N/A	N/A	1.35	43.02	N/M			
											14-Sep-2017	1.27	1.21	N/A	N/A	N/A	1.21	43.16	N/M			
											14-Oct-2017	1.23	1.17	N/A	N/A	N/A	1.17	43.20	N/M			
											21-Nov-2017	1.68	1.62	N/A	N/A	N/A	1.62	42.75	N/M			
											19-Dec-2017	1.96	1.90	N/A	N/A	N/A	1.90	42.47	N/M			
											17-Jan-2018	2.23	2.17	N/A	N/A	N/A	2.17	42.20	N/M			Trace LNAPL
											13-Feb-2018	2.38	2.32	N/A	N/A	N/A	2.32	42.05	N/M			
											20-Mar-2018	> 4.56	> 4.50	N/A	N/A	N/A	> 4.50	< 39.87	N/M			Dry/frozen
											07-Apr-2018	2.67	2.61	N/A	N/A	N/A	2.61	41.76	N/M			
											01-May-2018	2.63	2.57	N/A	N/A	N/A	2.57	41.80	N/M			
											24-Jun-2018	1.26	1.20	N/A	N/A	N/A	1.20	43.17	N/M			
											17-Jul-2018	1.18	1.12	N/A	N/A	N/A	1.12	43.25	N/M			
											11-Aug-2018	1.34	1.28	N/A	N/A	N/A	1.28	43.09	N/M			
											17-Sep-2018	1.13	1.07	N/A	N/A	N/A	1.07	43.30	N/M			
											16-Oct-2018	1.29	1.23	N/A	N/A	N/A	1.23	43.14	N/M			
											27-Apr-2019	2.53	2.47	N/A	N/A	N/A	2.47	41.90	N/M			
											22-Jun-2019	1.15	1.09	N/A	N/A	N/A	1.09	43.28	N/M			Frost Jacked 25cm
											22-Jul-2019	1.61	1.55	N/A	N/A	N/A	1.55	42.82	N/M			
											24-Aug-2019	2.00	1.94	N/A	N/A	N/A	1.94	42.43	N/M			
											02-Oct-2019	2.02	1.96	N/A	N/A	N/A	1.96	42.41	N/M			
											11-Dec-2019	2.88	2.82	N/A	N/A	N/A	2.82	41.55	N/M			
RB-MW17-04	W-CAT-4	600484.130	7241207.960	44.82	44.78	-0.04	4.50	40.32	3.00 - 4.50	2.75 - 4.50	15-Jun-2017	0.97	1.01	N/A	N/A	N/A	1.01	43.81	N/M	N/M	Clayey silt	
											15-Jul-2017	1.41	1.45	N/A	N/A	N/A	1.45	43.37	N/M			Trace LNAPL
											19-Aug-2017	0.80	0.84	N/A	N/A	N/A	0.84	43.98	N/M			
											14-Sep-2017	1.60	1.64	N/A	N/A	N/A	1.64	43.18	N/M			
											14-Oct-2017	1.55	1.59	N/A	N/A	N/A	1.59	43.23	N/M			
											21-Nov-2017	2.01	2.05	N/A	N/A	N/A	2.05	42.77	N/M			
											19-Dec-2017	2.30	2.34	N/A	N/A	N/A	2.34	42.48	N/M			Trace LNAPL

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
RB-MW17-04 (cont.)											17-Jan-2018	2.55	2.59	N/A	N/A	N/A	2.59	42.23	N/M			Trace LNAPL
											13-Feb-2018	2.70	2.74	N/A	N/A	N/A	2.74	42.08	N/M			Trace LNAPL
											20-Mar-2018	2.99	3.03	N/A	N/A	N/A	3.03	41.79	N/M			Trace LNAPL
											07-Apr-2018	3.19	3.23	N/A	N/A	N/A	3.23	41.59	N/M			
											01-May-2018	2.98	3.02	N/A	N/A	N/A	3.02	41.80	N/M			Medium brown free phase
											24-Jun-2018	0.80	0.84	N/A	N/A	N/A	0.84	43.98	N/M			Monitoring well frozen @ 2.49 mbTOC, data not representative
											17-Jul-2018	0.10	0.14	N/A	N/A	N/A	0.14	44.68	N/M			Well frozen, data not representative
											11-Aug-2018	2.420	2.460	2.410	0.010	0.008	2.452	42.368	N/M			TD=4.55
											17-Sep-2018	1.49	1.53	N/A	N/A	N/A	1.53	43.29	N/M			
											16-Oct-2018	1.61	1.65	N/A	N/A	N/A	1.65	43.17	N/M			Trace brown free phase
											27-Apr-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Under ice
											22-Jun-2019	1.695	1.735	1.694	0.001	0.001	1.734	43.086	N/M			Frozen @ 1.82 Sheen. Needs new Jplug
											22-Jul-2019	1.766	1.806	1.762	0.004	0.003	1.803	43.017	N/M			Clear amber product
											24-Aug-2019	2.350	2.390	2.340	0.010	0.008	2.382	42.438	N/M			Very light gold product
											02-Oct-2019	2.340	2.380	2.399	-0.059	-0.047	2.427	42.393	N/M			
											11-Dec-2019	3.21	3.25	N/A	N/A	N/A	3.25	41.57	N/M			
RB-MW17-05	W-CAT-4	600476.409	7241207.174	44.89	44.76	-0.13	4.50	40.39	3.00 - 4.50	2.75 - 5.50	15-Jun-2017	4.29	4.42	N/A	N/A	N/A	4.42	40.47	N/M	N/M	Clayey silt	
											15-Jul-2017	1.07	1.20	N/A	N/A	N/A	1.20	43.69	N/M			
											19-Aug-2017	0.99	1.12	N/A	N/A	N/A	1.12	43.77	N/M			
											14-Sep-2017	1.31	1.44	N/A	N/A	N/A	1.44	43.45	N/M			
											14-Oct-2017	1.530	1.660	1.517	0.013	0.010	1.650	43.240	N/M			
											21-Nov-2017	2.390	2.520	2.370	0.020	0.016	2.504	42.386	N/M			
											19-Dec-2017	2.282	2.412	2.240	0.042	0.034	2.378	42.512	N/M			
											17-Jan-2018	2.550	2.680	2.530	0.020	0.016	2.664	42.226	N/M			
											13-Feb-2018	2.690	2.820	2.660	0.030	0.024	2.796	42.094	N/M			
											20-Mar-2018	> 4.37	> 4.50	N/A	N/A	N/A	> 4.50	< 40.39	N/M			Dry/frozen, trace LNAPL
											07-Apr-2018	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Frozen at 2.77 mbTOC, trace LNAPL
											01-May-2018	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Frozen
											24-Jun-2018	1.520	1.650	1.510	0.010	0.008	1.642	43.248	N/M			Monitoring well frozen @ 2.50 mbTOC, data not representative; dark brown free phase
											17-Jul-2018	0.295	0.425	0.050	0.245	0.196	0.229	44.661	N/M			Well frozen, data not representative
											11-Aug-2018	2.420	2.550	2.350	0.070	0.056	2.494	42.396	N/M			TD=2.72
											17-Sep-2018	1.546	1.676	1.347	0.199	0.159	1.517	43.373	N/M			
											16-Oct-2018	1.620	1.750	1.560	0.060	0.048	1.702	43.188	N/M			Brown free phase
											27-Apr-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Under ice
											22-Jun-2019	0.56	0.69	N/A	N/A	N/A	0.69	44.20	N/M			Frozen @ 1.85 H20 above Jplug. Comingled with black globules of HC. Sheen/odour Bailer full of
											22-Jul-2019	1.04	1.17	N/A	N/A	N/A	1.17	43.72	N/M			
											24-Aug-2019	1.655	1.785	1.643	0.012	0.010	1.775	43.115	N/M			Very light gold product
											02-Oct-2019	2.224	2.354	2.215	0.009	0.007	2.347	42.543	N/M			
											11-Dec-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Frozen in ground
RB-MW17-06	W-CAT-4	600467.027	7241210.404	45.14	45.06	-0.08	4.00	41.14	2.50 - 4.00	2.25 - 4.50	16-Jun-2017	2.21	2.29	N/A	N/A	N/A	2.29	42.85	N/M	N/M	Clayey silt	
											15-Jul-2017	1.43	1.51	N/A	N/A	N/A	1.51	43.63	N/M			
											19-Aug-2017	1.45	1.53	N/A	N/A	N/A	1.53	43.61	N/M			
											14-Sep-2017	1.40	1.48	N/A	N/A	N/A	1.48	43.66	N/M			
											14-Oct-2017	1.70	1.78	N/A	N/A	N/A	1.78	43.36	N/M			
											21-Nov-2017	1.93	2.01	N/A	N/A	N/A	2.01	43.13	N/M			
											19-Dec-2017	2.49	2.57	N/A	N/A	N/A	2.57	42.57	N/M			
											17-Jan-2018	2.74	2.82	N/A	N/A	N/A	2.82	42.32	N/M			
											13-Feb-2018	2.97	3.05	N/A	N/A	N/A	3.05	42.09	N/M			Trace LNAPL
											20-Mar-2018	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Frozen
											07-Apr-2018	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Frozen
											01-May-2018	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Frozen
											24-Jun-2018	2.480	2.560	1.090	1.390	1.112	1.448	43.692	N/M			Monitoring well frozen @ 2.92 mbTOC, data not representative; Product is dark brown
											17-Jul-2018	0.986	1.066	0.983	0.003	0.002	1.064	44.076	N/M			Well frozen, data not representative
											11-Aug-2018	1.400	1.480	1.390	0.010	0.008	1.472	43.668	N/M			TD=3.49
											17-Sep-2018	1.36	1.44	N/A	N/A	N/A	1.44	43.70	N/M			
											16-Oct-2018	1.73	1.81	N/A	N/A	N/A	1.81	43.33	N/M			
											27-Apr-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Bailer frozen in
											22-Jun-2019	1.05	1.13	N/A	N/A	N/A	1.13	44.01	N/M			Frozen @ 1.50 Bailer full of H20, H20 above Jplug *don't use for contours
											22-Jul-2019	1.09	1.17	N/A	N/A	N/A	1.17	43.97	N/M			
											24-Aug-2019	1.487	1.567	1.485	0.002	0.002	1.565	43.575	N/M			Light gold product
											02-Oct-2019	2.524	2.604	2.510	0.014	0.011	2.593	42.547	N/M			
											11-Dec-2019	3.416	3.496	3.375	0.041	0.033	3.463	41.677	N/M			
RB-MW17-07	W-CAT-4	600456.477	7241213.800	45.25	45.18	-0.07	5.50	39.75	4.00 - 5.50	3.75 - 5.50	16-Jun-2017	1.25	1.32	N/A	N/A	N/A	1.32	43.93	N/M	N/M	Clayey silt	
											15-Jul-2017	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			not measured
											19-Aug-2017	0.77	0.84	N/A	N/A	N/A	0.84	44.41	N/M			
											14-Sep-2017	1.89	1.96	N/A	N/A	N/A	1.96	43.29	N/M			
											14-Oct-2017	1.99	2.06	N/A	N/A	N/A	2.06	43.19	N/M			

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
RB-MW17-07 (cont.)											21-Nov-2017	2.24	2.31	N/A	N/A	N/A	2.31	42.94	N/M			
											19-Dec-2017	2.50	2.57	N/A	N/A	N/A	2.57	42.68	N/M			
											17-Jan-2018	2.77	2.84	N/A	N/A	N/A	2.84	42.41	N/M			
											13-Feb-2018	2.97	3.04	N/A	N/A	N/A	3.04	42.21	N/M			
											20-Mar-2018	3.26	3.33	N/A	N/A	N/A	3.33	41.92	N/M			
											07-Apr-2018	3.28	3.35	N/A	N/A	N/A	3.35	41.90	N/M			
											01-May-2018	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Frozen
											24-Jun-2018	1.03	1.10	N/A	N/A	N/A	1.10	44.15	N/M			
											17-Jul-2018	1.03	1.10	N/A	N/A	N/A	1.10	44.15	N/M			
											11-Aug-2018	1.47	1.54	N/A	N/A	N/A	1.54	43.71	N/M			
											17-Sep-2018	1.68	1.75	N/A	N/A	N/A	1.75	43.50	N/M			
											16-Oct-2018	1.78	1.85	N/A	N/A	N/A	1.85	43.40	N/M			Trace LNAPL
											27-Apr-2019	3.19	3.26	N/A	N/A	N/A	3.26	41.99	N/M			
											22-Jun-2019	1.30	1.37	N/A	N/A	N/A	1.37	43.88	N/M			Frozen@ 1.36 Bentonite and H20 over J-plug
											24-Aug-2019	1.837	1.907	1.833	0.004	0.003	1.904	43.346	N/M			Brown, golden product
											02-Oct-2019	3.535	3.605	2.510	1.025	0.820	2.785	42.465	N/M			See photo, actually 1m of product
											11-Dec-2019	4.115	4.185	3.412	0.703	0.562	3.623	41.627	N/M			
RB-MW17-08	W-CAT-4	600445.392	7241218.210	45.32	45.40	0.08	5.80	39.52	4.30 - 5.80	4.00 - 5.80	16-Jun-2017	1.45	1.37	N/A	N/A	N/A	1.37	43.95	N/M	N/M	Clayey silt/silt	
											15-Jul-2017	1.89	1.81	N/A	N/A	N/A	1.81	43.51	N/M			Trace LNAPL
											19-Aug-2017	2.27	2.19	N/A	N/A	N/A	2.19	43.13	N/M			
											14-Sep-2017	2.09	2.01	N/A	N/A	N/A	2.01	43.31	N/M			
											14-Oct-2017	2.05	1.97	N/A	N/A	N/A	1.97	43.35	N/M			
											21-Nov-2017	2.43	2.35	N/A	N/A	N/A	2.35	42.97	N/M			
											19-Dec-2017	2.72	2.64	N/A	N/A	N/A	2.64	42.68	N/M			
											17-Jan-2018	2.95	2.87	N/A	N/A	N/A	2.87	42.45	N/M			Trace LNAPL
											13-Feb-2018	3.14	3.06	N/A	N/A	N/A	3.06	42.26	N/M			
											20-Mar-2018	3.43	3.35	N/A	N/A	N/A	3.35	41.97	N/M			Trace LNAPL
											07-Apr-2018	3.45	3.37	N/A	N/A	N/A	3.37	41.95	N/M			
											01-May-2018	3.45	3.37	N/A	N/A	N/A	3.37	41.95	N/M			
											24-Jun-2018	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Monitoring well frozen @ 1.46 mbTOC
											17-Jul-2018	1.99	1.91	N/A	N/A	N/A	1.91	43.41	N/M			
											11-Aug-2018	2.14	2.06	N/A	N/A	N/A	2.06	43.26	N/M			
											17-Sep-2018	1.88	1.80	N/A	N/A	N/A	1.80	43.52	N/M			
											16-Oct-2018	2.05	1.97	N/A	N/A	N/A	1.97	43.35	N/M			
											27-Apr-2019	3.36	3.28	N/A	N/A	N/A	3.28	42.04	N/M			
											22-Jun-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Frozen at 1.36
											22-Jul-2019	2.45	2.37	N/A	N/A	N/A	2.37	42.95	N/M			
											24-Aug-2019	2.90	2.82	N/A	N/A	N/A	2.82	42.50	N/M			
											02-Oct-2019	3.83	3.75	N/A	N/A	N/A	3.75	41.57	N/M			
											11-Dec-2019	3.68	3.60	N/A	N/A	N/A	3.60	41.72	N/M			
RB-MW17-09	W-CAT-4	600437.667	7241227.749	45.64	45.93	0.29	5.80	39.84	4.30 - 5.80	4.10 - 6.00	16-Jun-2017	1.98	1.69	N/A	N/A	N/A	1.69	43.95	N/M	N/M	Clayey silt	
											15-Jul-2017	2.42	2.13	N/A	N/A	N/A	2.13	43.51	N/M			
											19-Aug-2017	2.80	2.51	N/A	N/A	N/A	2.51	43.13	N/M			
											14-Sep-2017	2.62	2.33	N/A	N/A	N/A	2.33	43.31	N/M			
											14-Oct-2017	2.57	2.28	N/A	N/A	N/A	2.28	43.36	N/M			
											21-Nov-2017	2.95	2.66	N/A	N/A	N/A	2.66	42.98	N/M			
											19-Dec-2017	3.22	2.93	N/A	N/A	N/A	2.93	42.71	N/M			
											17-Jan-2018	3.75	3.46	N/A	N/A	N/A	3.46	42.18	N/M			
											13-Feb-2018	3.66	3.37	N/A	N/A	N/A	3.37	42.27	N/M			Trace LNAPL
											20-Mar-2018	3.93	3.64	N/A	N/A	N/A	3.64	42.00	N/M			
											07-Apr-2018	3.97	3.68	N/A	N/A	N/A	3.68	41.96	N/M			
											01-May-2018	3.96	3.67	N/A	N/A	N/A	3.67	41.97	N/M			
											24-Jun-2018	2.56	2.27	N/A	N/A	N/A	2.27	43.37	N/M			
											17-Jul-2018	2.46	2.17	N/A	N/A	N/A	2.17	43.47	N/M			
											11-Aug-2018	2.65	2.36	N/A	N/A	N/A	2.36	43.28	N/M			
											17-Sep-2018	2.40	2.11	N/A	N/A	N/A	2.11	43.53	N/M			
											16-Oct-2018	2.56	2.27	N/A	N/A	N/A	2.27	43.37	N/M			
											27-Apr-2019	3.86	3.57	N/A	N/A	N/A	3.57	42.07	N/M			
											22-Jun-2019	2.47	2.18	N/A	N/A	N/A	2.18	43.46	N/M			
											22-Jul-2019	2.96	2.67	N/A	N/A	N/A	2.67	42.97	N/M			
											24-Aug-2019	3.41	3.12	N/A	N/A	N/A	3.12	42.52	N/M			
											02-Oct-2019	3.34	3.05	N/A	N/A	N/A	3.05	42.59	N/M			
											11-Dec-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Covered in snow
RB-MW17-10	W-CAT-4	600424.957	7241232.973	44.29	44.41	0.12	4.50	39.79	2.50 - 4.00	2.25 - 4.50	15-Jun-2017	0.490	0.370	0.460	0.030	0.024	0.346	43.944	N/M	N/M	Clayey silt	
											15-Jul-2017	0.960	0.840	0.870	0.090	0.072	0.768	43.522	N/M			
											19-Aug-2017	1.292	1.172	1.285	0.007	0.006	1.166	43.124	N/M			
											15-Sep-2017	1.08	0.96	N/A	N/A	N/A	0.96	43.33	N/M			Trace LNAPL

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Table 2

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
RB-MW17-10 (cont.)											14-Oct-2017	1.080	0.960	1.050	0.030	0.024	0.936	43.354	N/M			
											21-Nov-2017	1.43	1.31	N/A	N/A	N/A	1.31	42.98	N/M			
											19-Dec-2017	1.705	1.585	1.670	0.035	0.028	1.557	42.733	N/M			
											07-Apr-2018	2.48	2.36	N/A	N/A	N/A	2.36	41.93	N/M			Trace LNAPL
											01-May-2018	2.47	2.35	N/A	N/A	N/A	2.35	41.94	N/M			Sheen
											24-Jun-2018	1.19	1.07	N/A	N/A	N/A	1.07	43.22	N/M			
											17-Jul-2018	1.09	0.97	N/A	N/A	N/A	0.97	43.32	N/M			
											12-Aug-2018	1.15	1.03	N/A	N/A	N/A	1.03	43.26	N/M			Trace LNAPL
											17-Sep-2018	0.90	0.78	N/A	N/A	N/A	0.78	43.51	N/M			Trace LNAPL
											16-Oct-2018	1.07	0.95	N/A	N/A	N/A	0.95	43.34	N/M			
											27-Apr-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Under ice
											22-Jun-2019	0.98	0.86	N/A	N/A	N/A	0.86	43.43	N/M			
											22-Jul-2019	1.45	1.33	N/A	N/A	N/A	1.33	42.96	N/M			
											24-Aug-2019	1.97	1.85	N/A	N/A	N/A	1.85	42.44	N/M			Sheen on probe
											02-Oct-2019	1.85	1.73	N/A	N/A	N/A	1.73	42.56	N/M			
											11-Dec-2019	2.70	2.58	N/A	N/A	N/A	2.58	41.71	N/M			
RB-MW17-11	**W-CAT-4**	600413.608	7241239.480	44.30	44.41	0.11	4.00	40.30	2.50 - 4.00	2.25 - 4.30	15-Jun-2017	0.490	0.380	0.450	0.040	0.032	0.348	43.952	N/M	N/M	Gravelly clay/clayey silt	
											15-Jul-2017	0.940	0.830	0.900	0.040	0.032	0.798	43.502	N/M			
											19-Aug-2017	1.305	1.195	1.275	0.030	0.024	1.171	43.129	N/M			
											15-Sep-2017	1.080	0.970	1.070	0.010	0.008	0.962	43.338	N/M			
											14-Oct-2017	1.090	0.980	1.060	0.030	0.024	0.956	43.344	N/M			
											21-Nov-2017	1.426	1.316	1.424	0.002	0.002	1.314	42.986	N/M			
											19-Dec-2017	1.735	1.625	1.705	0.030	0.024	1.601	42.699	N/M			
											17-Jan-2018	1.990	1.880	1.930	0.060	0.048	1.832	42.468	N/M			
											13-Feb-2018	2.220	2.110	2.200	0.020	0.016	2.094	42.206	N/M			
											20-Mar-2018	2.418	2.308	2.415	0.003	0.002	2.306	41.994	N/M			
											07-Apr-2018	2.480	2.370	2.460	0.020	0.016	2.354	41.946	N/M			Dark brown free phase
											01-May-2018	2.462	2.352	2.460	0.002	0.002	2.350	41.950	N/M			Dark brown free phase
											24-Jun-2018	0.90	0.79	N/A	N/A	N/A	0.79	43.51	N/M			
											17-Jul-2018	0.890	0.780	0.885	0.005	0.004	0.776	43.524	N/M			
											12-Aug-2018	0.99	0.88	N/A	N/A	N/A	0.88	43.42	N/M			
											17-Sep-2018	0.74	0.63	N/A	N/A	N/A	0.63	43.67	N/M			Trace LNAPL
											16-Oct-2018	0.90	0.79	N/A	N/A	N/A	0.79	43.51	N/M			
											27-Apr-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Under ice
											22-Jun-2019	0.82	0.71	N/A	N/A	N/A	0.71	43.59	N/M			
											22-Jul-2019	1.30	1.19	N/A	N/A	N/A	1.19	43.11	N/M			
											24-Aug-2019	1.76	1.65	N/A	N/A	N/A	1.65	42.65	N/M			Sheen on probe
											02-Oct-2019	1.68	1.57	N/A	N/A	N/A	1.57	42.73	N/M			
											11-Dec-2019	2.09	1.98	N/A	N/A	N/A	1.98	42.32	N/M			
Refinery Bank Remediation System - Bedrock																							
NWR 98-13-21	**W-CAT-3**	600429.505	7241331.446	56.81	57.30	0.49	21.30	35.51	18.30 - 21.30	16.50 - 22.90	12-Mar-2016	16.79	16.30	N/A	N/A	N/A	16.30	40.51	N/M	3.9e-006	Siltstone	
											08-Jun-2016	14.22	13.73	N/A	N/A	N/A	13.73	43.08	N/M			
											05-Aug-2016	16.68	16.19	N/A	N/A	N/A	16.19	40.62	N/M			
											13-Aug-2016	16.92	16.43	N/A	N/A	N/A	16.43	40.38	N/M			
											02-Nov-2016	16.64	16.15	N/A	N/A	N/A	16.15	40.66	N/M			Frost-jacked well
											13-Aug-2017	14.62	14.13	N/A	N/A	N/A	14.13	42.68	N/M			
											20-Jul-2018	14.35	13.86	N/A	N/A	N/A	13.86	42.95	1.16			
											22-Jun-2019	14.22	13.73	N/A	N/A	N/A	13.73	43.08	N/M			
											15-Jul-2019	14.78	14.29	N/A	N/A	N/A	14.29	42.52	1.21			
											22-Jul-2019	14.98	14.49	N/A	N/A	N/A	14.49	42.32	N/M			
											24-Aug-2019	16.52	16.03	N/A	N/A	N/A	16.03	40.78	N/M			
											02-Oct-2019	15.64	15.15	N/A	N/A	N/A	15.15	41.66	N/M			
NWR 98-23-21	**W-CAT-3**	600492.173	7241254.988	50.91	51.26	0.35	21.40	29.28	18.40 - 21.40	13.80 - 21.40	12-Mar-2016	10.29	9.94	N/A	N/A	N/A	9.94	40.97	N/M	1.3e-007	Siltstone	
											08-Jun-2016	8.153	7.803	8.148	0.005	0.004	7.799	43.109	N/M			
											05-Aug-2016	> 8.96	> 8.61	N/A	N/A	N/A	> 8.61	< 42.30	N/M			Dry, No cap bailer laying next to well. Lock latch broken off
											13-Aug-2016	10.66	10.31	N/A	N/A	N/A	10.31	40.60	N/M			Free-phase bailer in well. WL taken 3 hours after removing
											13-Aug-2017	8.105	7.755	8.067	0.038	0.030	7.725	43.183	N/M			Skimmer in well
											18-Jul-2018	7.769	7.419	7.726	0.043	0.034	7.385	43.523	N/M			passive bailer pulled 3 days prior to measuring water level
											22-Jun-2019	7.669	7.319	7.623	0.046	0.037	7.282	43.626	N/M			F.P. clear
											15-Jul-2019	8.248	7.898	8.200	0.048	0.038	7.860	43.048	N/M			free product
											22-Jul-2019	8.435	8.085	8.395	0.040	0.032	8.053	42.855	N/M			
											24-Aug-2019	10.178	9.828	10.135	0.043	0.034	9.794	41.114	N/M			
											02-Oct-2019	9.284	8.934	9.240	0.044	0.035	8.899	42.009	N/M			
NWR 02-15-9	**W-CAT-3**	600372.680	7241425.370	58.07	58.77	0.70	9.00	49.07	6.00 - 9.00	5.40 - 9.00	06-Aug-2016	> 8.86	> 8.16	N/A	N/A	N/A	> 8.16	< 49.91	N/M	N/M		Dry
											13-Aug-2017	> 8.89	> 8.19	N/A	N/A	N/A	> 8.19	< 49.88	N/M			Dry

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
NWR 03-41-17	**W-CAT-3**	600500.891	7241289.017	55.41	55.30	-0.11	16.70	38.71	10.60 - 16.70	9.30 - 16.70	12-Mar-2016	15.14	15.25	N/A	N/A	N/A	15.25	40.16	N/M	>1.0E-05		
											22-Jun-2019	12.57	12.68	N/A	N/A	N/A	12.68	42.73	N/M			Black globules and rust on tape
											22-Jul-2019	2.61	2.72	N/A	N/A	N/A	2.72	52.69	N/M			
											24-Aug-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Blocked at 3.02
											02-Oct-2019	13.91	14.02	N/A	N/A	N/A	14.02	41.39	N/M			
NWR 03-42-19	**W-CAT-3**	600460.223	7241274.029	52.82	53.47	0.65	19.70	33.12	10.60 - 19.70	8.70 - 19.70	12-Mar-2016	12.99	12.34	N/A	N/A	N/A	12.34	40.48	N/M	>1.0E-05	Silty clay	
											05-Aug-2016	13.091	12.441	12.933	0.158	0.126	12.315	40.505	N/M			
											13-Aug-2016	13.17	12.52	N/A	N/A	N/A	12.52	40.30	N/M			
											14-Mar-2017	12.190	11.540	12.007	0.183	0.146	11.394	41.426	N/M			Light brown product on probe.
											11-Apr-2017	12.380	11.730	12.180	0.200	0.160	11.570	41.250	N/M			
											15-Jun-2017	10.180	9.530	10.100	0.080	0.064	9.466	43.354	N/M			
											15-Jul-2017	10.550	9.900	10.460	0.090	0.072	9.828	42.992	N/M			
											13-Aug-2017	10.867	10.217	10.776	0.091	0.073	10.144	42.676	N/M			
											15-Sep-2017	10.635	9.985	10.555	0.080	0.064	9.921	42.899	N/M			
											14-Oct-2017	10.602	9.952	10.512	0.090	0.072	9.880	42.940	N/M			Medium brown free phase.
											21-Nov-2017	10.816	10.166	10.795	0.021	0.017	10.149	42.671	N/M			
											17-Jan-2018	11.240	10.590	11.170	0.070	0.056	10.534	42.286	N/M			
											21-Mar-2018	11.859	11.209	11.770	0.089	0.071	11.138	41.682	N/M			
											07-Apr-2018	11.885	11.235	11.820	0.065	0.052	11.183	41.637	N/M			Golden brown free phase
											01-May-2018	11.965	11.315	11.911	0.054	0.043	11.272	41.548	N/M			
											24-Jun-2018	10.440	9.790	10.420	0.020	0.016	9.774	43.046	N/M			Medium brown free phase
											15-Jul-2018	10.349	9.699	10.320	0.029	0.023	9.676	43.144	N/M			
											17-Jul-2018	10.349	9.699	10.320	0.029	0.023	9.676	43.144	N/M			
											12-Aug-2018	10.670	10.020	10.640	0.030	0.024	9.996	42.824	N/M			
											17-Sep-2018	10.383	9.733	10.356	0.027	0.022	9.711	43.109	N/M			
											16-Oct-2018	10.590	9.940	10.580	0.010	0.008	9.932	42.888	N/M			
											27-Apr-2019	11.510	10.860	11.460	0.050	0.040	10.820	42.000	N/M			
											22-Jun-2019	10.368	9.718	10.327	0.041	0.033	9.685	43.135	N/M			F.P. Very light yellow to clear
											19-Jul-2019	11.060	10.410	11.018	0.042	0.034	10.376	42.444	0.64			Light brown LNAPL
											22-Jul-2019	11.235	10.585	11.190	0.045	0.036	10.549	42.271	N/M			
											24-Aug-2019	12.725	12.075	12.688	0.037	0.030	12.045	40.775	N/M			
											02-Oct-2019	11.839	11.189	11.796	0.043	0.034	11.155	41.665	N/M			
											10-Dec-2019	12.811	12.161	12.749	0.062	0.050	12.111	40.709	N/M			
NWR 03-43-20	**W-CAT-3**	600438.440	7241281.053	53.09	53.74	0.65	19.80	33.29	10.60 - 19.80	9.20 - 19.80	12-Mar-2016	13.06	12.41	N/A	N/A	N/A	12.41	40.68	N/M	>1.0E-05		
											05-Aug-2016	13.280	12.630	12.967	0.313	0.250	12.380	40.710	N/M			
											13-Aug-2016	13.513	12.863	13.197	0.316	0.253	12.610	40.480	N/M			
											13-Aug-2017	10.959	10.309	10.948	0.011	0.009	10.300	42.790	N/M			
											15-Jul-2018	10.578	9.928	10.551	0.027	0.022	9.906	43.184	N/M			
											22-Jun-2019	10.620	9.970	10.615	0.005	0.004	9.966	43.124	N/M			F.P. Foamy product H20 interface, light brown
											19-Jul-2019	11.184	10.534	11.179	0.005	0.004	10.530	42.560	0.61			Brown LNAPL
											22-Jul-2019	11.335	10.685	11.300	0.035	0.028	10.657	42.433	N/M			
											24-Aug-2019	13.375	12.725	12.664	0.711	0.569	12.156	40.934	N/M			
											02-Oct-2019	11.923	11.273	11.894	0.029	0.023	11.250	41.840	N/M			Dark amber product
NWR 09-2-26	**W-CAT-3**	600481.793	7241286.321	55.47	56.31	0.84	26.30	29.17	23.20 - 26.20	23.00 - 26.30	12-Mar-2016	12.54	11.70	N/A	N/A	N/A	11.70	43.77	N/M	7.02e-008	Clay/silty sandstone	
											05-Aug-2016	11.42	10.58	N/A	N/A	N/A	10.58	44.89	N/M			
											13-Aug-2016	12.81	11.97	N/A	N/A	N/A	11.97	43.50	N/M			
											02-Nov-2016	12.46	11.62	N/A	N/A	N/A	11.62	43.85	N/M			
											13-Aug-2017	10.83	9.99	N/A	N/A	N/A	9.99	45.48	N/M			
											20-Jul-2018	9.71	8.87	N/A	N/A	N/A	8.87	46.60	0.88			
											22-Jun-2019	11.72	10.88	N/A	N/A	N/A	10.88	44.59	N/M			
											15-Jul-2019	7.26	6.42	N/A	N/A	N/A	6.42	49.05	0.88			
											22-Jul-2019	9.48	8.64	N/A	N/A	N/A	8.64	46.83	N/M			
											24-Aug-2019	10.73	9.89	N/A	N/A	N/A	9.89	45.58	N/M			
											02-Oct-2019	10.97	10.13	N/A	N/A	N/A	10.13	45.34	N/M			
NWR 09-4-5	**W-CAT-3**	600430.188	7241255.748	45.89	46.16	0.27	4.50	41.39	1.50 - 4.50	1.10 - 4.50	12-Mar-2016	4.46	4.19	N/A	N/A	N/A	4.19	41.70	N/M	>1.0E-05	Siltstone bedrock	
											08-Jun-2016	2.35	2.08	N/A	N/A	N/A	2.08	43.81	N/M			
											05-Aug-2016	3.97	3.70	N/A	N/A	N/A	3.70	42.19	N/M			Too low in ground to lock. HCO/S
											13-Aug-2016	4.11	3.84	N/A	N/A	N/A	3.84	42.05	N/M			
											14-Mar-2017	4.59	4.32	N/A	N/A	N/A	4.32	41.57	N/M			
											11-Apr-2017	4.62	4.35	N/A	N/A	N/A	4.35	41.54	N/M			
											16-Jun-2017	2.22	1.95	N/A	N/A	N/A	1.95	43.94	N/M			
											15-Jul-2017	2.70	2.43	N/A	N/A	N/A	2.43	43.46	N/M			
											15-Aug-2017	3.05	2.78	N/A	N/A	N/A	2.78	43.11	N/M			
											19-Aug-2017	3.06	2.79	N/A	N/A	N/A	2.79	43.10	N/M	N/M		
											14-Sep-2017	2.87	2.60	N/A	N/A	N/A	2.60	43.29	N/M			
											14-Oct-2017	2.82	2.55	N/A	N/A	N/A	2.55	43.34	N/M			

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
NWR 09-4-5 (cont.)											21-Nov-2017	3.20	2.93	N/A	N/A	N/A	2.93	42.96	N/M			
											19-Dec-2017	3.46	3.19	N/A	N/A	N/A	3.19	42.70	N/M			
											17-Jan-2018	3.71	3.44	N/A	N/A	N/A	3.44	42.45	N/M			
											13-Feb-2018	3.94	3.67	N/A	N/A	N/A	3.67	42.22	N/M			
											20-Mar-2018	4.21	3.94	N/A	N/A	N/A	3.94	41.95	N/M			
											07-Apr-2018	4.25	3.98	N/A	N/A	N/A	3.98	41.91	N/M			
											01-May-2018	4.24	3.97	N/A	N/A	N/A	3.97	41.92	N/M			
											24-Jun-2018	2.81	2.54	N/A	N/A	N/A	2.54	43.35	N/M			
											17-Jul-2018	2.72	2.45	N/A	N/A	N/A	2.45	43.44	N/M			
											20-Jul-2018	2.90	2.63	N/A	N/A	N/A	2.63	43.26	0.22			
											12-Aug-2018	2.93	2.66	N/A	N/A	N/A	2.66	43.23	N/M			
											18-Sep-2018	2.70	2.43	N/A	N/A	N/A	2.43	43.46	N/M			
											16-Oct-2018	3.83	3.56	N/A	N/A	N/A	3.56	42.33	N/M			
											27-Apr-2019	4.16	3.89	N/A	N/A	N/A	3.89	42.00	N/M			
											22-Jun-2019	2.75	2.48	N/A	N/A	N/A	2.48	43.41	N/M			
											15-Jul-2019	3.08	2.81	N/A	N/A	N/A	2.81	43.08	N/M			
											22-Jul-2019	3.24	2.97	N/A	N/A	N/A	2.97	42.92	N/M			
											24-Aug-2019	3.77	3.50	N/A	N/A	N/A	3.50	42.39	N/M			
											02-Oct-2019	3.62	3.35	N/A	N/A	N/A	3.35	42.54	N/M			
											10-Dec-2019	4.47	4.20	N/A	N/A	N/A	4.20	41.69	N/M			
NWR 09-5-19	**W-CAT-3**	600573.424	7241254.632	55.88	56.65	0.77	20.30	35.58	17.30 - 20.30	17.00 - 20.50	12-Mar-2016	15.27	14.50	N/A	N/A	N/A	14.50	41.38	N/M	4.1e-008	Sandstone/claystone	
											05-Aug-2016	14.85	14.08	N/A	N/A	N/A	14.08	41.80	N/M			
											13-Aug-2016	15.03	14.26	N/A	N/A	N/A	14.26	41.62	N/M			
											13-Aug-2017	13.51	12.74	N/A	N/A	N/A	12.74	43.14	N/M			
											22-Jul-2018	13.29	12.52	N/A	N/A	N/A	12.52	43.36	0.76			
											22-Jun-2019	13.17	12.40	N/A	N/A	N/A	12.40	43.48	N/M			
											15-Jul-2019	13.53	12.76	N/A	N/A	N/A	12.76	43.12	N/M			
											22-Jul-2019	13.72	12.95	N/A	N/A	N/A	12.95	42.93	N/M			
											24-Aug-2019	14.80	14.03	N/A	N/A	N/A	14.03	41.85	N/M			
											02-Oct-2019	14.23	13.46	N/A	N/A	N/A	13.46	42.42	N/M			
NWR-OBS33	**W-CAT-3**	600415.260	7241331.800	57.03	57.74	0.71	16.20	40.83	10.10 - 16.20	8.70 - 16.20	12-Mar-2016	15.47	14.76	N/A	N/A	N/A	14.76	42.27	N/M	N/M	Siltstone/shale/sandstone	
											08-Jun-2016	13.68	12.97	N/A	N/A	N/A	12.97	44.06	N/M			
											13-Aug-2016	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Mud and/or bentonite in well
											02-Nov-2016	14.92	14.21	N/A	N/A	N/A	14.21	42.82	N/M			Frost-jacked well
											22-Jun-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Blocked at 1.64. Light brown soft
											22-Jul-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Blocked
											24-Aug-2019	14.70	13.99	N/A	N/A	N/A	13.99	43.04	N/M			
NWR-OBS34	**W-CAT-3**	N/M	N/M	56.93	57.80	0.87	18.90	38.03	9.70 - 18.90	8.80 - 18.90	12-Mar-2016	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M	N/M	Shale/siltstone/sandstone	Blocked @ 0.5
											08-Jun-2016	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Blocked @ 0.36
											13-Aug-2016	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Blocked @ 0.34
											22-Jun-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Blocked at surface. Light brown soft material
											22-Jul-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Blocked
											24-Aug-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Blocked
											02-Oct-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Blocked
NWR-OBS37	**W-CAT-3**	600419.140	7241310.400	56.01	56.58	0.57	15.90	40.37	11.30 - 15.90	11.30 - 15.90	12-Mar-2016	15.86	15.29	N/A	N/A	N/A	15.29	40.72	N/M	N/M	Sandstone/shale	
											13-Aug-2016	15.28	14.71	N/A	N/A	N/A	14.71	41.30	N/M			
											22-Jun-2019	12.736	12.166	12.730	0.006	0.005	12.161	43.851	N/M			
											22-Jul-2019	13.462	12.892	13.455	0.007	0.006	12.886	43.126	N/M			Clear amber product
											24-Aug-2019	14.760	14.190	14.755	0.005	0.004	14.186	41.826	N/M			
											02-Oct-2019	13.890	13.320	13.884	0.006	0.005	13.315	42.697	N/M			Light gold product
RB-OBS28	**W-CAT-3**	600490.000	7241263.400	51.38	52.22	0.84	15.90	35.63	6.70 - 15.90	4.00 - 15.90	13-Mar-2016	10.040	9.200	9.590	0.450	0.360	8.840	42.540	N/M	N/M	Shale/sandstone/siltstone	
											08-Jun-2016	8.38	7.54	N/A	N/A	N/A	7.54	43.84	N/M			
											13-Aug-2016	9.498	8.658	9.463	0.035	0.028	8.630	42.750	N/M			
											14-Mar-2017	9.640	8.800	9.578	0.062	0.050	8.750	42.630	N/M			Light brown product on probe.
											11-Apr-2017	9.810	8.970	9.670	0.140	0.112	8.858	42.522	N/M			
											15-Jun-2017	8.590	7.750	8.510	0.080	0.064	7.686	43.694	N/M			
											15-Jul-2017	8.830	7.990	8.760	0.070	0.056	7.934	43.446	N/M			
											19-Aug-2017	9.032	8.192	8.984	0.048	0.038	8.154	43.226	N/M			
											15-Sep-2017	5.805	4.965	5.760	0.045	0.036	4.929	46.451	N/M			
											14-Oct-2017	8.835	7.995	8.796	0.039	0.031	7.964	43.416	N/M			Light brown free phase.
											21-Nov-2017	9.016	8.176	9.007	0.009	0.007	8.169	43.211	N/M			
											17-Jan-2018	9.230	8.390	9.220	0.010	0.008	8.382	42.998	N/M			
											13-Feb-2018	9.320	8.480	9.300	0.020	0.016	8.464	42.916	N/M			
											21-Mar-2018	9.581	8.741	9.561	0.020	0.016	8.725	42.655	N/M			
											07-Apr-2018	9.670	8.830	9.590	0.080	0.064	8.766	42.614	N/M			
											01-May-2018	9.863	9.023	9.512	0.351	0.281	8.742	42.638	N/M			Honey brown free phase

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
RB-OBS28 (cont.)											24-Jun-2018	8.890	8.050	8.800	0.090	0.072	7.978	43.402	N/M			Light brown free phase
											17-Jul-2018	8.761	7.921	8.653	0.108	0.086	7.835	43.545	N/M			
											12-Aug-2018	8.770	7.930	8.750	0.020	0.016	7.914	43.466	N/M			
											17-Sep-2018	8.531	7.691	8.514	0.017	0.014	7.677	43.703	N/M			
											16-Oct-2018	8.720	7.880	8.680	0.040	0.032	7.848	43.532	N/M			
											27-Apr-2019	9.480	8.640	9.460	0.020	0.016	8.624	42.756	N/M			
											22-Jun-2019	8.734	7.894	8.702	0.032	0.026	7.868	43.512	N/M			F.P. Clear to light gold
											22-Jul-2019	9.050	8.210	9.020	0.030	0.024	8.186	43.194	N/M			
											24-Aug-2019	10.181	9.341	10.137	0.044	0.035	9.306	42.074	N/M			Black sludge, black globules
											02-Oct-2019	9.185	8.345	9.123	0.062	0.050	8.295	43.085	N/M			very light to clear product
RB-OBS29	W-CAT-3	600494.190	7241259.500	51.40	51.97	0.58	8.30	43.10	5.30 - 8.30	1.40 - 8.30	12-Mar-2016	8.85	8.28	N/A	N/A	N/A	8.28	43.12	N/M	N/M	Sandy silt/siltstone	
											08-Jun-2016	8.28	7.71	N/A	N/A	N/A	7.71	43.69	N/M			
											13-Aug-2016	8.86	8.28	N/A	N/A	N/A	8.28	43.11	N/M			
											22-Jun-2019	8.51	7.94	N/A	N/A	N/A	7.94	43.46	N/M			
											22-Jul-2019	8.76	8.19	N/A	N/A	N/A	8.19	43.21	N/M			
											24-Aug-2019	> 8.83	> 8.26	N/A	N/A	N/A	> 8.26	< 43.14	N/M			Dry
											02-Oct-2019	8.77	8.20	N/A	N/A	N/A	8.20	43.20	N/M			
RB-OBS30	W-CAT-3	600496.180	7241270.400	54.80	55.53	0.73	7.90	47.09	4.90 - 7.90	4.30 - 7.90	12-Mar-2016	> 9.01	> 8.28	N/A	N/A	N/A	> 8.28	< 46.52	N/M	N/M	Silty sand/siltstone	Dry
											13-Aug-2016	> 8.63	> 7.90	N/A	N/A	N/A	> 7.90	< 46.90	N/M			Dry
											22-Jun-2019	> 8.50	> 7.77	N/A	N/A	N/A	> 7.77	< 47.03	N/M			Dry
											22-Jul-2019	> 8.48	> 7.75	N/A	N/A	N/A	> 7.75	< 47.05	N/M			Dry @ 8.48
											24-Aug-2019	> 8.20	> 7.47	N/A	N/A	N/A	> 7.47	< 47.33	N/M			Dry
											02-Oct-2019	> 8.20	> 7.47	N/A	N/A	N/A	> 7.47	< 47.33	N/M			Dry
RB-OBS32	W-CAT-3	600523.380	7241241.200	49.55	50.15	0.60	7.32	42.13	4.20 - 7.30	4.00 - 7.32	13-Mar-2016	> 7.92	> 7.32	N/A	N/A	N/A	> 7.32	< 42.23	N/M	N/M	Siltstone	Dry
											08-Jun-2016	> 7.92	> 7.32	N/A	N/A	N/A	> 7.32	< 42.23	N/M			Dry, blocked
											13-Aug-2016	> 7.92	> 7.32	N/A	N/A	N/A	> 7.32	< 42.23	N/M			Dry, blocked
											02-Nov-2016	> 6.12	> 5.52	N/A	N/A	N/A	> 5.52	< 44.03	N/M			Dry
											22-Jun-2019	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M			Blocked at 6.10. Globules of light brown HC on probe
											22-Jul-2019	7.28	6.68	N/A	N/A	N/A	6.68	42.87	N/M			
											24-Aug-2019	7.410	6.810	7.950	-0.540	-0.432	7.242	42.308	N/M			
											02-Oct-2019	7.51	6.91	N/A	N/A	N/A	6.91	42.64	N/M			
RB-OBS35	W-CAT-3	600492.080	7241257.300	51.05	51.82	0.77	16.20	35.04	2.40 - 16.20	1.50 - 16.20	12-Mar-2016	10.760	9.986	10.630	0.130	0.104	9.882	41.168	N/M	N/M	Sandy silt/siltstone/sandstone	
											08-Jun-2016	8.122	7.348	8.091	0.031	0.025	7.323	43.727	N/M			
											13-Aug-2016	10.80	10.02	N/A	N/A	N/A	10.02	41.02	N/M			Temporary piping extracting from well. WL taken 2 hours after removing stinger from well
											14-Mar-2017	9.703	8.929	9.683	0.020	0.016	8.913	42.137	N/M			Light brown free phase on probe.
											11-Apr-2017	9.900	9.126	9.850	0.050	0.040	9.086	41.964	N/M			
											15-Jun-2017	7.870	7.096	7.810	0.060	0.048	7.048	44.002	N/M			
											15-Jul-2017	8.250	7.476	8.150	0.100	0.080	7.396	43.654	N/M			
											19-Aug-2017	8.595	7.821	8.545	0.050	0.040	7.781	43.269	N/M			
											15-Sep-2017	8.300	7.526	8.265	0.035	0.028	7.498	43.552	N/M			
											14-Oct-2017	8.252	7.478	8.218	0.034	0.027	7.451	43.599	N/M			Light brown free phase.
											21-Nov-2017	8.485	7.711	8.470	0.015	0.012	7.699	43.351	N/M			
											17-Jan-2018	8.860	8.086	8.810	0.050	0.040	8.046	43.004	N/M			
											13-Feb-2018	9.120	8.346	9.070	0.050	0.040	8.306	42.744	N/M			
											21-Mar-2018	9.645	8.871	9.450	0.195	0.156	8.715	42.335	N/M			
											07-Apr-2018	9.575	8.801	9.480	0.095	0.076	8.725	42.325	N/M			
											01-May-2018	9.604	8.830	9.567	0.037	0.030	8.800	42.250	N/M			Honey brown free phase
											24-Jun-2018	8.090	7.316	8.070	0.020	0.016	7.300	43.750	N/M			Light brown free phase
											17-Jul-2018	7.998	7.224	7.976	0.022	0.018	7.206	43.844	N/M			
											12-Aug-2018	8.290	7.516	8.310	-0.020	-0.016	7.532	43.518	N/M			
											17-Sep-2018	8.036	7.262	8.023	0.013	0.010	7.252	43.798	N/M			
											16-Oct-2018	8.260	7.486	8.240	0.020	0.016	7.470	43.580	N/M			
											27-Apr-2019	9.160	8.386	9.140	0.020	0.016	8.370	42.680	N/M			
											22-Jun-2019	7.800	7.026	7.795	0.005	0.004	7.022	44.028	N/M			F.P. Light brown golden
											22-Jul-2019	8.765	7.991	8.739	0.026	0.021	7.970	43.080	N/M			
											24-Aug-2019	10.505	9.731	10.284	0.221	0.177	9.554	41.496	N/M			
											02-Oct-2019	9.511	8.737	9.485	0.026	0.021	8.716	42.334	N/M			Amber gold product
RB-OBS36	W-CAT-3	600506.020	7241253.800	51.07	51.69	0.62	16.00	35.20	3.80 - 16.00	2.40 - 16.00	15-Mar-2016	10.520	9.904	10.470	0.050	0.040	9.864	41.206	N/M	N/M	Sandy silt/siltstone/sandstone	
											08-Jun-2016	8.01	7.39	N/A	N/A	N/A	7.39	43.68	N/M			
											13-Aug-2016	10.57	9.96	N/A	N/A	N/A	9.96	41.12	N/M			
											14-Mar-2017	9.646	9.030	9.644	0.002	0.002	9.028	42.042	N/M			Medium brown free phase on probe.
											11-Apr-2017	10.010	9.394	9.830	0.180	0.144	9.250	41.820	N/M			
											15-Jun-2017	7.780	7.164	7.750	0.030	0.024	7.140	43.930	N/M			
											15-Jul-2017	8.120	7.504	8.100	0.020	0.016	7.488	43.582	N/M			
											19-Aug-2017	8.515	7.899	8.505	0.010	0.008	7.891	43.179	N/M			
											15-Sep-2017	8.277	7.661	8.272	0.005	0.004	7.657	43.413	N/M			

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
RB-OBS36 (cont.)											14-Oct-2017	8.257	7.641	8.255	0.002	0.002	7.639	43.431	N/M			Light brown free phase.
											21-Nov-2017	8.523	7.907	8.520	0.003	0.002	7.905	43.165	N/M			
											17-Jan-2018	8.85	8.23	N/A	N/A	N/A	8.23	42.84	N/M			Trace LNAPL
											13-Feb-2018	9.08	8.46	N/A	N/A	N/A	8.46	42.61	N/M			Trace LNAPL
											21-Mar-2018	9.450	8.834	9.445	0.005	0.004	8.830	42.240	N/M			
											07-Apr-2018	9.500	8.884	9.480	0.020	0.016	8.868	42.202	N/M			
											01-May-2018	9.558	8.942	9.557	0.001	0.001	8.941	42.129	N/M			Medium brown free phase
											24-Jun-2018	8.09	7.47	N/A	N/A	N/A	7.47	43.60	N/M			
											17-Jul-2018	8.01	7.39	N/A	N/A	N/A	7.39	43.68	N/M			
											12-Aug-2018	8.32	7.70	N/A	N/A	N/A	7.70	43.37	N/M			Trace LNAPL
											17-Sep-2018	8.11	7.50	N/A	N/A	N/A	7.50	43.58	N/M			
											16-Oct-2018	8.31	7.69	N/A	N/A	N/A	7.69	43.38	N/M			
											27-Apr-2019	9.03	8.41	N/A	N/A	N/A	8.41	42.66	N/M			
											22-Jun-2019	8.02	7.40	N/A	N/A	N/A	7.40	43.67	N/M			
											22-Jul-2019	8.69	8.07	N/A	N/A	N/A	8.07	43.00	N/M			
											24-Aug-2019	10.15	9.53	N/A	N/A	N/A	9.53	41.54	N/M			
											02-Oct-2019	9.37	8.75	N/A	N/A	N/A	8.75	42.32	N/M			
											10-Dec-2019	10.230	9.614	10.229	0.001	0.001	9.613	41.457	N/M			
RB-OBS38	W-CAT-3	600502.620	7241267.800	54.82	55.37	0.55	19.40	35.57	13.30 - 19.40	1.80 - 19.40	12-Mar-2016	14.00	13.45	N/A	N/A	N/A	13.45	41.37	N/M	N/M	Sandstone/siltstone	
											13-Aug-2016	14.29	13.74	N/A	N/A	N/A	13.74	41.08	N/M			
											22-Jun-2019	11.644	11.092	11.563	0.081	0.065	11.027	43.793	N/M			F.P. clear
											22-Jul-2019	12.350	11.798	12.266	0.084	0.067	11.731	43.089	N/M			Clear product
											24-Aug-2019	13.914	13.362	13.830	0.084	0.067	13.295	41.525	N/M			Golden hc
											02-Oct-2019	13.010	12.458	12.960	0.050	0.040	12.418	42.402	N/M			Amber gold
											10-Dec-2019	9.470	8.918	9.395	0.075	0.060	8.858	45.962	N/M			
RB-OBS39	W-CAT-3	600508.190	7241253.481	50.99	51.47	0.48	19.46	31.53	5.00 - 19.40	4.20 - 19.46	12-Mar-2016	10.670	10.193	10.640	0.030	0.024	10.169	40.821	N/M	N/M	Shale	
											08-Jun-2016	8.068	7.591	8.060	0.008	0.006	7.585	43.405	N/M			
											13-Aug-2016	10.91	10.43	N/A	N/A	N/A	10.43	40.56	N/M			Temporary piping extracting from well. WL taken 2 hours after removing stinger hose
											22-Jun-2019	7.986	7.509	7.970	0.016	0.013	7.496	43.494	N/M			F.P. clear to light gold
											22-Jul-2019	8.700	8.223	8.664	0.036	0.029	8.194	42.796	N/M			Golden Product
											24-Aug-2019	10.47	9.99	N/A	N/A	N/A	9.99	41.00	N/M			
											02-Oct-2019	9.60	9.12	N/A	N/A	N/A	9.12	41.87	N/M			
RB-RW-1	W-CAT-3	600519.502	7241244.284	50.66	51.33	0.67	18.80	31.86	5.00 - 18.80	5.00 - 18.80	22-Jun-2019	7.500	6.832	7.490	0.010	0.008	6.824	43.836	N/M	N/M	Siltstone/shale	FP light brown
											22-Jul-2019	8.260	7.592	8.230	0.030	0.024	7.568	43.092	N/M			
											02-Oct-2019	10.132	9.464	10.110	0.022	0.018	9.446	41.214	N/M			Light gold
RB-RW-2	W-CAT-3	600491.409	7241260.773	51.26	51.88	0.62	18.15	33.11	4.40 - 18.20	4.35 - 15.34	22-Jun-2019	8.189	7.569	8.028	0.161	0.129	7.440	43.820	N/M	N/M	Siltstone/sandstone	FP golden light brown
											22-Jul-2019	8.930	8.310	8.770	0.160	0.128	8.182	43.078	N/M			
											24-Aug-2019	10.915	10.295	10.770	0.145	0.116	10.179	41.081	N/M			
											02-Oct-2019	8.995	8.375	8.445	0.550	0.440	7.935	43.325	N/M			
RB-RW-7	W-CAT-3	600449.825	7241255.760	49.18	49.92	0.74	18.32	30.86	5.80 - 18.00	5.80 - 18.00	22-Jun-2019	7.375	6.635	7.318	0.057	0.046	6.589	42.591	N/M	N/M	Siltstone	FP- Black/ dark brown
											22-Jul-2019	8.730	7.990	8.632	0.098	0.078	7.912	41.268	N/M			Brown amber product on probe
											24-Aug-2019	10.300	9.560	10.225	0.075	0.060	9.500	39.680	N/M			Brown HC
											02-Oct-2019	3.770	3.030	9.255	-5.485	-4.388	7.418	41.762	N/M			
RB-RW-10	W-CAT-3	600452.069	7241255.348	49.27	49.92	0.65	11.39	37.88	1.80 - 11.10	1.80 - 11.10	08-Jun-2016	5.52	4.87	N/A	N/A	N/A	4.87	44.40	N/M	N/M	Siltstone	
											13-Aug-2016	6.96	6.31	N/A	N/A	N/A	6.31	42.96	N/M			
											22-Jun-2019	5.83	5.18	N/A	N/A	N/A	5.18	44.09	N/M			
											22-Jul-2019	5.85	5.20	N/A	N/A	N/A	5.20	44.07	N/M			
											24-Aug-2019	7.15	6.50	N/A	N/A	N/A	6.50	42.77	N/M			
											02-Oct-2019	6.75	6.10	N/A	N/A	N/A	6.10	43.17	N/M			
RB-RW-11	W-CAT-3	600476.103	7241251.800	50.00	50.56	0.56	14.96	35.04	2.10 - 14.30	2.10 - 14.30	13-Aug-2016	7.12	6.56	N/A	N/A	N/A	6.56	43.44	N/M	N/M	Silty clay/siltstone	
											22-Jun-2019	5.75	5.19	N/A	N/A	N/A	5.19	44.81	N/M			
											22-Jul-2019	4.65	4.09	N/A	N/A	N/A	4.09	45.91	N/M			
											24-Aug-2019	7.15	6.59	N/A	N/A	N/A	6.59	43.41	N/M			
											02-Oct-2019	6.64	6.08	N/A	N/A	N/A	6.08	43.92	N/M			
RB-RW-14	W-CAT-3	600495.770	7241252.098	50.97	51.64	0.67	15.05	35.92	2.40 - 14.60	2.40 - 14.60	08-Jun-2016	6.630	5.960	6.610	0.020	0.016	5.944	45.026	N/M	N/M	Silty clay/siltstone	
											13-Aug-2016	8.53	7.86	N/A	N/A	N/A	7.86	43.11	N/M			
											22-Jun-2019	6.645	5.975	6.620	0.025	0.020	5.955	45.015	N/M			FP-gold
											22-Jul-2019	6.40	5.73	N/A	N/A	N/A	5.73	45.24	N/M			
											24-Aug-2019	7.49	6.82	N/A	N/A	N/A	6.82	44.15	N/M			Drop hose full
											02-Oct-2019	7.98	7.31	N/A	N/A	N/A	7.31	43.66	N/M			

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Table 2

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
Cemetery Sump - Surficial Sediment																						
CEM 08-2-5	**W-CAT-1**	598350.249	7241810.575	59.37	60.05	0.68	5.20	54.17	2.20 - 5.20	1.80 - 5.20	03-Aug-2016	5.75	5.07	N/A	N/A	N/A	5.07	54.30	N/M	1.00E-06	Sandy clay	
											17-Aug-2017	> 6.16	> 5.48	N/A	N/A	N/A	> 5.48	< 53.89	N/M			Dry
											13-Jul-2018	> 6.23	> 5.55	N/A	N/A	N/A	> 5.55	< 53.82	0.68			Dry
											05-Jul-2019	> 6.22	> 5.54	N/A	N/A	N/A	> 5.54	< 53.83	0.66			Dry
CEM 08-4-5	**W-CAT-1**	598383.529	7241797.726	59.08	59.24	0.16	5.30	53.78	2.30 - 5.30	1.90 - 5.30	03-Aug-2016	4.88	4.72	N/A	N/A	N/A	4.72	54.36	N/M	1.80E-06	Clayey sand/silty clay/bedrock	
											17-Aug-2017	> 5.25	> 5.09	N/A	N/A	N/A	> 5.09	< 53.99	N/M			Dry
											13-Jul-2018	> 5.31	> 5.15	N/A	N/A	N/A	> 5.15	< 53.93	0.89			Dry
											05-Jul-2019	> 5.32	> 5.13	N/A	N/A	N/A	> 5.16	< 53.92	0.87			Dry
CEM 09-1-4	**W-CAT-1**	598360.264	7241773.840	58.00	58.66	0.66	4.50	53.50	0.70 - 4.50	0.40 - 4.50	03-Aug-2016	> 5.05	> 4.39	N/A	N/A	N/A	> 4.39	< 53.61	N/M	1.18E-06	Silt and clay/silty clay/sandy silt	Dry at 5.05 mbtoc
											17-Aug-2017	> 5.06	> 4.40	N/A	N/A	N/A	> 4.40	< 53.60	N/M			Dry
											13-Jul-2018	> 5.12	> 4.46	N/A	N/A	N/A	> 4.46	< 53.54	0.70			Dry
											05-Jul-2019	> 5.12	> 4.46	N/A	N/A	N/A	> 4.46	< 53.54	0.68			Dry
CEM 09-3-2	**W-CAT-1**	598354.454	7241860.868	59.25	60.00	0.75	2.20	57.05	0.70 - 2.20	0.50 - 2.50	03-Aug-2016	2.24	1.49	N/A	N/A	N/A	1.49	57.76	N/M	4.48E-07	Silt/loam/clayey silt	
											17-Aug-2017	2.86	2.11	N/A	N/A	N/A	2.11	57.14	N/M			Dry
											13-Jul-2018	2.86	2.11	N/A	N/A	N/A	2.11	57.14	0.70			insufficient water for sampling
											05-Jul-2019	> 2.85	> 2.10	N/A	N/A	N/A	> 2.10	< 57.15	0.76			Dry
CEM-13-1-2	**W-CAT-1**	598348.316	7241889.036	57.93	58.91	0.98	2.40	55.53	0.90 - 2.40	0.60 - 2.70	03-Aug-2016	N/M	N/M	N/A	N/A	N/A	N/A	N/A	N/M	N/M	Clay	Block at 1.44 mbtoc
											13-Jul-2018	> 3.38	> 2.40	N/A	N/A	N/A	> 2.40	< 55.53	N/M			Dry, well lying on ground
											05-Jul-2019	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M			Destroyed
Mainland West - C-27X Sump - Surficial Sediment																						
C27-16-1-3	**W-CAT-1**	N/M	N/M	N/M	N/M	N/A	2.6	N/A	1.10 - 2.60	1.00 - 2.60	03-Aug-2016	> 3.65	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Silty clay	Dry at 3.65 mbtoc
											15-Aug-2017	> 3.67	N/A	N/M	N/A	N/A	N/A	N/A	N/M			Dry
											13-Jul-2018	> 3.72	> 2.62[¥]	N/M	N/A	N/A	> 2.62[¥]	N/A	1.10			Dry
											11-Jul-2019	> 3.70	> 2.60[¥]	N/M	N/A	N/A	> 2.60[¥]	N/A	N/M			Dry
C27-16-2-3	**W-CAT-1**	N/M	N/M	N/M	N/M	N/A	3.1	N/A	1.60 - 3.10	1.50 - 3.20	03-Aug-2016	1.42	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Sandy clay	
											15-Aug-2017	1.88	N/A	N/M	N/A	N/A	N/A	N/A	N/M			
											13-Jul-2018	1.61	0.53[¥]	N/M	N/A	N/A	0.53[¥]	N/A	1.08			Locked with string. Frost jacked, cannot close lid
											11-Jul-2019	1.58	0.50[¥]	N/M	N/A	N/A	0.50[¥]	N/A	N/M			
C27-16-3-4	**W-CAT-1**	N/M	N/M	N/M	N/M	N/A	4.3	N/A	2.75 - 4.26	2.50 - 4.26	03-Aug-2016	> 5.03	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Silty clay	Dry at 5.03 mbtoc
											13-Aug-2017	> 5.05	N/A	N/M	N/A	N/A	N/A	N/A	N/M			Dry
											13-Jul-2018	> 4.10	> 3.06[¥]	N/M	N/A	N/A	> 3.06[¥]	N/A	1.04			Dry
											11-Jul-2019	> 5.10	> 4.06[¥]	N/M	N/A	N/A	> 4.06[¥]	N/A	N/M			Dry
C27-16-4-3	**W-CAT-1**	N/M	N/M	N/M	N/M	N/A	3.3	N/A	1.76 - 3.26	1.20 - 3.26	03-Aug-2016	1.24	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Clayey silt	
											13-Aug-2017	2.08	N/A	N/M	N/A	N/A	N/A	N/A	N/M			
											13-Jul-2018	1.65	0.40[¥]	N/M	N/A	N/A	0.40[¥]	N/A	1.25			
											11-Jul-2019	1.85	0.60[¥]	N/M	N/A	N/A	0.60[¥]	N/A	N/M			
Mainland Sumps - Surficial Sediment																						
MLS 09-1-3	**W-CAT-1**	600486.140	7242673.987	65.21	66.09	0.88	2.45	62.76	0.95 - 2.45	0.70 - 3.00	03-Aug-2016	2.08	1.20	N/M	N/A	N/A	1.20	64.01	N/M	2.70E-06	Silty clay/silt	
											16-Aug-2017	2.35	1.47	N/M	N/A	N/A	1.47	63.74	N/M			
											19-Jul-2018	2.17	1.29	N/M	N/A	N/A	1.29	63.92	1.24			
											18-Jul-2019	2.22	1.34	N/M	N/A	N/A	1.34	63.87	N/M			
MLS 09-2-3	**W-CAT-1**	600424.914	7242686.285	65.08	65.92	0.84	2.70	62.38	1.20 - 2.70	1.00 - 2.90	03-Aug-2016	2.29	1.45	N/M	N/A	N/A	1.45	63.63	N/M	5.28E-07	Silty clay	Stickup 1.5cm
											16-Aug-2017	2.12	1.28	N/M	N/A	N/A	1.28	63.80	N/M			Frost jacked, can't lock
											19-Jul-2018	1.18	0.34	N/M	N/A	N/A	0.34	64.74	1.51			
											18-Jul-2019	2.16	1.32	N/M	N/A	N/A	1.32	63.76	1.97			
MLS 09-5-3	**W-CAT-1**	600441.544	7242471.837	65.92	66.76	0.84	2.60	63.32	1.10 - 2.60	0.90 - 2.95	03-Aug-2016	1.75	0.91	N/M	N/A	N/A	0.91	65.01	N/M	7.10E-06	Silty clay and sand/silty clay	
											16-Aug-2017	2.44	1.60	N/M	N/A	N/A	1.60	64.32	N/M			
											19-Jul-2018	1.69	0.85	N/M	N/A	N/A	0.85	65.07	0.60			
											18-Jul-2019	1.51	0.67	N/M	N/A	N/A	0.67	65.25	0.63			
MLS 09-15-3	**W-CAT-1**	600357.970	7242582.492	66.30	67.21	0.91	2.50	63.80	1.00 - 2.50	0.80 - 2.80	03-Aug-2016	2.44	1.53	N/M	N/A	N/A	1.53	64.77	N/M	4.80E-07	Fill/silty clay	
											16-Aug-2017	3.06	2.15	N/M	N/A	N/A	2.15	64.15	N/M			
											19-Jul-2018	N/M	N/M	N/M	N/A	N/A	N/A	N/A	N/M			Casing frost jacked
											18-Jul-2019	2.36	1.45	N/M	N/A	N/A	1.45	64.85	0.77			
MLS-13-2-3	**W-CAT-1**	600662.728	7242321.656	65.12	66.03	0.90	2.70	62.42	1.20 - 2.70	0.90 - 3.00	03-Aug-2016	1.91	1.01	N/M	N/A	N/A	1.01	64.12	N/M	N/M	Clay Till/Siltstone	Installed dedicated bailer.
											16-Aug-2017	2.71	1.81	N/M	N/A	N/A	1.81	63.32	N/M			
											19-Jul-2018	1.68	0.78	N/M	N/A	N/A	0.78	64.35	0.82			
											18-Jul-2019	1.22	0.32	N/M	N/A	N/A	0.32	64.81	0.81			

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Table 2

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
MLS-14-5-4	**W-CAT-1**	600627.180	7242652.650	64.75	65.63	0.88	3.80	60.95	2.30 - 3.80	2.30 - 3.80	03-Aug-2016	1.25	0.37	N/M	N/A	N/A	0.37	64.38	N/M	N/M	Sand/Clayey Silt	Hydrasleeve used
											16-Aug-2017	1.44	0.56	N/M	N/A	N/A	0.56	64.19	N/M			
											19-Jul-2018	1.36	0.48	N/M	N/A	N/A	0.48	64.27	1.36			No protective casing
											18-Jul-2019	1.64	0.76	N/M	N/A	N/A	0.76	63.99	1.55			
Mainland Sumps - Bedrock																						
MLS 02-5-8	**W-CAT-3**	600532.941	7242368.381	65.70	66.40	0.70	8.00	57.70	6.00 - 8.00	5.00 - 10.00	03-Aug-2016	2.26	1.56	N/M	N/A	N/A	1.56	64.14	N/M	2.10E-06	Shale	
											16-Aug-2017	2.30	1.60	N/M	N/A	N/A	1.60	64.10	N/M			Frost jacked
											19-Jul-2018	2.42	1.72	N/M	N/A	N/A	1.72	63.98	1.25			Well kinked at 3.7 mbgs
											15-Jul-2019	2.48	1.78	N/M	N/A	N/A	1.78	63.92	1.27			
MLS-10-1-7	**W-CAT-3**	600271.991	7242501.601	65.17	65.98	0.81	7.02	58.15	4.02 - 7.02	3.70 - 7.02	04-Aug-2016	1.10	0.29	N/M	N/A	N/A	0.29	64.88	N/M	1.40E-06	Siltstone	Dedicated bailer, used new lock
											16-Aug-2017	1.80	0.99	N/M	N/A	N/A	0.99	64.18	N/M			
											19-Jul-2018	1.43	0.62	N/M	N/A	N/A	0.62	64.55	0.72			
											15-Jul-2019	1.41	0.60	N/M	N/A	N/A	0.60	64.57	N/M			
Mainland Drilling Sump - Surficial Sediment																						
MLS-13-1-3	**W-CAT-3**	600245.483	7242212.730	64.56	65.51	0.95	2.80	61.76	1.30 - 2.80	1.00 - 3.10	04-Aug-2016	1.61	0.66	N/M	N/A	N/A	0.66	63.90	N/M	5.40E-08	Silty clay/clay sand/silty clay till/siltstone	
											16-Aug-2017	1.67	0.72	N/M	N/A	N/A	0.72	63.84	N/M			Frost jacked, cut PVC approx. 0.03m
											19-Jul-2018	1.59	0.64	N/M	N/A	N/A	0.64	63.92	1.05			Frost jacked, casing locked with rope
											13-Jul-2019	1.70	0.75	N/M	N/A	N/A	0.75	63.81	1.15			
Mainland Drilling Sump - Bedrock																						
MLS 08-1-4	**W-CAT-3**	600199.412	7242322.109	64.87	65.63	0.76	3.70	61.17	2.20 - 3.70	1.80 - 3.70	04-Aug-2016	1.65	0.89	N/M	N/A	N/A	0.89	63.98	N/M	1.10E-06	Siltstone	
											16-Aug-2017	2.37	1.61	N/M	N/A	N/A	1.61	63.26	N/M			
											21-Jul-2018	2.04	1.28	N/M	N/A	N/A	1.28	63.59	0.90			Sulfur odour
											13-Jul-2019	2.21	1.45	N/M	N/A	N/A	1.45	63.42	0.89			
MLS 08-2-5	**W-CAT-3**	600254.501	7242353.778	65.32	66.12	0.80	5.20	60.12	3.80 - 5.20	3.50 - 5.20	04-Aug-2016	1.62	0.82	N/M	N/A	N/A	0.82	64.50	N/M	1.70E-05	Siltstone	
											16-Aug-2017	2.08	1.28	N/M	N/A	N/A	1.28	64.04	N/M			Well compromised. Bentonite on HS.
											21-Jul-2018	1.74	0.94	N/M	N/A	N/A	0.94	64.38	0.92			Well comprimised, bentonite in well at 1.5mbtoc., can't access with hydrasleeve or bailer
											13-Jul-2019	> 6.00	> 5.20	N/M	N/A	N/A	> 5.20	< 60.12	0.93			Dry, Obstructed at 1.65 mbtoc
MLS 08-3-4	**W-CAT-3**	600276.342	7242296.774	64.86	65.53	0.67	3.60	61.26	2.10 - 3.60	1.80 - 3.60	04-Aug-2016	1.59	0.92	N/M	N/A	N/A	0.92	63.94	N/M	8.81E-07	Siltstone	
											16-Aug-2017	2.37	1.70	N/M	N/A	N/A	1.70	63.16	N/M			Well silted up
											19-Jul-2018	1.92	1.25	N/M	N/A	N/A	1.25	63.61	0.67			
											13-Jul-2019	2.03	1.36	N/M	N/A	N/A	1.36	63.50	0.69			
Well Services Sump - Surficial Sediment																						
MLS 09-9-2	**W-CAT-3**	600375.294	7242332.809	65.10	65.92	0.82	2.50	62.60	N/A	0.80 - 2.30	04-Aug-2016	1.87	1.05	N/M	N/A	N/A	1.05	64.05	N/M	3.4e-006	Sandy silt/silty clay	
											16-Aug-2017	1.97	1.15	N/M	N/A	N/A	1.15	63.95	N/M			
											19-Jul-2018	2.13	1.31	N/M	N/A	N/A	1.31	63.79	N/M			
											14-Jul-2019	2.30	1.48	N/M	N/A	N/A	1.48	63.62	1.46			
MLS-13-3-3	**W-CAT-3**	600388.870	7242248.362	64.17	65.19	1.02	2.40	61.77	0.90 - 2.40	0.60 - 2.55	05-Aug-2016	1.10	0.08	N/M	N/A	N/A	0.08	64.09	N/M	1.70E-07	Clay	
											16-Aug-2017	1.30	0.28	N/M	N/A	N/A	0.28	63.89	N/M			Cut PVC approx. 0.06m
											19-Jul-2018	1.40	0.38	N/M	N/A	N/A	0.38	63.79	1.29			
											14-Jul-2019	1.63	0.61	N/M	N/A	N/A	0.61	63.56	1.27			
MLS-13-4-3	**W-CAT-3**	600500.275	7242199.012	64.28	65.25	0.97	2.70	61.58	1.20 - 2.70	0.90 - 3.00	05-Aug-2016	1.19	0.22	N/M	N/A	N/A	0.22	64.06	N/M	6.90E-07	Clay / Siltstone	
											16-Aug-2017	1.28	0.31	N/M	N/A	N/A	0.31	63.97	N/M			Cut PVC approx. 0.08m
											19-Jul-2018	1.26	0.29	N/M	N/A	N/A	0.29	63.99	1.22			
											14-Jul-2019	1.41	0.44	N/M	N/A	N/A	0.44	63.84	1.32			Dry, Frost-jacked
Well Services Sump - Bedrock																						
MLS 02-7-7	**W-CAT-3**	600455.509	7242256.673	64.92	65.62	0.70	7.10	57.82	N/A	3.00 - 7.60	04-Aug-2016	1.32	0.62	N/M	N/A	N/A	0.62	64.30	N/M	1.3e-006	Shale	
											16-Aug-2017	1.55	0.85	N/M	N/A	N/A	0.85	64.07	N/M			Kink in PVC, silt on probe, bentonite on waterra
											19-Jul-2018	1.50	0.80	N/M	N/A	N/A	0.80	64.12	0.49			
											14-Jul-2019	1.74	1.04	N/M	N/A	N/A	1.04	63.88	0.43			
MLS 02-8-8	**W-CAT-3**	600424.575	7242268.176	64.62	65.27	0.65	8.00	56.62	N/A	3.20 - 8.30	04-Aug-2016	1.62	0.97	N/M	N/A	N/A	0.97	63.65	N/M	4.4e-007	Shale	
											16-Aug-2017	1.98	1.33	N/M	N/A	N/A	1.33	63.29	N/M			
											19-Jul-2018	2.15	1.50	N/M	N/A	N/A	1.50	63.12	1.32			
											14-Jul-2019	2.25	1.60	N/M	N/A	N/A	1.60	63.02	1.25			Severely frost-jacked. Partially frozen.
MLS 02-9-8	**W-CAT-3**	600388.797	7242286.342	65.07	65.87	0.80	8.30	56.77	N/A	5.00 - 9.10	04-Aug-2016	2.09	1.29	N/M	N/A	N/A	1.29	63.78	N/M	7.5e-009	Rafted shale	
											16-Aug-2017	2.52	1.72	N/M	N/A	N/A	1.72	63.35	N/M			
											19-Jul-2018	2.41	1.61	N/M	N/A	N/A	1.61	63.46	1.55			
											14-Jul-2019	2.55	1.75	N/M	N/A	N/A	1.75	63.32	1.52			Severely frost-jacked.

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
MLS 02-10-8	W-CAT-3	600393.142	7242316.570	65.23	65.93	0.70	9.10	56.13	N/A	5.00 - 9.10	04-Aug-2016	1.08	0.38	N/M	N/A	N/A	0.38	64.85	N/M	5.5e-008	Shale	
											16-Aug-2017	2.25	1.55	N/M	N/A	N/A	1.55	63.68	N/M			
											19-Jul-2018	2.13	1.43	N/M	N/A	N/A	1.43	63.80	1.10			
											14-Jul-2019	2.27	1.57	N/M	N/A	N/A	1.57	63.66	1.09			
MLS-10-2-3	W-CAT-3	600459.515	7242329.339	65.50	66.27	0.77	2.55	62.95	1.05 - 2.55	0.85 - 2.55	04-Aug-2016	1.93	1.16	N/M	N/A	N/A	1.16	64.34	N/M	9.892e-007	Weathered Siltstone / Siltstone	
											16-Aug-2017	2.32	1.55	N/M	N/A	N/A	1.55	63.95	N/M			
											19-Jul-2018	2.19	1.42	N/M	N/A	N/A	1.42	64.08	0.68			
											14-Jul-2019	2.26	1.49	N/M	N/A	N/A	1.49	64.01	0.70			
Mainland Background - Surficial Sediment																						
MCBG-16-5-4	W-CAT-1	599515.920	7241489.390	53.59	54.65	1.06	4.85	N/A	3.35 - 4.85	2.70 - 4.85	05-Aug-2016	> 5.85	> 4.79	N/M	N/A	N/A	> 4.79	< 48.80	N/M	N/M	Silty clay	Dry
											18-Aug-2017	N/M	N/A	N/M	N/A	N/A	N/A	N/A	N/M			Dry
											22-Jul-2018	> 5.86	> 4.80	N/M	N/A	N/A	> 4.80	< 48.79	1.03			Dry
											15-Jul-2019	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M			Destroyed
Bear Island - Bear Island West Sumps (Sumps 1-5) - Surficial Sediment																						
BI 08-6-4	W-CAT-2	598121.740	7238557.818	50.69	51.54	0.85	3.80	46.89	2.30 - 3.80	1.00 - 3.80	08-Aug-2016	2.22	1.37	N/M	N/A	N/A	1.37	49.32	N/M	6.20E-08	Clayey silt/silty clay	Frost jacked
											11-Aug-2017	2.66	1.81	N/M	N/A	N/A	1.81	48.88	N/M			
											17-Jul-2018	2.45	1.60	N/M	N/A	N/A	1.60	49.09	1.23			
											17-Jul-2019	2.30	1.45	N/M	N/A	N/A	1.45	49.24	1.30			
BI 08-8-4	W-CAT-2	598147.295	7238420.140	49.73	50.48	0.75	3.80	45.93	2.30 - 3.80	1.70 - 3.80	08-Aug-2016	1.09	0.34	N/M	N/A	N/A	0.34	49.39	N/M	8.80E-08	Debris/sand	Frost jacked, added J-Plug
											11-Aug-2017	1.40	0.65	N/M	N/A	N/A	0.65	49.08	N/M			
											15-Jul-2018	1.70	0.95	N/M	N/A	N/A	0.95	48.78	1.19			
											17-Jul-2019	1.42	0.67	N/M	N/A	N/A	0.67	49.06	1.32			
BI DP 08-5	W-CAT-2	598194.188	7238539.586	50.62	51.35	0.73	1.23	49.39	0.90 - 1.20	0.90 - 1.20	10-Aug-2016	1.37	0.64	N/M	N/A	N/A	0.64	49.98	N/M	N/M	Surficial sediment	New lock installed
											11-Aug-2017	1.67	0.94	N/M	N/A	N/A	0.94	49.68	N/M			
											20-Jul-2018	1.45	0.72	N/M	N/A	N/A	0.72	49.90	1.12			Ice in waterra
											17-Jul-2019	N/A	N/A	N/M	N/A	N/A	N/A	N/A	N/M			Frozen
BIS-10-3-DP	W-CAT-2	598020.469	7238339.298	50.05	50.94	0.89	0.63	49.42	0.33 - 0.63	0.30 - 0.60	08-Aug-2016	1.52	0.63	N/M	N/A	N/A	0.63	49.42	N/M	N/M	Peat with Clay	
											11-Aug-2017	1.30	0.41	N/M	N/A	N/A	0.41	49.64	N/M			
											15-Jul-2018	1.18	0.29	N/M	N/A	N/A	0.29	49.76	0.93			Limited sample, no field parameters
											15-Jul-2018	1.18	0.29	N/M	N/A	N/A	0.29	49.76	0.93			
											17-Jul-2019	1.20	0.31	N/M	N/A	N/A	0.31	49.74	0.98			
BI-13-5-2	W-CAT-2	598357.004	7238369.507	50.56	51.48	0.92	N/A	N/A	0.90 - 2.40	0.60 - 2.70	10-Aug-2016	1.54	0.62	N/M	N/A	N/A	0.62	49.94	N/M	3.70E-07	Sandy silt	
											14-Aug-2017	> 1.87	> 0.95	N/M	N/A	N/A	> 0.95	< 49.61	N/M			Dry
											18-Jul-2018	1.60	0.68	N/M	N/A	N/A	0.68	49.88	N/M			
											17-Jul-2019	1.78	0.86	N/M	N/A	N/A	0.86	49.70	1.27			No sample
BI-13-18-3	W-CAT-2	598235.587	7238709.120	50.06	50.96	0.90	N/A	N/A	0.90 - 2.40	0.60 - 2.70	09-Aug-2016	> 2.18	> 1.28	N/M	N/A	N/A	> 1.28	< 48.78	N/M	N/M	Sandy silt	Dry
											14-Aug-2017	> 1.83	> 0.93	N/M	N/A	N/A	> 0.93	< 49.13	N/M			Dry, well compromised. Silt and sand on water level tape.
											17-Jul-2018	> 1.89	> 0.99	N/M	N/A	N/A	> 0.99	< 49.07	1.00			Dry, well compromised. Bentonite on water level tape.
											12-Jul-2019	> 1.87	> 0.97	N/M	N/A	N/A	> 0.97	< 49.09	N/M			Dry -bailer removed
BIS-16-1-3	W-CAT-2	598046.470	7238576.910	50.58	51.69	1.11	3.20	47.38	1.70 - 3.20	1.00 - 3.20	09-Aug-2016	2.17	1.06	N/M	N/A	N/A	1.06	49.52	N/M	N/M	Clay	
											10-Aug-2017	2.63	1.52	N/M	N/A	N/A	1.52	49.06	N/M			
											17-Jul-2018	2.32	1.21	N/M	N/A	N/A	1.21	49.37	1.36			CASING SUNK
											17-Jul-2019	2.18	1.07	N/M	N/A	N/A	1.07	49.51	1.40			Casing sunk, frost-jacked PVC
BIS-16-7-5	W-CAT-2	598179.470	7238344.100	49.43	50.41	0.98	4.60	44.83	3.10 - 4.60	2.75 - 4.60	08-Aug-2016	1.34	0.36	N/M	N/A	N/A	0.36	49.07	N/M	N/M	Clayey Sand/Sand	
											11-Aug-2017	1.56	0.58	N/M	N/A	N/A	0.58	48.85	N/M			
											15-Jul-2018	1.56	0.58	N/M	N/A	N/A	0.58	48.85	1.28			
											17-Jul-2019	2.00	1.02	N/M	N/A	N/A	1.02	48.41	1.30			
BIS-16-8-3	W-CAT-2	598008.520	7238296.390	49.31	50.32	1.01	2.5	N/A	1.00 - 2.50	0.85 - 2.60	08-Aug-2016	1.31	0.30	N/M	N/A	N/A	0.30	49.01	N/M	N/M	Silty clay	
											11-Aug-2017	1.40	0.39	N/M	N/A	N/A	0.39	48.92	N/M			
											15-Jul-2018	1.45	0.44	N/M	N/A	N/A	0.44	48.87	1.11			
											17-Jul-2019	1.32	0.31	N/M	N/A	N/A	0.31	49.00	1.16			
BIS-16-10-4	W-CAT-2	598449.880	7238463.760	50.64	51.40	0.76	3.75	46.89	2.25 - 3.75	2.00 - 3.75	11-Aug-2016	2.14	1.38	N/M	N/A	N/A	1.38	49.26	N/M	N/M	Sandy Clay	
											11-Aug-2017	2.56	1.80	N/M	N/A	N/A	1.80	48.84	N/M			
											20-Jul-2018	2.53	1.77	N/M	N/A	N/A	1.77	48.87	0.87			
											17-Jul-2019	2.57	1.81	N/M	N/A	N/A	1.81	48.83	N/M			
BIS-16-11-4	W-CAT-2	598348.040	7238446.540	51.17	52.09	0.92	3.90	47.27	2.40 - 3.90	2.03 - 3.90	10-Aug-2016	2.26	1.34	N/M	N/A	N/A	1.34	49.83	N/M		Sandy Clay/Clayey Sand	
											11-Aug-2017	2.64	1.72	N/M	N/A	N/A	1.72	49.45	N/M	N/M		
											20-Jul-2018	2.50	1.58	N/M	N/A	N/A	1.58	49.59	1.07			
											17-Jul-2019	2.43	1.51	N/M	N/A	N/A	1.51	49.66	N/M			

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Table 2

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
BIS-16-12-5	**W-CAT-2**	598182.480	7238336.220	49.31	50.29	0.98	4.60	44.71	3.10 - 4.60	2.00 - 4.60	08-Aug-2016	1.24	0.26	N/M	N/A	N/A	0.26	49.05	N/M	N/M	Clayey Sand/Sand	
											11-Aug-2017	1.48	0.50	N/M	N/A	N/A	0.50	48.81	N/M			
											15-Jul-2018	1.52	0.54	N/M	N/A	N/A	0.54	48.77	1.28			Well kinked/frozen at 1.5 mbtoc. Tried waterra, but would not go down
											17-Jul-2019	1.68	0.70	N/M	N/A	N/A	0.70	48.61	1.37			
Bear Island - R-36X Well Site - Surficial Sediment																						
R36-16-1-5	**W-CAT-2**	598101.570	7238191.100	49.49	50.38	0.89	4.73	N/A	3.23 - 4.73	2.70 - 4.73	18-Jul-2018	N/M	N/M	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Sandy silt	Could not locate
											17-Jul-2019	> 5.63	> 4.74	N/M	N/A	N/A	> 4.74	< 44.75	N/M			Dry
R36-16-3-4	**W-CAT-2**	598090.200	7238161.990	49.71	50.66	0.95	4.17	N/A	2.67 - 4.17	2.30 - 4.20	18-Jul-2018	N/M	N/M	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Sandy silt	Could not locate
											17-Jul-2019	> 5.09	> 4.14	N/M	N/A	N/A	> 4.14	< 45.57	N/M			Dry
R36-16-4-4	**W-CAT-2**	598145.760	7238176.620	49.38	50.40	1.02	3.62	N/A	2.12 - 3.62	1.50 - 3.62	18-Jul-2018	N/M	N/M	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Clayey silt	Could not locate
											17-Jul-2019	> 4.64	> 3.62	N/M	N/A	N/A	> 3.62	< 45.76	N/M			Dry, ice on WL tape
R36-16-6-4.5	**W-CAT-2**	598131.790	7238112.510	49.69	50.68	0.99	4.52	N/A	3.02 - 4.52	2.30 - 4.52	17-Jul-2019	5.47	4.48	N/M	N/A	N/A	4.48	45.21	N/M	N/M	Sandy silt	No sample
R36-16-9-4	**W-CAT-2**	598083.610	7238140.840	49.64	50.70	1.06	3.77	N/A	2.27 - 3.77	1.80 - 3.77	18-Jul-2018	N/M	N/M	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Clayey silt	Could not locate
											17-Jul-2019	> 4.79	> 3.73	N/M	N/A	N/A	> 3.73	< 45.91	N/M			Dry
Bear Island - Former Bear Island Battery - Surficial Sediment																						
BI-14-13-3	**W-CAT-2**	597987.560	7238728.650	42.45	43.88	1.43	3.14	39.31	1.62 - 3.14	1.62 - 3.14	09-Aug-2016	1.00	-0.43	N/M	N/A	N/A	N/A	42.88	N/M	1.60E-06	Silty sand/clay/sand	Mud on tape
											10-Aug-2017	0.65	-0.78	N/M	N/A	N/A	N/A	43.23	N/M			Water in bailer, poured in well then water level
											15-Jul-2018	0.73	-0.70	N/M	N/A	N/A	N/A	43.15	0.30			
											16-Jul-2019	0.88	-0.55	N/M	N/A	N/A	N/A	43.00	N/M			
BI BT1 09-1-4	**W-CAT-2**	597991.224	7238618.913	50.60	51.37	0.77	4.40	46.20	1.40 - 4.40	1.25 - 4.40	08-Aug-2016	2.62	1.85	N/M	N/A	N/A	1.85	48.75	N/M	3.70E-07	Silt/sandy silt/silty sand	
											10-Aug-2017	3.05	2.28	N/M	N/A	N/A	2.28	48.32	N/M			
											17-Jul-2018	2.73	1.96	N/M	N/A	N/A	1.96	48.64	0.73			
											16-Jul-2019	2.35	1.58	N/M	N/A	N/A	1.58	49.02	N/M			Orange tint
BIBT1-15-1-3.5	**W-CAT-2**	598047.130	7238625.480	50.66	51.39	0.73	3.50	47.16	2.00 - 3.50	1.70 - 3.80	08-Aug-2016	2.28	1.55	N/M	N/A	N/A	1.55	49.11	N/M	N/M	Sandy silt/silty clay	
											10-Aug-2017	2.87	2.14	N/M	N/A	N/A	2.14	48.52	N/M			
											17-Jul-2018	2.56	1.83	N/M	N/A	N/A	1.83	48.83	0.73			
											17-Jul-2019	2.22	1.49	N/M	N/A	N/A	1.49	49.17	0.77			
BIBT1-15-2-4	**W-CAT-2**	598018.090	7238608.390	50.81	51.68	0.87	3.70	47.11	2.20 - 3.70	2.00 - 3.70	08-Aug-2016	2.60	1.73	N/M	N/A	N/A	1.73	49.08	N/M	N/M	Sandy silt	
											10-Aug-2017	3.22	2.35	N/M	N/A	N/A	2.35	48.46	N/M			
											17-Jul-2018	2.90	2.03	N/M	N/A	N/A	2.03	48.78	0.81			
											16-Jul-2019	2.52	1.65	N/M	N/A	N/A	1.65	49.16	N/M			Odour
BIBT1-15-4-4	**W-CAT-2**	597946.160	7238656.600	45.45	45.54	0.09	3.80	41.65	2.30 - 3.80	2.00 - 3.80	08-Aug-2016	3.83	3.74	N/M	N/A	N/A	3.74	41.71	N/M	N/M	Silty sand	Dry
											10-Aug-2017	3.51	3.42	N/M	N/A	N/A	3.42	42.03	N/M			
											15-Jul-2018	1.20	1.11	N/M	N/A	N/A	1.11	44.34	0.08			
											17-Jul-2019	1.71	1.62	N/M	N/A	N/A	1.62	43.83	0.05			
BIBT1-15-5-3	**W-CAT-2**	597962.690	7238680.830	43.24	43.25	0.01	3.30	39.94	1.80 - 3.30	1.50 - 3.30	08-Aug-2016	1.74	1.73	N/M	N/A	N/A	1.73	41.51	N/M	N/M	Sand	
											10-Aug-2017	1.21	1.20	N/M	N/A	N/A	1.20	42.04	N/M			
											15-Jul-2018	N/M	N/M	N/M	N/A	N/A	N/A	N/A	N/M			Could not locate
											17-Jul-2019	N/M	N/M	N/M	N/A	N/A	N/A	N/A	N/M			Could not locate
BIBT1-15-7-4	**W-CAT-2**	598005.100	7238694.500	44.68	44.76	0.08	3.70	40.98	2.20 - 3.70	2.20 - 3.70	08-Aug-2016	2.90	2.82	N/M	N/A	N/A	2.82	41.86	N/M	N/M	Sand	Can't lock. Ice damage.
											10-Aug-2017	2.54	2.46	N/M	N/A	N/A	2.46	42.22	N/M			
											15-Jul-2018	2.64	2.56	N/M	N/A	N/A	2.56	42.12	0.07			
											16-Jul-2019	3.10	3.02	N/M	N/A	N/A	3.02	41.66	N/M			Limited sample, very silty, brown
BIBT1-16-1-3	**W-CAT-2**	N/M	N/M	N/M	N/M	0.2	3.00	N/A	1.50 - 3.00	1.40 - 3.10	11-Aug-2017	1.21	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Silty sand	
											15-Jul-2018	1.11	0.90[¥]	N/M	N/A	N/A	0.90[¥]	N/A	0.21			
											16-Jul-2019	1.53	N/A	N/M	N/A	N/A	N/A	N/A	N/M			
BIBT1-16-2-3	**W-CAT-2**	N/M	N/M	N/M	N/M	0.15	2.90	N/A	1.40 - 2.90	1.20 - 3.00	11-Aug-2017	0.83	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M		
											15-Jul-2018	0.82	N/A	N/M	N/A	N/A	N/A	N/A	N/M			
											16-Jul-2019	0.99	N/A	N/M	N/A	N/A	N/A	N/A	N/M			
BIBT1-16-3-3	**W-CAT-2**	N/M	N/M	N/M	N/M	N/A	3.00	N/A	1.40 - 2.90	1.20 - 3.00	11-Aug-2017	0.64	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Sand/silty sand/silt/sandy silt	
											15-Jul-2018	0.57	0.53[¥]	N/M	N/A	N/A	0.53[¥]	N/A	0.04			
											17-Jul-2019	1.07	0.97[¥]	N/M	N/A	N/A	0.97[¥]	N/A	0.10			
Bear Island - Bear Island East Sump (Sump 6) - Surficial Sediment																						
BI 08-2-3	**W-CAT-2**	599951.813	7238379.414	51.02	51.72	0.70	3.10	N/A	1.60 - 3.10	1.20 - 3.10	07-Aug-2016	2.51	1.81	N/M	N/A	N/A	1.81	49.21	N/M	3.40E-06	Silty sand/silty clay	
											15-Aug-2017	3.16	2.46	N/M	N/A	N/A	2.46	48.56	N/M			
											18-Jul-2018	2.78	2.08	N/M	N/A	N/A	2.08	48.94	N/M			
											12-Jul-2019	2.86	2.16	N/M	N/A	N/A	2.16	48.86	0.95			Orange substance on waterra

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Table 2

Monitoring Well Installation Details: Datum/Groundwater Surface Elevations and Hydraulic Conductivities

PROJECT No.: 417011-00096

Monitoring Station	Background Category	Easting (m)	Northing (m)	Ground Elevation (masl)	Datum Elevation (masl)	Surveyed Stickup (m)	Total Depth of Piezometer (mbgs)	Bottom of Piezometer Elevation (masl)	Depth Interval of Screen (mbgs)	Depth Interval of Sand (mbgs)	Date (dd-mmm-yyyy)	Observed Depth to Groundwater (mbtoc)	Observed Depth to Groundwater (mbgs)	Depth to Product (mbtoc)	Observed Product Thickness (m)	Corrected Product Thickness (m)	Corrected Depth to Groundwater (mbgs)	Corrected Groundwater Surface Elevation (masl)	Measured Stick up (m)	Hydraulic Conductivity (m/s)	Lithology	Comments
BI-13-2-4.5	**W-CAT-2**	599855.312	7238313.048	49.48	50.48	1.00	N/A	N/A	1.50 - 4.50	1.20 - 4.80	07-Aug-2016	1.62	0.62	N/M	N/A	N/A	0.62	48.86	N/M	8.50E-07	Silty sand/Clayey silt	
											15-Aug-2017	1.68	0.68	N/M	N/A	N/A	0.68	48.80	N/M			
											18-Jul-2018	1.72	0.72	N/M	N/A	N/A	0.72	48.76	N/M			Well kinked at 1.7mbgs; limited sample no field parameters
											12-Jul-2019	N/M	N/M	N/M	N/A	N/A	N/A	N/A	N/M			Severely frost-jacked, blocked at 2.32 mbtoc
BIWS-16-1-4	**W-CAT-2**	N/M	N/M	N/M	N/M	N/A	4.00	N/A	2.50 - 4.00	2.20 - 4.10	15-Aug-2017	1.11	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Sandy Silt/Sand/Sand and Silt/Clayey Silt	
											18-Jul-2018	1.08	0.60¥	N/M	N/A	N/A	0.60¥	N/A	0.48			
											12-Jul-2019	1.01	0.53¥	N/M	N/A	N/A	0.53¥	N/A	0.48			Limited sample, missing bottle, no field parameters, obstruction at 1.80
Bear Island - N-42X Well Site - Surficial Sediment																						
BIB 98-2-5	**W-CAT-2**	599104.786	7238803.564	50.39	50.99	0.60	4.00	46.36	2.50 - 4.00	2.00 - 5.20	08-Aug-2016	1.64	1.04	N/M	N/A	N/A	1.04	49.35	N/M	4.40E-07	Clay silt	
											10-Aug-2017	2.90	2.30	N/M	N/A	N/A	2.30	48.09	N/M			
											17-Jul-2018	2.31	1.71	N/M	N/A	N/A	1.71	48.68	0.60			
											17-Jul-2019	2.20	1.60	N/M	N/A	N/A	1.60	48.79	0.62			
BIN42-10-1-5	**W-CAT-2**	599122.102	7238734.015	51.23	51.98	0.75	4.50	46.73	1.50 - 4.50	1.20 - 4.50	08-Aug-2016	2.05	1.30	N/M	N/A	N/A	1.30	49.93	N/M	1.60E-06	Clayey Silt	Replaced
											10-Aug-2017	2.71	1.96	N/M	N/A	N/A	1.96	49.27	N/M			
											17-Jul-2018	2.23	1.48	N/M	N/A	N/A	1.48	49.75	0.71			
											17-Jul-2019	2.17	1.42	N/M	N/A	N/A	1.42	49.81	0.71			Ice block around 3mbgs. Retrieved limited water from above ice block.
BIN42-10-2-4	**W-CAT-2**	599203.662	7238718.517	50.93	51.71	0.78	3.50	47.43	2.00 - 3.50	1.80 - 3.50	08-Aug-2016	> 4.38	> 3.60	N/M	N/A	N/A	> 3.60	< 47.33	N/M	N/M	Sandy Silt	Well dry @ 4.38 mbtoc
											10-Aug-2017	> 4.31	> 3.53	N/M	N/A	N/A	> 3.53	< 47.40	N/M			Dry
											17-Jul-2018	> 4.38	> 3.60	N/M	N/A	N/A	> 3.60	< 47.33	0.77			Dry
											17-Jul-2019	> 4.38	> 3.60	N/M	N/A	N/A	> 3.60	< 47.33	N/M			Dry
Bear Island - Former Bear Island Flare Pit - Surficial Sediment																						
BIFP-16-1-3	**W-CAT-2**	599218.780	7238901.900	46.17	46.57	0.40	3.00	43.17	1.50 - 3.00	1.20 - 3.20	10-Aug-2017	1.94	1.54	N/M	N/A	N/A	1.54	44.63	N/M	N/M	Clayey Silt/Sand and Silt/Sand	
											20-Jul-2018	1.74	1.34	N/M	N/A	N/A	1.34	44.83	0.22			
											12-Jul-2019	1.45	1.05	N/M	N/A	N/A	1.05	45.12	0.26			Frost jacked,silty
BIFP-16-2-3	**W-CAT-2**	599218.290	7238892.080	46.64	46.79	0.15	3.00	43.64	1.50 - 3.00	1.20 - 3.20	10-Aug-2017	2.05	1.90	N/M	N/A	N/A	1.90	44.74	N/M	N/M	Clayey Silt/Sand and Silt/Sand	
											20-Jul-2018	1.21	1.06	N/M	N/A	N/A	1.06	45.58	0.23			
											12-Jul-2019	1.63	1.48	N/M	N/A	N/A	1.48	45.16	0.30			Frost jacked, silty
BIFP-16-3-3	**W-CAT-2**	N/M	N/M	N/M	N/M	N/A	3.00	N/A	1.50 - 3.00	1.40 - 3.10	10-Aug-2017	1.92	N/A	N/M	N/A	N/A	N/A	N/A	N/M	N/M	Sandy Silt/Sand	
											20-Jul-2018	1.70	1.42¥	N/M	N/A	N/A	1.42¥	N/A	0.28			
											12-Jul-2019	1.41	1.09¥	N/M	N/A	N/A	1.09¥	N/A	0.32			Frost jacked, silty
BIFP-17-1-3	**W-CAT-2**	N/M	N/M	N/M	N/M	N/A	3.00	N/A	1.50 - 3.00	1.40 - 3.00	20-Jul-2018	1.82	1.57¥	N/M	N/A	N/A	1.57¥	N/A	0.25	N/M	Sand/Sandy silt	
											12-Jul-2019	1.23	0.99¥	N/M	N/A	N/A	0.99¥	N/A	0.24			
Goose Island - Surficial Sediment																						
GIP9 09-1-4	**W-CAT-2**	595607.659	7240330.310	47.88	48.33	0.45	4.10	43.78	1.10 - 1.40	0.90 - 4.10	07-Aug-2016	4.02	3.57	N/M	N/A	N/A	3.57	44.31	N/M	N/M	Silty clay/clayey silt/sandy silt	
											20-Aug-2017	4.40	3.95	N/M	N/A	N/A	3.95	43.93	N/M			
											14-Jul-2018	> 4.67	> 4.22	N/M	N/A	N/A	> 4.22	< 43.66	0.22			Dry
											16-Jul-2019	> 4.68	> 4.23	N/M	N/A	N/A	> 4.23	< 43.65	N/M			Dry
GIQ8 09-1-6	**W-CAT-2**	595331.541	7240343.390	52.39	52.78	0.39	5.85	46.54	4.35 - 5.85	2.50 - 5.85	30-Aug-2019	5.66	5.27	N/M	N/A	N/A	5.27	N/A	N/M	N/M	Sandy silt/silty clay	Effectively dry, did not sample
GIQ8-10-1-5	**W-CAT-2**	595303.789	7240361.547	52.24	52.95	0.71	5.00	47.24	2.00 - 5.00	1.70 - 5.00	30-Aug-2019	> 6.33	> 5.62	N/M	N/A	N/A	> 5.62	N/M	N/M	N/M	Sandy Silt	Dry
GIT10 09-1-4	**W-CAT-2**	N/M	N/M	45.99	46.92	0.93	3.45	42.54	1.95 - 3.45	0.30 - 3.45	30-Aug-2019	N/M	N/M	N/M	N/A	N/A	N/M	N/M	N/M	N/M	Sandy silt/silty sand	Could not Locate
GIT10 09-2-3	**W-CAT-2**	N/M	N/M	46.10	46.53	0.43	4.15	41.95	1.15 - 4.15	0.90 - 4.15	30-Aug-2019	N/M	N/M	N/M	N/A	N/A	N/M	N/M	N/M	N/M	Sandy silt	Could not Locate

NOTES: 1. Data may be entered to the nearest mm, but are reported above to the nearest cm.□
Apparent rounding errors may occasionally occur in calculated fields (e.g. Groundwater Surface Elevation).
2. All coordinates are provided in the UTM Zone 9N referenced to North American Datum of 1927 coordinate system.
3. N/M - Denotes not measured.
4. N/A - Denotes not available.
5. masl - Denotes metres above sea level.
6. mbgs - Denotes metres below ground surface.
7. mbtoc - Denotes metres below top of PVC casing.
8. ¥ - depth to groundwater (mbgs) calculated using field-measured stick up, not used to calculate groundwater surface elevation
9. Where a measurement is not available due to the source being dry, depths and elevations are displayed as greater than the field measured depth of well, where available.
When field measured depth of well is not available, the installed depth from borehole log is used.
10. Discrepancies and inconsistencies in calcaulated elevations may occur due to gradual frost jacking of well casings, resulting in errors in the surveyed datum elevation.
11. Corrected Depth to Groundwater, and Corrected Groundwater Surface Elevations include corrected product thickness where free product present.
12. Calculations applied to free product are based off a Specific Gravity of 0.8.
13. Background 95th Percentile Statistical Categories:
W-CAT-1 : Mainland Locations - Surficial Sediments - 95th Percentile Background
W-CAT-2: Bear, Goose, and Frenchy's Islands - Surficial Sediments - 95th Percentile Background
W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background
W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background
W-CAT-5: Surficial Sediments - Natural Gas & Non-Saline Water Seepage - 95th Percentile Background
W-CAT-6: Mainland Surface Water - 95th Percentile Background
W-CAT-7: Bear Island Surface Water - 95th Percentile Background
W-CAT-8: Goose Island Surface Water - 95th Percentile Background

Table 3A

Groundwater and Surface Water Results: Field-Measured Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Status	Background Category	Electrical Conductivity (uS/cm)	pH (pH units)	Temperature (deg C)	Sample Comment
CCME CEQG Freshwater Aquatic Life				---	(6.5 - 9)	---	
W-CAT-1				2355	8.1	---	
W-CAT-2				2600	8.0	---	
W-CAT-3				2954	8.5	---	
W-CAT-4				2780	8.7	---	
W-CAT-5				1392	7.7	---	
W-CAT-6				865	8.3	---	
W-CAT-7				1520	8.3	---	
W-CAT-8				514	8.5	---	
Mainland West - Central Processing Facility - Surficial Sediment							
CPF 98-6-3	06-Aug-2016	Active	**W-CAT-1**	1785	7.05	6.2	
	13-Aug-2017			2800	7.09	15.1	Clear
	17-Aug-2017			1732	6.74	7.5	
	16-Jul-2018			1657	7.08	17.6	Slightly turbid
	18-Jun-2019			2890	6.80	3.4	
Mainland West - Central Processing Facility - Bedrock							
CPF 97-2-7	06-Aug-2016	Active	**W-CAT-3**	2500	7.45	5.7	Clear
	13-Aug-2017			1523	7.29	14.0	Clear
	17-Aug-2017			2000	6.98	5.5	
	20-Jul-2018			2430	7.09	7.1	
	11-Jul-2019			2680	7.01	3.8	Slightly turbid
CPF 09-6-19	06-Aug-2016	Active	**W-CAT-3**	2020	7.43	6.9	Clear
	12-Aug-2017			---	---	---	No sample, NAPL
	17-Aug-2017			1573	6.95	6.1	
	16-Jul-2018			1924	7.22	14.7	
	18-Jun-2019			847	6.71	3.7	
Mainland West - E-27X Well Site - Bedrock							
E27 09-2-16	12-Aug-2017	Active	**W-CAT-3**	1097	6.69	12.0	Light brown
	20-Aug-2017			2720	7.23	6.6	Clear, sour odour
	16-Jul-2018			2450	7.62	12.8	
	11-Jul-2019			---	---	---	Sheen on water, no field parameters
Mainland West - F-28X Well Site - Surficial Sediment							
F28 09-1-6	11-Jul-2019	Active	**W-CAT-4**	---	---	---	NAPL, no field parameters
F28 09-2-6	11-Jul-2019	Active	**W-CAT-4**	---	---	---	NAPL
Mainland West - F-28X Well Site - Bedrock							
F28 09-3-14	11-Jul-2019	Active	**W-CAT-3**	---	---	---	NAPL
Mainland Central - Biocells / B-33X Well Site - Surficial Sediment							
ARB-10-2-3	04-Aug-2016	Active	**W-CAT-1**	462	7.27	8.3	Clear
	12-Aug-2017			653	7.12	9.0	
	17-Aug-2017			2000	6.98	5.5	
	11-Jul-2018			673	7.95	6.7	Slightly turbid, brown
	11-Jul-2019			740	7.71	4.6	Very turbid, brown
ARB-12-1-4	04-Aug-2016	Active	**W-CAT-1**	762	7.07	7.8	Silty
	12-Aug-2017			732	7.45	6.8	
	17-Aug-2017			1425	6.64	8.7	
	11-Jul-2018			791	7.93	6.3	Slightly turbid, brown
	11-Jul-2019			726	7.70	4.6	Slightly turbid, brown
ARB-12-4-2	04-Aug-2016	Active	**W-CAT-1**	1051	7.04	9.3	Silty, brown
	12-Aug-2017			871	7.03	10.1	
	17-Aug-2017			1655	6.43	11.1	
	11-Jul-2018			1025	6.96	8.0	Slightly turbid, brown
	11-Jul-2019			841	7.95	6.4	Turbid, brown
ARB-13-1-4.5	04-Aug-2016	Active	**W-CAT-1**	1642	6.85	11.7	Clear
	12-Aug-2017			1207	6.79	7.6	
	17-Aug-2017			1732	6.74	7.5	
	11-Jul-2018			1613	7.08	7.3	Slightly turbid, brown
	13-Jul-2019			1315	6.16	12.1	Slightly turbid, brown
ARB-13-3-4.5	04-Aug-2016	Active	**W-CAT-1**	1402	7.24	9.4	Clear, hydrocarbon odour
	12-Aug-2017			1316	7.28	11.3	
	17-Aug-2017			---	---	---	Limited sample, no field parameters
	12-Jul-2018			1501	6.37	7.6	Clear, slight sulfur odour
	11-Jul-2019			1722	7.62	7.7	Clear effervescence
ARB-13-5-4.5	04-Aug-2016	Active	**W-CAT-1**	1136	7.03	9.7	Clear, hydrocarbon odour
	12-Aug-2017			1344	6.95	7.8	
	20-Aug-2017			2720	7.23	6.6	Clear, sour odour
	12-Jul-2018			1025	5.4	5.4	Clear
	11-Jul-2019			970	7.47	6.2	Slightly turbid, brown
ARB-16-1-3	12-Aug-2017	Active	**W-CAT-1**	997	6.92	5.9	
	12-Jul-2018			754	6.09	2.7	Turbid, brown
	11-Jul-2019			779	8.06	2.5	Very turbid, silty, brown

Table 3A

Groundwater and Surface Water Results: Field-Measured Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Status	Background Category	Electrical Conductivity (uS/cm)	pH (pH units)	Temperature (deg C)	Sample Comment
CCME CEQG Freshwater Aquatic Life				---	(6.5 - 9)	---	
W-CAT-1				2355	8.1	---	
W-CAT-2				2600	8.0	---	
W-CAT-3				2954	8.5	---	
W-CAT-4				2780	8.7	---	
W-CAT-5				1392	7.7	---	
W-CAT-6				865	8.3	---	
W-CAT-7				1520	8.3	---	
W-CAT-8				514	8.5	---	
ARB-17-1-3	15-Oct-2017	Active	**W-CAT-1**	650	6.45	4.8	Brown
	11-Jul-2018			1468	6.77	7.6	Slightly turbid
	13-Jul-2019			1431	6.20	8.8	Turbid, brown
ARB-17-2-3	15-Oct-2017	Active	**W-CAT-1**	1473	6.20	4.7	Semi-turbid, brown
	12-Jul-2018			1588	5.74	7.6	Slightly turbid, brown
	11-Jul-2019			2010	7.45	9.6	Very turbid , slightly silty, brown
ARB-17-3-5	15-Oct-2017	Active	**W-CAT-1**	1432	6.32	6.2	Brown
	12-Jul-2018			1417	5.58	6.2	Slightly turbid, grey-brown
	11-Jul-2019			1511	7.48	8.2	Turbid, brown
BC2-15-1-3	04-Aug-2016	Active	**W-CAT-1**	865	7.15	4.1	Brown, silty
	12-Aug-2017			---	---	---	Dry - no sample
	12-Aug-2017			904	6.60	4.6	Silty
	11-Jul-2018			1040	6.91	3.9	Turbid, brown
	12-Jul-2019			774	7.39	8.5	Slightly turbid, brown
BC2-15-2-4	04-Aug-2016	Active	**W-CAT-1**	1254	6.73	5.8	Silty
	12-Aug-2017			824	6.82	6.5	
	17-Aug-2017			---	---	---	Limited sample, no field parameters
	11-Jul-2018			1006	6.49	4.7	Clear
	12-Jul-2019			1301	7.21	7.7	Slightly turbid, brown
BC2-15-3-4	04-Aug-2016	Active	**W-CAT-1**	803	6.84	5.3	Clear
	12-Aug-2017			738	6.88	6.8	
	11-Jul-2018			1132	6.35	7.5	Slightly turbid
	12-Jul-2019			1041	7.35	7.1	Slightly turbid, brown
BC2-15-4-3	04-Aug-2016	Active	**W-CAT-1**	1406	6.98	5.4	Clear
	12-Aug-2017			1032	7.09	6.8	Sulfur odour
	13-Aug-2017			---	---	---	Brown globules, sheen. No field parameters
	11-Jul-2018			787	6.32	4.8	Slightly turbid, brown, sulfur odour
	11-Jul-2019			939	8.07	4.3	Slightly turbid, brown
OPB 09-2-4	11-Jul-2019	Active	**W-CAT-1**	845	7.83	4.2	Slightly turbid, brown
OPB 09-3-4	11-Jul-2019	Active	**W-CAT-1**	834	7.91	4.0	Very turbid, slightly silty, brown
Mainland Central - Biocells / B-33X Well Site - Surface Water							
ARB-17-SW01	12-Aug-2017	Active	**W-CAT-6**	732	7.45	6.8	
	12-Jul-2018			823	5.86	11.8	Clear
	11-Jul-2019			773	8.12	11.9	Clear
ARB-17-SW02	12-Aug-2017	Active	**W-CAT-6**	983	7.55	17.7	
	12-Jul-2018			841	5.57	13.4	Clear
	13-Jul-2019			831	5.74	15.7	Clear
Mainland Central - B-30X Well Site - Surficial Sediment							
B30X-12-2-4	04-Aug-2016	Active	**W-CAT-1**	1255	6.81	13.3	Yellow, hydrocarbon odour / sheen
	13-Aug-2017			1674	6.81	12.0	Sheen
	16-Aug-2017			2040	6.85	12.1	Light brown
	11-Jul-2018			---	---	---	No field parameters (NAPL)
	13-Jul-2019			2390	5.73	9.0	Slightly turbid, brown. Strong hydrocarbon odour and sheen.
B30X-12-1-4	04-Aug-2016	Active	**W-CAT-1**	3130	7.02	10.5	Yellow, hydrocarbon odour/sheen
	12-Aug-2016			4660	6.66	10.6	
	13-Aug-2017			2220	7.03	9.2	Slight odour, silty
	16-Aug-2017			2840	6.87	10.0	Clear
	11-Jul-2018			2130	7.03	9.0	
	13-Jul-2019			1698	7.04	6.2	Hydrocarbon odour and sheen. Slightly turbid, brown
B30-13-1-5.4	04-Aug-2016	Active	**W-CAT-1**	901	6.52	6.1	Clear, black sediment
	13-Aug-2017			1164	6.91	9.5	
	18-Aug-2017			1184	7.00	5.5	Frost jacked approx. 15cm
	12-Jul-2018			1223	7.22	4.2	
	13-Jul-2019			1600	6.67	3.7	clear
B30-13-2-4.5	04-Aug-2016	Active	**W-CAT-1**	1294	6.67	6.1	Clear
	12-Aug-2016			1126	6.51	8.4	
	13-Aug-2017			---	6.62	5.4	
	16-Aug-2017			1730	7.38	4.3	
	12-Jul-2018			1230	6.87	3.2	
	13-Jul-2019			1071	6.74	5.8	Clear

Table 3A

Groundwater and Surface Water Results: Field-Measured Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Status	Background Category	Electrical Conductivity (uS/cm)	pH (pH units)	Temperature (deg C)	Sample Comment
CCME CEQG Freshwater Aquatic Life				---	(6.5 - 9)	---	
W-CAT-1				2355	8.1	---	
W-CAT-2				2600	8.0	---	
W-CAT-3				2954	8.5	---	
W-CAT-4				2780	8.7	---	
W-CAT-5				1392	7.7	---	
W-CAT-6				865	8.3	---	
W-CAT-7				1520	8.3	---	
W-CAT-8				514	8.5	---	
B30-13-3-4.5	04-Aug-2016	Active	**W-CAT-1**	2870	6.80	6.6	Slightly silty brown
	13-Aug-2017			2110	6.82	7.5	
	16-Aug-2017			2010	6.81	8.6	Clear
	11-Jul-2018			2230	6.87	8.7	
	15-Jul-2019			1970	6.13	3.7	Clear
B30-13-4-3.9	04-Aug-2016	Active	**W-CAT-1**	---	---	---	Insufficient water to sample
	12-Aug-2017			---	---	---	No sample - Dry
	18-Aug-2017			456	7.30	10.4	Clear to light brown
	11-Jul-2018			---	---	---	No sample
	15-Jul-2019			---	---	---	Insufficient water to sample.
B30-17-1-5	15-Oct-2017	Active	**W-CAT-1**	1093	7.20	3.7	Brown, turbid
	11-Jul-2018			1970	6.79	3.4	
	13-Jul-2019			1760	6.68	4.6	Slightly turbid, brown
B30-17-2-3	12-Jul-2018	Active	**W-CAT-1**	1629	6.92	3.6	
	14-Jul-2019			839	6.32	10.1	Very turbid, brown
Mainland Central - C-30X Well Site / Bosworth Creek and Delta - Surficial Sediment							
C30-10-1-5	12-Aug-2017	Active	**W-CAT-3**	---	---	---	No sample - Dry
	12-Aug-2017			2550	6.60	6.4	
	12-Jul-2018			2950	6.81	5.6	
	13-Jul-2019			2710	6.02	7.5	Chemical odour, slightly turbid, brown
BOS-DP-13-1-1.4	11-Aug-2016	Active	**W-CAT-3**	3700	6.89	11.0	Grey water. Hydrocarbon odour/sheen.
	17-Aug-2017			---	---	---	Limited sample, well blocked, no field parameters
	13-Jul-2019			3300	7.15	8.9	Brown, turbid
BOS-DP-13-2-1.35	06-Aug-2016	Active	**W-CAT-3**	---	---	---	Limited sample. Dark brown, silty. No field parameters
	16-Aug-2017			1173	6.56	10.2	Clear
	18-Aug-2017			---	---	---	Limited sample - no field parameters
	21-Jul-2018			---	---	---	Limited sample, no field parameters
	13-Jul-2019			---	---	---	Could not access
	16-Jul-2019			---	---	---	Dry
BOS-DP-13-3-2	06-Aug-2016	Active	**W-CAT-3**	---	---	---	Limited sample. Yellow. Cloudy. No field parameters.
	16-Aug-2017			---	---	---	Limited sample, no field parameters
	18-Aug-2017			---	---	---	Limited sample - no field parameters
	21-Jul-2018			---	---	---	Limited sample, no field parameters
	13-Jul-2019			---	---	---	Limited quantity sample. No field parameters.
BOS-DP-13-4-3	06-Aug-2016	Active	**W-CAT-3**	---	---	---	Hydrocarbon odour/sheen. Black/Grey. Silty. Limited sample, no field parameters.
	16-Aug-2017			1129	6.77	13.8	
	18-Aug-2017			---	---	---	Limited sample - no field parameters
	21-Jul-2018			---	---	---	Limited sample, no field parameters, Hydrocarbon odour and sheen, black
	13-Jul-2019			---	---	---	Limited quantity sample. No field parameters. Hydrocarbon odour and sheen, black.
Mainland Central - C-30X Well Site / Bosworth Creek and Delta - Surface Water							
BOS SW01	12-Aug-2017	Active	**W-CAT-6**	---	---	---	No sample, NAPL
	18-Aug-2017			691	8.33	14.1	Clear
	21-Jul-2018			650	7.33	11.8	Clear
	13-Jul-2019			660	7.94	10.7	Clear
Mainland Central - Former Battery #3 - Surficial Sediment							
BT3 02-34-4	13-Aug-2017	Active	**W-CAT-3**	2620	6.72	8.2	
	16-Aug-2017			6920	7.13	9.2	
	17-Jul-2018			2030	6.76	7.4	Slightly turbid, brown
	14-Jul-2019			2070	6.77	4.5	Brown
BT3 02-36-4	17-Jul-2018	Active	**W-CAT-3**	1760	6.72	7.7	Clear, slight 'sulfur' odour
	14-Jul-2019			2700	6.70	4.7	Grey and turbid
BT3-18-1-5.5	12-Jul-2018	Active	**W-CAT-3**	2340	6.78	8.0	
	14-Jul-2019			---	---	---	Limited sample, no field parameters
Mainland Central - Former Battery #3 - Bedrock							
BT3 97-11-11	05-Aug-2016	Active	**W-CAT-3**	3620	7.29	4.5	Clear, hydrocarbon odour
	13-Aug-2017			4290	7.16	6.7	
	16-Aug-2017			196	7.34	14.3	Surface water sample from test pit well
	17-Jul-2018			2900	7.19	6.0	Hydrocarbon odour, grey
	14-Jul-2019			3970	7.25	5.2	Grey and turbid
BT3 98-7-7	17-Jul-2018	Active	**W-CAT-3**	---	---	---	Insufficient water for field parameters
	14-Jul-2019			2380	6.82	7.4	Turbid

Table 3A

Groundwater and Surface Water Results: Field-Measured Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Status	Background Category	Electrical Conductivity (uS/cm)	pH (pH units)	Temperature (deg C)	Sample Comment
CCME CEQG Freshwater Aquatic Life				---	(6.5 - 9)	---	
W-CAT-1				2355	8.1	---	
W-CAT-2				2600	8.0	---	
W-CAT-3				2954	8.5	---	
W-CAT-4				2780	8.7	---	
W-CAT-5				1392	7.7	---	
W-CAT-6				865	8.3	---	
W-CAT-7				1520	8.3	---	
W-CAT-8				514	8.5	---	
BT3 99-20-13	05-Aug-2016	Active	**W-CAT-3**	3600	7.00	5.0	Clear, sulphur smell
	13-Aug-2017			2120	7.02	9.0	Sulfur odour
	16-Aug-2017			307	7.04	14.4	Surface water sample from test pit well
	12-Jul-2018			2380	7.93	8.0	Sulfur odour
	13-Jul-2019			2110	7.22	10.6	Clear, Sulfer smell
BT3 99-23-13	05-Aug-2016	Active	**W-CAT-3**	12400	6.81	8.3	Clear, suspended black particulates; sulphur odour
	13-Aug-2017			12590	6.68	6.3	
	16-Aug-2017			1000	6.96	9.9	
	12-Jul-2018			1028	6.81	7.0	
	13-Jul-2019			7610	6.93	16.1	Slightly turbid
BT3 02-32-6	05-Aug-2016	Active	**W-CAT-3**	2070	6.93	5.3	Hydrocarbon odour, brown, cloudy
	13-Aug-2017			---	---	---	Limited sample - no field parameters
	21-Aug-2017			305	7.06	8.4	Surface water sample from test pit well
	12-Jul-2018			1963	6.83	7.6	
	13-Jul-2019			---	---	---	Limited sample, no field parameters
Mainland Central - F-31X Well Site - Surficial Sediment							
F31 97-3-5	06-Aug-2016	Active	**W-CAT-1**	2320	7.18	5.4	Light yellow, organics
	13-Aug-2017			---	---	---	Sheen, 1st hyrdasleeve clear, 2nd hyrdasleeve dark grey, hydrocarbon odour. No field parameters
	17-Aug-2017			---	---	---	Dry - no sample
	16-Jul-2018			---	---	---	Limited sample, no field parameters
	18-Jul-2019			---	---	---	No sample
F31 98-1-4	06-Aug-2016	Active	**W-CAT-1**	2240	6.73	7.2	Light yellow, grey participates, slightly HC odour
	13-Aug-2017			8640	7.32	13.2	Sheen, clear to grey
	17-Aug-2017			---	---	---	Limited sample, no field parameters
	18-Jul-2019			---	---	---	No sample
Mainland Central - G-32X Well Site - Surficial Sediment							
G32-10-1-3	06-Aug-2016	Active	**W-CAT-1**	1805	7.17	8.2	Clear
	13-Aug-2017			1011	7.21	9.6	Frost jacked, hydrocarbon odour, sheen, grey water
	17-Aug-2017			1701	6.54	12.1	
	11-Jul-2019			---	---	---	Dry
Mainland Central - E-33X Well Site - Surficial Sediment							
E33-18-1-2.5	11-Jul-2019	Active	**W-CAT-3**	---	---	---	Sheen, no field parameters, hydrocarbon odour, black
Mainland East - Former Fuel Tanks and Potential Campsite Biocell - Surficial Sediment							
CAB 09-3-3	05-Aug-2016	Active	**W-CAT-1**	987	7.84	14.5	Clear, hydrocarbon odour
	12-Aug-2017			1013	6.74	16.0	Clear
	13-Aug-2017			1230	6.88	6.4	
	12-Jul-2018			1145	5.63	14.3	Clear, sulfur odour
	15-Jul-2019			1200	6.08	12.4	
FT-10-1-3	05-Aug-2016	Active	**W-CAT-1**	674	8.69	6.5	Light brown
	12-Aug-2017			634	7.03	7.8	Silty
	12-Jul-2018			697	5.49	4.5	Clear
	15-Jul-2019			857	6.70	4.0	Clear
Mainland East - C-36X Well Site - Surficial Sediment							
C36-10-1-3	05-Aug-2016	Active	**W-CAT-1**	1019	6.70	8.6	Yellowish brown, silty, slight hydrocarbon odour
	12-Aug-2017			1202	6.59	12.4	Light brown
	17-Aug-2017			1418	6.87	15.0	
	12-Jul-2018			1278	6.21	8.9	Clear, hydrocarbon odour, sheen in nearby standing water
	15-Jul-2019			1123	7.17	12.9	Hydrocarbon odour and sheen , slightly turbid brown
C36-10-2-3	05-Aug-2016	Active	**W-CAT-1**	1757	7.33	6.7	Brown, silty
	12-Aug-2017			1343	6.64	6.3	
	17-Aug-2017			1550	6.90	9.9	Brown, sheen
	12-Jul-2018			1204	5.54	4.4	Clear
	15-Jul-2019			1444	6.52	6.0	Clear
C36-10-3-3	05-Aug-2016	Active	**W-CAT-1**	1414	6.58	7.4	Brown, slight silty
	12-Aug-2017			---	---	---	Dry - no sample
	12-Aug-2017			1318	6.55	8.1	Clear
	12-Jul-2018			1479	6.05	7.4	Slightly turbid, sulfur odour
	15-Jul-2019			1635	6.65	8.4	Very turbid, brown

Table 3A

Groundwater and Surface Water Results: Field-Measured Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Status	Background Category	Electrical Conductivity (uS/cm)	pH (pH units)	Temperature (deg C)	Sample Comment
CCME CEQG Freshwater Aquatic Life				---	(6.5 - 9)	---	
W-CAT-1				2355	8.1	---	
W-CAT-2				2600	8.0	---	
W-CAT-3				2954	8.5	---	
W-CAT-4				2780	8.7	---	
W-CAT-5				1392	7.7	---	
W-CAT-6				865	8.3	---	
W-CAT-7				1520	8.3	---	
W-CAT-8				514	8.5	---	
Mainland East - C-36X Blowout Site - Surface Water							
C36 SW01	05-Aug-2016	Active	**W-CAT-6**	1407	7.85	13.6	Light yellow, organic debris
	12-Aug-2017			1145	7.14	20.4	
	18-Aug-2017			1598	6.60	8.2	
	12-Jul-2018			805	6.33	15.0	Brown, organic material present
	15-Jul-2019			827	6.91	19.9	Slightly turbid, brown, algae
Mainland East - B-38X Well Site - Surficial Sediment							
B38 03-38-5	04-Aug-2016	Active	**W-CAT-1**	1158	6.67	8.3	Frost jacked 0.6m, loose in ground
	13-Aug-2017			1011	7.21	9.6	Frost jacked, hydrocarbon odour, sheen, grey water
	16-Aug-2017			2430	6.83	7.5	Dark brown
	18-Jul-2019			1398	7.40	8.5	
B38 08-2-4	03-Aug-2016	Active	**W-CAT-1**	1446	6.75	4.3	
	13-Aug-2017			---	---	---	No sample - Dry
	16-Aug-2017			6960	6.95	8.0	Light grey
	13-Jul-2019			---	---	---	Dry
B38-10-1-5	04-Aug-2016	Active	**W-CAT-5**	1160	7.03	7.0	
	16-Aug-2017			3750	7.09	12.0	Clear to brown
	18-Aug-2017			1184	7.00	5.5	Frost jacked approx. 15cm
	12-Jul-2018			1250	6.96	5.6	
	13-Jul-2019			1284	6.62	7.7	Grey, turbid
B38-10-2-5	04-Aug-2016	Active	**W-CAT-5**	1226	7.03	10.3	Sheen on field parameter cup / hydrocarbon odour
	16-Aug-2017			5520	6.85	6.9	Clear
	18-Aug-2017			1051	7.07	13.4	Sheen
	12-Jul-2018			1278	6.95	9.3	
	13-Jul-2019			1326	6.83	11.7	Hydrocarbon odour and turbid
B38-16-1-3	12-Aug-2017	Active	**W-CAT-5**	1304	6.69	13	
	13-Jul-2018			1449	6.21	11.7	Hydrocarbon odour/sheen, turbid, grey
	13-Jul-2019			1115	6.76	7.8	Sheen
B38-16-2-4	12-Aug-2017	Active	**W-CAT-5**	---	---	---	No sample - NAPL
	13-Jul-2019			---	---	---	No sample - NAPL
Mainland East - Fire Training Area - Surficial Sediment							
FTA 98-4-5	04-Aug-2016	Active	**W-CAT-3**	---	---	---	No field parameter. hydrocarbon odour/sheen
	13-Aug-2017			---	---	---	Brown globules, sheen. No field parameters
	16-Aug-2017			2350	7.19	9.9	Clear
	16-Jul-2018			---	---	---	Hydrocarbon odour and sheen no field parameters
	15-Jul-2019			---	---	---	Hydrocarbon odour and sheen no field parameters
FTA 99-2-4	04-Aug-2016	Active	**W-CAT-3**	---	---	---	No field parameter. hydrocarbon odour/sheen
	13-Aug-2017			---	---	---	No sample - NAPL
	16-Aug-2017			---	---	---	Limited sample, no field parameters. Brown, turbid
	16-Jul-2018			---	---	---	Hydrocarbon odour and sheen no field parameters
	15-Jul-2019			---	---	---	Hydrocarbon odour and sheen. No field parameters.
FTA 99-3-4	10-Sep-2016	Active	**W-CAT-3**	2180	7.16	9.8	---
	16-Aug-2017			5195	6.84	11.7	
	17-Aug-2017			---	---	---	Sheen. No field parameters
	16-Jul-2018			---	---	---	Sheen. No field parameters
	15-Jul-2019			---	---	---	Sheen. No field parameters
Mainland East - Reduced Crude Flare Pit - Surficial Sediment							
RCF 03-1-5	03-Aug-2016	Active	**W-CAT-1**	1070	6.77	9.5	Clear
	21-Aug-2017			1483	6.71	6.9	
	21-Jul-2018			1663	6.71	8.4	
	12-Jul-2019			1229	6.83	7.3	Slightly turbid
RCF 98-3-4	03-Aug-2016	Active	**W-CAT-1**	1351	6.91	10.4	Orange colour
	21-Aug-2017			1584	6.64	7.9	
	21-Jul-2018			1675	6.74	7.6	
	12-Jul-2019			1834	6.64	9.1	Orangey brown, silty
Mainland East - Reduced Crude Flare Pit - Surface Water							
RCF-16-SW01	03-Aug-2016	Active	**W-CAT-6**	1101	7.28	13.4	
	12-Jul-2019			1237	7.22	17.8	Yellow

Table 3A

Groundwater and Surface Water Results: Field-Measured Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Status	Background Category	Electrical Conductivity (uS/cm)	pH (pH units)	Temperature (deg C)	Sample Comment
CCME CEQG Freshwater Aquatic Life				---	(6.5 - 9)	---	
W-CAT-1				2355	8.1	---	
W-CAT-2				2600	8.0	---	
W-CAT-3				2954	8.5	---	
W-CAT-4				2780	8.7	---	
W-CAT-5				1392	7.7	---	
W-CAT-6				865	8.3	---	
W-CAT-7				1520	8.3	---	
W-CAT-8				514	8.5	---	
Mainland East - Mainland Tank Farm - Surficial Sediment							
MTF 98-4-5	06-Aug-2016	Active	**W-CAT-1**	1913	6.99	8.6	
	17-Aug-2017			---	---	---	Limited sample, brown globules, sheen hydrocarbon odour. Bentonite in bailer, no field parameters
	17-Aug-2017			1765	7.12	8.2	Brown, turbid
	16-Jul-2018			1734	7.06	12.7	
	18-Jun-2019			1711	6.96	9.2	
MTF 98-5-4	06-Aug-2016	Active	**W-CAT-1**	---	---	---	Globules in sample. No field parameters. hydrocarbon odour/S
	17-Aug-2017			---	---	---	Hydrocarbon odour/sheen, no field parameters
	17-Aug-2017			1862	6.93	13.9	Hydrocarbon odour/sheen
	16-Jul-2018			1332	7.18	13.0	Turbid, brown
	18-Jun-2019			1166	6.99	7.2	
TF 02-10-5	06-Aug-2016	Active	**W-CAT-1**	---	---	---	Insufficient water for field parameters. Grey, very silty, HC colour, black particulates
	16-Aug-2017			4180	6.36	14.3	Light brown
	17-Aug-2017			---	---	---	Limited sample, brown globules, sheen hydrocarbon odour. Bentonite in bailer, no field parameters
	16-Jul-2018			---	---	---	Sheen, no field parameters
	18-Jun-2019			1268	6.79	9.2	
TF 02-7-3	16-Aug-2017	Active	**W-CAT-1**	3790	6.93	10.6	
	17-Aug-2017			1862	6.93	13.9	Hydrocarbon odour/sheen
	16-Jul-2018			---	---	---	Sheen, hydrocarbon odour
	18-Jun-2019			---	---	---	Sheen, no field parameters
TF 02-9-3	17-Aug-2017	Active	**W-CAT-1**	---	---	---	Hydrocarbon odour/sheen, no field parameters
	15-Jul-2018			---	---	---	Sheen, black, no field parameters
	18-Jun-2019			---	---	---	Sheen, no field parameters
TF 03-11-4	06-Aug-2016	Active	**W-CAT-1**	1352	7.03	9.7	
	17-Aug-2017			1550	6.90	9.9	Brown, sheen
	16-Jul-2018			1413	6.9	9.5	
	18-Jun-2019			1408	7.03	5.6	
Mainland East - B-42X Well Site - Surficial Sediment							
B42-17-1-5	15-Oct-2017	Active	**W-CAT-1**	953	6.77	5.4	
	20-Jul-2018			1270	7.51	6.5	
	15-Jul-2019			1343	7.53	5.3	Grey and turbid
B42-17-2-4	15-Oct-2017	Active	**W-CAT-1**	630	6.82	4.0	Brown, turbid
	20-Jul-2018			814	7.32	7.7	Slightly turbid, brown
	14-Jul-2019			1055	7.30	6.1	Silty
B42-17-3-4	15-Oct-2017	Active	**W-CAT-1**	667	6.88	4.6	Brown, turbid
	20-Jul-2018			811	7.57	4.8	Slightly turbid, brown
	14-Jul-2019			---	---	---	Frozen
Mainland East - Former Refinery - Surficial Sediment							
NWR 02-12-7	05-Aug-2016	Active	**W-CAT-3**	---	---	---	Insufficient water
	13-Aug-2017			---	---	---	Limited sample, no field parameters
	20-Jul-2018			---	---	---	Limited sample, no field parameters
	15-Jul-2019			---	---	---	Limited sample, no field parameters
Mainland East - Former Refinery - Bedrock							
NWR 03-42-19	12-Mar-2016	Active	**W-CAT-3**	---	---	---	Clear-yellow free-phase on tape
	05-Aug-2016			---	---	---	Light brown and hydrocarbon odour
	13-Aug-2016			---	---	---	Free-phase on tape
	13-Aug-2017			---	---	---	No sample, NAPL
	14-Oct-2017			---	---	---	Medium brown
	15-Jul-2018			---	---	---	No sample, NAPL present
	17-Sep-2018			---	---	---	Free phase
	19-Jul-2019			---	---	---	No sample, NAPL present
NWR 03-43-20	12-Mar-2016	Active	**W-CAT-3**	---	---	---	Clear-yellow free-phase on tape
	13-Aug-2016			---	---	---	Light brown and non-viscous free-phase on tape
	13-Aug-2017			---	---	---	No sample, NAPL
	15-Jul-2018			---	---	---	No sample, NAPL present
	19-Jul-2019			---	---	---	No sample, NAPL present
NWR 09-2-26	12-Mar-2016	Active	**W-CAT-3**	2860	6.26	0.6	Clear, hydrocarbon odour and sheen
	05-Aug-2016			2870	7.28	6.1	Hydrocarbon sheen and odour / rechecked EC cal (1394 um/cm)
	13-Aug-2016			---	---	---	
	02-Nov-2016			1676	6.78	3.0	
	13-Aug-2017			8640	7.32	13.2	Sheen, clear to grey
	20-Jul-2018			8410	7.29	8.8	
	15-Jul-2019			2440	7.13	10.8	Turbid

Table 3A

Groundwater and Surface Water Results: Field-Measured Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Status	Background Category	Electrical Conductivity (uS/cm)	pH (pH units)	Temperature (deg C)	Sample Comment
CCME CEQG Freshwater Aquatic Life				---	(6.5 - 9)	---	
W-CAT-1				2355	8.1	---	
W-CAT-2				2600	8.0	---	
W-CAT-3				2954	8.5	---	
W-CAT-4				2780	8.7	---	
W-CAT-5				1392	7.7	---	
W-CAT-6				865	8.3	---	
W-CAT-7				1520	8.3	---	
W-CAT-8				514	8.5	---	
NWR 09-4-5	13-Aug-2016	Active	**W-CAT-3**	---	---	---	
	15-Mar-2017			---	---	---	Insufficient water for field parameters
	11-Apr-2017			---	---	---	Insufficient water for field parameters.
	16-Jun-2017			909	6.6	7.3	
	15-Aug-2017			---	---	---	No field parameters, brown globules in water
	14-Sep-2017			1184	6.89	10.8	
	14-Oct-2017			1.413	6.25	5.3	Turbid, Brown
	21-Nov-2017			1705	6.81	1.9	
	19-Dec-2017			1881	6.98	-1	
	17-Jan-2018			1730	6.87	7.9	Turbid
	20-Jul-2018			1452	6.81	9.6	
	18-Sep-2018			1825	6.56	7.4	Semi-turbid brown
	15-Jul-2019			2100	6.77	8.8	Silty, hydrocarbon odour
NWR 09-5-19	12-Mar-2016	Active	**W-CAT-3**	---	---	---	Grey, silty, hydrocarbon odour
	05-Aug-2016			2170	7.60	7.6	
	13-Aug-2016			---	---	---	
	13-Aug-2017			2800	7.09	15.1	Clear
	22-Jul-2018			5550	7.12	4.9	
	15-Jul-2019			5580	7.10	8.0	Clear
NWR 98-13-21	12-Mar-2016	Active	**W-CAT-3**	1918	7.22	0.7	Dark grey, hydrocarbon odour and sheen
	05-Aug-2016			1653	7.59	5.6	Sulfur odour
	15-Aug-2016			---	---	---	
	02-Nov-2016			1651	7.14	1.0	
	15-Aug-2017			1392	7.13	12.4	
	20-Jul-2018			1490	6.71	7.1	
	15-Jul-2019			2930	7.18	5.9	Grey and turbid, sulphur odour
NWR 98-23-21	12-Mar-2016	Active	**W-CAT-3**	---	---	---	Dark brown free-phase globules on tape with syrup-like viscosity
	05-Aug-2016			---	---	---	Dry
	15-Aug-2017			---	---	---	No sample, NAPL
	18-Jul-2018			---	---	---	No sample, NAPL present
	15-Jul-2019			---	---	---	No sample, NAPL present
C-27X Sump - Surficial Sediment							
C27-16-1-3	12-Aug-2017	Active	**W-CAT-1**	1027	6.26	9.5	Dark brown, sour odour
	15-Aug-2017			---	---	---	Dry - No sample
	11-Jul-2019			---	---	---	Dry
C27-16-2-3	03-Aug-2016	Active	**W-CAT-1**	2780	6.63	5.3	Sulphur odour, clear
	12-Aug-2017			1013	6.74	16.0	Clear
	15-Aug-2017			1636	6.74	8.6	
	13-Jul-2018			1616	5.70	5.8	
	11-Jul-2019			1878	6.63	4.0	Turbid
C27-16-3-4	13-Aug-2017	Active	**W-CAT-1**	---	---	---	Dry - No sample
	17-Aug-2017			1642	6.60	10.3	Clear
	11-Jul-2019			---	---	---	Dry, no field parameters
C27-16-4-3	03-Aug-2016	Active	**W-CAT-1**	1817	6.77	8.5	Hydrocarbon odour
	13-Aug-2017			1720	6.64	9.5	
	17-Aug-2017			1573	6.95	6.1	
	13-Jul-2018			1325	6.06	7.8	
	11-Jul-2019			1562	6.79	3.4	Brown, Turbid
Cemetery Sump - Surficial Sediment							
CEM 08-2-5	06-Aug-2015	Active	**W-CAT-1**	---	---	---	Insufficient water for field parameters
	03-Aug-2016			19000	6.42	4.3	Sheen, brown, very silty
	12-Aug-2017			---	---	---	DRY - no sample
	17-Aug-2017			---	---	---	DRY - no sample
	13-Jul-2018			---	---	---	DRY - no sample
	05-Jul-2019			---	---	---	DRY - no sample
CEM 08-4-5	06-Aug-2015	Active	**W-CAT-1**	3310	6.74	4.8	Brown, silty
	03-Aug-2016			3540	6.62	5.0	Brown, silty
	12-Aug-2017			---	---	---	DRY - no sample
	17-Aug-2017			---	---	---	DRY - no sample
	13-Jul-2018			---	---	---	DRY - no sample
	05-Jul-2019			---	---	---	DRY - no sample

Table 3A

Groundwater and Surface Water Results: Field-Measured Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Status	Background Category	Electrical Conductivity (uS/cm)	pH (pH units)	Temperature (deg C)	Sample Comment
CCME CEQG Freshwater Aquatic Life				---	(6.5 - 9)	---	
W-CAT-1				2355	8.1	---	
W-CAT-2				2600	8.0	---	
W-CAT-3				2954	8.5	---	
W-CAT-4				2780	8.7	---	
W-CAT-5				1392	7.7	---	
W-CAT-6				865	8.3	---	
W-CAT-7				1520	8.3	---	
W-CAT-8				514	8.5	---	
CEM 09-1-4	03-Aug-2016	Active	**W-CAT-1**	---	---	---	Dry at 5.05 mbtoc
	12-Aug-2017			---	---	---	DRY - no sample
	17-Aug-2017			---	---	---	DRY - no sample
	13-Jul-2018			---	---	---	DRY - no sample
	05-Jul-2019			---	---	---	DRY - no sample
CEM 09-3-2	06-Aug-2015	Active	**W-CAT-1**	7980	6.66	7.8	Brown, turbid, rotten egg odour, frac sand in well
	03-Aug-2016			440	6.51	7.6	Sulphur odour, grey
	17-Aug-2017			---	---	---	DRY - no sample
	13-Jul-2018			---	---	---	Insufficient water to sample
	05-Jul-2019			---	---	---	DRY - no sample
CEM-13-1-2	06-Aug-2015	Active	**W-CAT-1**	704	7.08	5.7	Dark grey, very silty, organic odour
	13-Jul-2018			---	---	---	DRY - no sample
	05-Jul-2019			---	---	---	Destroyed
Mainland Sumps - Surficial Sediment							
MLS 09-1-3	03-Aug-2016	Active	**W-CAT-1**	5840	7.24	10.3	Dedicated bailer in well / used for sampling
	13-Aug-2017			12590	6.68	6.3	
	16-Aug-2017			5195	6.84	11.7	
	19-Jul-2018			5840	6.70	12.3	
	18-Jul-2019			6.88	6.86	11.2	Silty
MLS 09-2-3	03-Aug-2016	Active	**W-CAT-1**	3840	7.31	9.9	Dedicated bailer in well / used for sampling
	12-Aug-2017			1032	7.09	6.8	Slight sulfur odour
	16-Aug-2017			3790	6.93	10.6	
	19-Jul-2018			3880	7.04	13.1	
	18-Jul-2019			4530	7.23	9.6	
MLS 09-5-3	03-Aug-2016	Active	**W-CAT-1**	3150	7.37	9.3	Dedicated bailer in well / used for sampling
	13-Aug-2017			107	6.69	10.2	
	16-Aug-2017			3390	6.76	10.2	
	19-Jul-2018			2790	6.81	11.4	Clear, sulfur odour
	18-Jul-2019			3560	7.25	9.1	
MLS 09-15-3	03-Aug-2016	Active	**W-CAT-1**	4520	7.26	9.0	Disposable bailer in well used for sampling
	15-Aug-2017			1636	6.74	8.6	
	16-Aug-2017			5710	7.43	11.1	
	19-Jul-2018			4630	6.83	11.4	
	18-Jul-2019			5400	6.79	8.6	
MLS-13-2-3	03-Aug-2016	Active	**W-CAT-1**	1579	7.69	5.1	Dedicated bailer installed. Light grey, turbid.
	11-Aug-2017			6.91	---	3100	Frost jacked
	16-Aug-2017			1730	7.38	4.3	
	19-Aug-2018			1194	8.02	11.3	Clear
	18-Jul-2019			1383	7.44	5.3	Slightly turbid
MLS-14-5-4	03-Aug-2016	Active	**W-CAT-1**	937	7.78	8.8	
	12-Aug-2017			---	---	---	Sheen, no field parameters
	16-Aug-2017			1000	6.96	9.9	
	19-Jul-2018			1212	7.11	13.0	Clear
	18-Jul-2019			1576	7.13	9.5	Clear
Mainland Sumps - Bedrock							
MLS 02-5-8	03-Aug-2016	Active	**W-CAT-3**	6700	7.16	9.0	Silty, brown
	16-Aug-2017			6920	7.13	9.2	
	18-Aug-2017			---	---	---	Limited sample - no field parameters
	19-Jul-2018			5720	7.42	7.4	Turbid, brown
	15-Jul-2019			6580	7.22	9.0	Silty brown
MLS-10-1-7	04-Aug-2016	Active	**W-CAT-3**	3990	7.19	6.5	
	12-Aug-2017			---	---	---	Dry - No sample
	16-Aug-2017			4600	7.55	7.3	
	19-Jul-2018			4410	7.54	9.3	Clear
	15-Jul-2019			5300	7.60	11.0	Clear
Mainland Drilling Sump - Surficial Sediments							
MLS-13-1-3	04-Aug-2016	Active	**W-CAT-3**	1442	7.33	11.1	
	16-Aug-2017			2040	6.85	12.1	Light brown
	19-Jul-2018			1939	7.01	12.2	Slightly turbid, brown
	13-Jul-2019			2100	7.09	8.4	Slightly turbid, brown

Table 3A

Groundwater and Surface Water Results: Field-Measured Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Status	Background Category	Electrical Conductivity (uS/cm)	pH (pH units)	Temperature (deg C)	Sample Comment
CCME CEQG Freshwater Aquatic Life				---	(6.5 - 9)	---	
W-CAT-1				2355	8.1	---	
W-CAT-2				2600	8.0	---	
W-CAT-3				2954	8.5	---	
W-CAT-4				2780	8.7	---	
W-CAT-5				1392	7.7	---	
W-CAT-6				865	8.3	---	
W-CAT-7				1520	8.3	---	
W-CAT-8				514	8.5	---	
Mainland Drilling Sump - Bedrock							
MLS 08-1-4	04-Aug-2016	Active	**W-CAT-3**	4190	7.38	12.2	
	13-Aug-2017			4290	7.16	6.7	
	16-Aug-2017			3750	7.09	12.0	Clear to brown
	21-Jul-2018			6000	7.11	13.8	
	13-Jul-2019			6000	7.23	12.5	Slightly turbid, brown
MLS 08-2-5	04-Aug-2016	Active	**W-CAT-3**	1887	7.46	9.5	Clear
	13-Aug-2017			2120	7.02	9.0	Sulfur odor
	16-Aug-2017			2350	7.19	9.9	Clear
	13-Jul-2019			---	---	---	Dry -obstructed
MLS 08-3-4	04-Aug-2016	Active	**W-CAT-3**	3520	7.40	12.0	
	13-Aug-2017			1690	7.13	18.6	
	16-Aug-2017			---	---	---	Limited sample, no field parameters. Brown, turbid
	19-Jul-2018			4190	7.44	15.4	Turbid, Brown
	13-Jul-2019			3890	6.75	10.7	Very turbid, silty, brown
Well Services Sump - Surficial Sediment							
MLS 09-9-2	04-Aug-2016	Active	**W-CAT-3**	5270	6.84	14.6	Slightly silty, brown, frost jacked
	12-Aug-2017			---	---	---	DRY - No sample
	16-Aug-2017			4180	6.36	14.3	Light brown
	19-Jul-2018			5540	6.73	15.8	
	14-Jul-2019			5070	6.15	11.2	Very turbid, brown
MLS-13-3-3	05-Aug-2016	Active	**W-CAT-3**	1518	7.67	10.0	Brown, sulphur odour
	11-Aug-2017			---	---	---	Limited sample, no field parameters
	16-Aug-2017			2010	6.81	8.6	Clear
	19-Jul-2018			2330	6.86	9.4	
	14-Jul-2019			2500	6.32	5.4	Clear
MLS-13-4-3	05-Aug-2016	Active	**W-CAT-3**	767	6.80	10.4	Brown, silty
	11-Aug-2017			1245	6.81	21.2	
	16-Aug-2017			1173	6.56	10.2	Clear
	19-Jul-2018			963	6.77	9.5	
	14-Jul-2019			954	6.04	6.6	Turbid, brown
Well Services Sump - Bedrock							
MLS 02-7-7	04-Aug-2016	Active	**W-CAT-3**	2430	7.24	13.5	Silty, light brown in color
	16-Aug-2017			2430	6.83	7.5	Dark brown
	18-Aug-2017			---	---	---	Limited sample - no field parameters
	19-Jul-2018			2290	6.51	8.1	
	14-Jul-2019			2010	5.72	3.8	Slightly turbid, brown
MLS 02-8-8	04-Aug-2016	Active	**W-CAT-3**	8470	7.20	9.5	Clear
	16-Aug-2017			6960	6.95	8.0	Light grey
	18-Aug-2017			---	---	---	Limited sample - no field parameters
	19-Jul-2018			8710	6.81	6.2	
	14-Jul-2019			8420	6.08	3.2	Clear
MLS 02-9-8	04-Aug-2016	Active	**W-CAT-3**	6740	7.46	9.3	Hydrocarbon odour, grey color
	13-Aug-2017			---	---	---	Limited sample - no field parameters
	16-Aug-2017			5520	6.85	6.9	Clear
	19-Jul-2018			6640	7.05	10.4	
	14-Jul-2019			6200	7.02	5.3	Clear
MLS 02-10-8	04-Aug-2016	Active	**W-CAT-3**	5330	7.81	9.0	Hydrocarbon odour, grey color
	13-Aug-2017			2620	6.72	8.2	
	16-Aug-2017			4200	7.22	7.8	Clear
	19-Jul-2018			5570	7.92	13.0	
	14-Jul-2019			5500	7.05	5.8	Clear
MLS-10-2-3	04-Aug-2016	Active	**W-CAT-3**	3600	7.44	13.0	Clear
	13-Aug-2017			1720	6.64	9.5	
	16-Aug-2017			2840	6.87	10.0	Clear
	19-Jul-2018			4860	6.77	13.5	
	14-Jul-2019			4000	6.35	5.4	Clear
Mainland Background - Surficial Sediment							
MCBG-16-5-4	15-Jul-2019	Destroyed	**W-CAT-1**	---	---	---	No field parameters, well destroyed

Table 3A

Groundwater and Surface Water Results: Field-Measured Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Status	Background Category	Electrical Conductivity (uS/cm)	pH (pH units)	Temperature (deg C)	Sample Comment
CCME CEQG Freshwater Aquatic Life				---	(6.5 - 9)	---	
W-CAT-1				2355	8.1	---	
W-CAT-2				2600	8.0	---	
W-CAT-3				2954	8.5	---	
W-CAT-4				2780	8.7	---	
W-CAT-5				1392	7.7	---	
W-CAT-6				865	8.3	---	
W-CAT-7				1520	8.3	---	
W-CAT-8				514	8.5	---	
Bear Island - Bear Island West Sumps (Sumps 1-5) - Surficial Sediment							
BI-08-6-4	08-Aug-2016	Active	**W-CAT-2**	3520	7.07	12.1	
	11-Aug-2017			3360	6.98	13.1	Frost jacked, silty
	17-Aug-2017			1515	6.74	7.2	
	17-Jul-2018			3800	7.06	9.6	
	17-Jul-2019			3370	6.92	7.4	
BI-08-8-4	08-Aug-2016	Active	**W-CAT-2**	5870	6.98	9.4	Faint HC odour
	11-Aug-2017			6.91	---	3100	Frost jacked
	12-Aug-2017			---	---	---	No sample, Dry
	15-Jul-2018			4520	6.60	5.6	
	17-Jul-2019			---	---	---	Insufficient water for field parameters
BI-13-18-3	12-Aug-2017	Active	**W-CAT-2**	---	---	---	Dry, no sample
	14-Aug-2017			---	---	---	Dry, no sample
	12-Jul-2019			---	---	---	Dry, no sample
BI-13-5-2	10-Aug-2016	Active	**W-CAT-2**	---	---	---	No field parameter. Limited water.
	10-Aug-2017			572	7.79	21.7	
	14-Aug-2017			---	---	---	Dry, no sample
	17-Jul-2019			---	---	---	Dry, no sample
BI DP 08-5	10-Aug-2016	Active	**W-CAT-2**	2720	6.82	10.0	
	11-Aug-2017			---	---	---	Limited sample, no field parameters
	12-Aug-2017			---	---	---	No sample, NAPL
	20-Jul-2018			2450	7.14	6.6	
	17-Jul-2019			---	---	---	Frozen, no field parameters
BIS-10-3-DP	11-Aug-2017	Active	**W-CAT-2**	---	---	---	Limited sample, no field parameters
	11-Aug-2017			1473	8.08	28.3	
	15-Jul-2018			1695	6.46	8.7	Turbid, brown
	17-Jul-2019			1566	7.31	7.6	Silty
BIS-16-1-3	09-Aug-2016	Active	**W-CAT-2**	2430	6.57	11.8	Brown silty
	10-Aug-2017			1738	6.72	13.1	
	15-Aug-2017			1281	7.06	10.1	
	17-Jul-2018			2110	6.93	7.5	
	17-Jul-2019			2480	6.87	7.7	Turbid, brown
BIS-16-7-5	08-Aug-2016	Active	**W-CAT-2**	3320	6.82	8.3	Hydrocarbon odour
	11-Aug-2017			2570	7.16	11.8	
	12-Aug-2017			---	---	---	Dry, no sample
	15-Jul-2018			3140	6.31	5.9	
	17-Jul-2019			---	---	---	Insufficient water for field parameters.
BIS-16-8-3	08-Aug-2016	Active	**W-CAT-2**	3.39	6.33	7.4	
	11-Aug-2017			2950	6.68	7.5	
	12-Aug-2017			---	---	---	Dry, no sample
	15-Jul-2018			2550	6.49	7.8	Clear
	17-Jul-2019			2420	7.16	7.3	Slightly turbid, brown
BIS-16-10-4	11-Aug-2016	Active	**W-CAT-2**	3670	6.81	7.0	Metallic odour
	11-Aug-2017			---	---	---	Limited sample, no field parameters
	11-Aug-2017			2440	6.95	8.5	Silty, light brown
	20-Jul-2018			2380	6.90	6.5	
	17-Jul-2019			---	---	---	
BIS-16-11-4	10-Aug-2016	Active	**W-CAT-2**	3970	6.07	11.0	
	11-Aug-2017			2660	6.93	10.9	Silty, light brown
	20-Jul-2018			3920	6.79	4.8	
	17-Jul-2019			---	---	---	
BIS-16-12-5	08-Aug-2016	Active	**W-CAT-2**	3060	6.88	6.0	Hydrocarbon odour
	11-Aug-2017			2380	7.18	7.9	
	17-Jul-2019			2720	6.89	5.4	Black, hydrocarbon odour
Bear Island - Bear Island West Sumps (Sumps 1-5) - Surface Water							
BI SW01	11-Aug-2017	Active	**W-CAT-7**	1245	6.81	21.2	
	18-Jul-2018			1053	7.13	13.6	Clear
	17-Jul-2019			470	7.53	21.9	Slightly brown
BI SW03	10-Aug-2016	Active	**W-CAT-7**	1414	7.10	19.9	
	10-Aug-2017			1738	6.72	13.1	
	11-Aug-2017			1377	7.65	25.3	
	20-Jul-2018			980	6.88	15.1	
	17-Jul-2019			---	---	---	

Table 3A

Groundwater and Surface Water Results: Field-Measured Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Status	Background Category	Electrical Conductivity (uS/cm)	pH (pH units)	Temperature (deg C)	Sample Comment
CCME CEQG Freshwater Aquatic Life				---	(6.5 - 9)	---	
W-CAT-1				2355	8.1	---	
W-CAT-2				2600	8.0	---	
W-CAT-3				2954	8.5	---	
W-CAT-4				2780	8.7	---	
W-CAT-5				1392	7.7	---	
W-CAT-6				865	8.3	---	
W-CAT-7				1520	8.3	---	
W-CAT-8				514	8.5	---	
BI SW04	10-Aug-2016	Active	**W-CAT-7**	1440	6.99	20.4	
	11-Aug-2017			1473	8.08	28.3	
	20-Jul-2018			1218	7.52	14.5	
	17-Jul-2019			---	---	---	
BI SW05	10-Aug-2016	Active	**W-CAT-7**	1374	6.79	19.5	
	11-Aug-2017			1348	7.38	28.1	
	20-Jul-2018			1078	7.21	13.8	
	17-Jul-2019			---	---	---	
BI SW06	10-Aug-2016	Active	**W-CAT-7**	551	6.96	18.6	
	14-Aug-2017			**4510**	7.34	17.0	
	18-Aug-2017			691	8.33	14.1	Clear
	20-Jul-2018			**3000**	7.66	13.8	
	17-Jul-2019			---	---	---	
BI-13-11	10-Aug-2016	Active	**W-CAT-7**	544	6.87	19	
	14-Aug-2017			843	6.87	17.5	
	15-Aug-2017			1148	6.80	10.9	
	18-Jul-2018			403	8.74	15.5	Clear
	17-Jul-2019			582	8.51	22.0	Slightly turbid
Bear Island - R-36X Well Site - Surficial Sediment							
R36-16-1-5	17-Jul-2019	Active	**W-CAT-2**	---	---	---	Dry, no sample
R36-16-3-4	17-Jul-2019	Active	**W-CAT-2**	---	---	---	Dry, no sample
R36-16-4-4	17-Jul-2019	Active	**W-CAT-2**	---	---	---	Dry, no sample
R36-16-6-4.5	17-Jul-2019	Active	**W-CAT-2**	---	---	---	Dry, no sample
R36-16-9-4	17-Jul-2019	Active	**W-CAT-2**	---	---	---	Dry, no sample
Bear Island - Former Bear Island Battery - Surficial Sediment							
BI-14-13-3	09-Aug-2016	Active	**W-CAT-2**	1055	6.71	16.9	
	11-Aug-2017			885	7.23	14.1	Flushmount casing not in ground
	15-Jul-2018			756	**6.17**	13.0	Turbid, brown
	16-Jul-2019			1210	7.11	13.2	Grey and turbid
BI BT1 09-1-4	08-Aug-2016	Active	**W-CAT-2**	**3610**	6.50	6.5	Orange water. Silty.
	10-Aug-2017			**2820**	6.63	8.9	Orange colored water
	17-Jul-2018			**3390**	6.73	6.6	
	16-Jul-2019			**3530**	6.54	7.8	Turbid
BIBT1-15-1-3.5	08-Aug-2016	Active	**W-CAT-2**	2520	6.74	10.0	Yellowish hydrocarbon odour
	10-Aug-2017			2220	7.04	9.8	
	17-Jul-2018			2270	7.24	7.3	
	16-Jul-2019			2280	**6.41**	7.4	Hydrocarbon odour. Turbid, brown.
BIBT1-15-2-4	08-Aug-2016	Active	**W-CAT-2**	1692	6.84	10.8	Hydrocarbon odour. Grey water
	10-Aug-2017			1992	7.15	9.9	
	17-Jul-2018			2070	7.21	8.4	Black, hydrocarbon odour
	16-Jul-2019			2140	7.14	5.0	Black, hydrocarbon odour
BIBT1-15-4-4	08-Aug-2016	Active	**W-CAT-2**	---	---	---	Dry
	11-Aug-2017			1427	6.87	16.5	
	15-Jul-2018			**6100**	**5.80**	11.9	
	16-Jul-2019			780	**6.43**	9.5	Brown, turbid, silty
BIBT1-15-5-3	08-Aug-2016	Active	**W-CAT-2**	874	6.71	11.1	Brown
	11-Aug-2017			497	7.03	11.1	
	15-Jul-2018			---	---	---	Could not locate
	17-Jul-2019			---	---	---	Could not locate
BIBT1-15-7-4	08-Aug-2016	Active	**W-CAT-2**	---	---	---	Grey, cloudy
	11-Aug-2017			816	6.84	10.0	Clear
	15-Jul-2018			1558	**6.08**	7.3	Sheen, turbid, brown
	16-Jul-2019			1095	6.87	12.9	Silty
BIBT1-16-1-3	11-Aug-2017	Active	**W-CAT-2**	1690	6.81	12.1	
	15-Jul-2018			737	**6.40**	10.7	Turbid, brown
	16-Jul-2019			1174	6.74	9.9	Silty and grey
BIBT1-16-2-3	11-Aug-2017	Active	**W-CAT-2**	1510	6.68	11.2	
	15-Jul-2018			950	**6.20**	9.3	Turbid
	16-Jul-2019			---	---	---	
BIBT1-16-3-3	11-Aug-2017	Active	**W-CAT-2**	717	6.89	17.4	
	15-Jul-2018			409	6.60	11.4	Turbid brown
	16-Jul-2019			---	**6.47**	13.5	Brown, turbid, silty

Table 3A

Groundwater and Surface Water Results: Field-Measured Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Status	Background Category	Electrical Conductivity (uS/cm)	pH (pH units)	Temperature (deg C)	Sample Comment
CCME CEQG Freshwater Aquatic Life				---	(6.5 - 9)	---	
W-CAT-1				2355	8.1	---	
W-CAT-2				2600	8.0	---	
W-CAT-3				2954	8.5	---	
W-CAT-4				2780	8.7	---	
W-CAT-5				1392	7.7	---	
W-CAT-6				865	8.3	---	
W-CAT-7				1520	8.3	---	
W-CAT-8				514	8.5	---	
Bear Island - Bear Island East Sump (Sump 6) - Surficial Sediment							
BI-08-2-3	12-Aug-2017	Active	**W-CAT-2**	1318	6.55	8.1	Clear
	15-Aug-2017			4440	6.75	9.5	
	18-Jul-2018			4680	7.05	9.6	Slightly turbid
	12-Jul-2019			6160	6.71	10.1	Orange/red
BI-13-2-4.5	14-Aug-2017	Active	**W-CAT-2**	4510	7.34	17.0	
	15-Aug-2017			1281	7.06	10.1	
	12-Jul-2019			---	---	---	Well damaged, no sample
BIWS-16-1-4	15-Aug-2017	Active	**W-CAT-2**	3100	6.72	8.1	Light brown
	18-Jul-2018			2530	7.17	4.0	Slightly turbid
	12-Jul-2019			---	---	---	No field parameters, limited sample
Bear Island - Bear Island East Sump (Sump 6) - Surface Water							
BI SW-13-1	11-Aug-2016	Active	**W-CAT-7**	354	6.56	12.8	
	14-Aug-2017			415	7.00	16.5	
	18-Jul-2018			355	7.20	16.7	Clear
	12-Jul-2019			298	7.95	17.4	Clear
BIS6-17-SW01	18-Jul-2018	Active	**W-CAT-7**	431	7.76	15.6	
	12-Jul-2019			520	7.34	15.6	Clear
Bear Island - N-42X Well Site - Surficial Sediment							
BIB 98-2-5	08-Aug-2016	Active	**W-CAT-2**	3150	6.64	11.5	
	10-Aug-2017			3000	6.83	9.2	Disposable bailer needed, silty
	17-Jul-2018			3390	6.82	8.6	
	17-Jul-2019			3280	6.54	5.7	Slightly turbid, brown
BIN42-10-1-5	08-Aug-2016	Active	**W-CAT-2**	2880	6.67	10.8	Brown
	10-Aug-2017			3410	6.46	13.2	Clear to brown
	17-Jul-2018			3460	6.76	9.0	Slightly turbid
	17-Jul-2019			3130	6.78	7.4	Orange and turbid
BIN42-10-2-4	08-Aug-2016	Active	**W-CAT-2**	---	---	---	Dry
	10-Aug-2017			---	---	---	Dry, no sample
	12-Aug-2017			---	---	---	Dry, no sample
	17-Jul-2019			---	---	---	Dry
Bear Island - N-42X Well Site - Surface Water							
BIN42-SW01	08-Aug-2016	Active	**W-CAT-7**	375	7.60	19.5	
	10-Aug-2017			7.66	---	289	
	17-Jul-2018			407	7.97	21.4	Clear
	17-Jul-2019			314	7.25	21.3	Clear, algae
Bear Island - Former Bear Island Flare Pit - Surficial Sediment							
BIFP-16-1-3	10-Aug-2017	Active	**W-CAT-2**	958	7.64	11.5	
	20-Jul-2018			1090	6.95	6.9	
	12-Jul-2019			958	6.92	6.1	Silty
BIFP-16-2-3	10-Aug-2017	Active	**W-CAT-2**	653	7.48	11.9	
	20-Jul-2018			505	6.30	7.4	
	12-Jul-2019			1275	6.94	5.2	Silty
BIFP-16-3-3	10-Aug-2017	Active	**W-CAT-2**	561	7.34	9.3	
	20-Jul-2018			593	6.00	7.1	
	12-Jul-2019			758	6.80	7.1	Silty
BIFP-17-1-3	15-Oct-2017	Active	**W-CAT-2**	796	6.33	4.9	Brown, turbid
	20-Jul-2018			937	6.63	7.6	
	12-Jul-2019			910	6.46	11.5	Silty
Bear Island - Former Bear Island Flare Pit - Surface Water							
BI SW09	08-Aug-2016	Active	**W-CAT-7**	349	6.93	16.4	
	10-Aug-2017			572	7.79	21.7	
	20-Jul-2018			354	6.85	14.6	
	12-Jul-2019			384	6.92	15.3	Clear
BIFP-16-SW1	10-Aug-2017	Active	**W-CAT-7**	348	7.91	23.3	
	20-Jul-2018			294	6.77	14.9	
	12-Jul-2019			320	7.59	16.1	Turbid
BIFP-17-SW2	20-Jul-2018	Active	**W-CAT-7**	377	6.68	13.3	
	12-Jul-2019			326	7.07	15.6	Turbid

Table 3A

Groundwater and Surface Water Results: Field-Measured Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Status	Background Category	Electrical Conductivity (uS/cm)	pH (pH units)	Temperature (deg C)	Sample Comment
CCME CEQG Freshwater Aquatic Life				---	(6.5 - 9)	---	
W-CAT-1				2355	8.1	---	
W-CAT-2				2600	8.0	---	
W-CAT-3				2954	8.5	---	
W-CAT-4				2780	8.7	---	
W-CAT-5				1392	7.7	---	
W-CAT-6				865	8.3	---	
W-CAT-7				1520	8.3	---	
W-CAT-8				514	8.5	---	
Goose Island - Surficial Sediment							
GIP9 09-1-4	07-Aug-2016	Active	**W-CAT-2**	1914	6.58	8.7	Silty
	20-Aug-2017			---	---	---	Limited sample, no field parameters
	16-Jul-2019			---	---	---	Dry, no sample
Goose Island - Surface Water							
GI SW05	20-Aug-2017	Active	**W-CAT-8**	299	8.39	17.4	Clear
	30-Aug-2019			186.5	8.55	13.2	

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1).

6. Background 95th Percentile Statistical Categories:
W-CAT-1 : Mainland Locations - Surficial Sediments - 95th Percentile Background
W-CAT-2: Bear, Goose, and Frenchy's Islands - Surficial Sediments - 95th Percentile Background
W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background
W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background
W-CAT-5: Surficial Sediments - Natural Gas & Non-Saline Water Seepage - 95th Percentile Background
W-CAT-6: Mainland Surface Water - 95th Percentile Background
W-CAT-7: Bear Island Surface Water - 95th Percentile Background
W-CAT-8: Goose Island Surface Water - 95th Percentile Background

Table 3B
Porewater Quality: Field Measurements

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Water Sampled	Dissolved Oxygen (mg/L)	Electrical Conductivity (uS/cm)	pH (pH Units)	Temperature (ºC)	Sample Comment
Refinery Bank Porewater - 2018 Locations							
PW-18-1	18-Jul-2018	SW	10.76	186.3	7.02	15.4	
	18-Jul-2018	PW start	4.93	2610	3.99	7.8	
	18-Jul-2018	PW end	4.58	2680	3.90	7.9	
PW-18-2	18-Jul-2018	SW	10.31	310.8	6.99	15.1	
	18-Jul-2018	PW start	2.04	2116	5.65	12.9	
	18-Jul-2018	PW end	2.11	2122	5.60	13.6	
PW-18-3	18-Jul-2018	SW	8.93	366.2	6.8	14.4	
	18-Jul-2018	PW start	0.31	1651	5.66	12.3	
	18-Jul-2018	PW end	0.38	1718	5.57	12.4	
PW-18-4	18-Jul-2018	SW	9.54	275.5	7.06	14.3	
	18-Jul-2018	PW start	0.7	1515	6.07	10.7	
	18-Jul-2018	PW end	0.62	1518	6.07	10.8	
PW-18-5	18-Jul-2018	SW	9.47	256.5	7.38	14.5	
	18-Jul-2018	PW start	1.01	1196	6.27	13.0	
	18-Jul-2018	PW end	1.15	1185	6.49	12.9	
PW-18-6	18-Jul-2018	SW	9.08	257.6	7.14	16.2	
	18-Jul-2018	PW start	0.57	1006	6.52	14.7	
	18-Jul-2018	PW end	0.46	995	6.55	15.8	
PW-18-7	19-Jul-2018	SW	8.83	268	7.40	15.2	
	19-Jul-2018	PW start	4.46	405.4	7.10	16.2	
	19-Jul-2018	PW end	4.98	400.4	6.99	16.4	
PW-18-8	19-Jul-2018	SW	8.06	270	7.77	16.5	
	19-Jul-2018	PW start	5.61	383.4	6.96	16.6	
	19-Jul-2018	PW end	5.37	375.7	7.01	17.2	
PW-18-9	19-Jul-2018	SW	8.1	273.1	6.39	17.6	
	19-Jul-2018	PW start	0.20	1053	6.44	14.3	
	19-Jul-2018	PW end	0.32	1029	6.65	15.2	
PW-18-10	19-Jul-2018	SW	8.1	273.1	6.39	17.6	
	19-Jul-2018	PW start	0.22	1859	6.22	11.1	
	19-Jul-2018	PW end	0.24	1870	6.61	11.1	
PW-18-11	19-Jul-2018	SW	8.1	273.1	6.39	17.6	
	19-Jul-2018	PW start	0.24	2579	6.16	15.9	
	19-Jul-2018	PW end	0.67	2580	6.28	14.4	

Table 3B
Porewater Quality: Field Measurements

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Water Sampled	Dissolved Oxygen (mg/L)	Electrical Conductivity (uS/cm)	pH (pH Units)	Temperature (ºC)	Sample Comment
PW-18-12	19-Jul-2018	SW	7.98	249.6	7.57	19.2	
	19-Jul-2018	PW start	5.72	326.7	6.99	21.9	
	19-Jul-2018	PW end	4.10	245.1	6.92	22.7	
Refinery Bank Porewater - 2019 Locations							
PW-19-1	26-Sep-2019	SW	13.71	166	6.84	5.74	
	26-Sep-2019	PW start	0.37	678	6.94	6.12	
	26-Sep-2019	PW end	0.36	683	6.94	6.14	
PW-19-2	26-Sep-2019	SW	13.71	166	6.84	5.74	
	26-Sep-2019	PW start	0.39	1517	6.83	6.05	
	26-Sep-2019	PW end	0.38	1520	6.84	6.29	
PW-19-3	26-Sep-2019	SW	13.14	253	7.83	7.67	
	26-Sep-2019	PW start	0.48	658	7.28	5.86	
	26-Sep-2019	PW end	0.37	649	7.23	6.36	
PW-19-4	26-Sep-2019	SW	15.6	150	7.44	2.04	
	26-Sep-2019	PW start	1.2	282	6.89	0.71	
	26-Sep-2019	PW end	1.03	284	7.42	1.25	
PW-19-5	26-Sep-2019	SW	12.73	261	7.78	8.61	
	26-Sep-2019	PW start	0.38	443	7.18	8.75	
	26-Sep-2019	PW end	0.31	440	7.23	8.87	
PW-19-6	26-Sep-2019	SW	16.3	149	8.01	2.8	
	26-Sep-2019	PW start	0.66	312	7.46	3.51	
	26-Sep-2019	PW end	0.4	319	7.49	4.27	
PW-19-7	26-Sep-2019	SW	12.8	262	7.79	8.58	
	26-Sep-2019	PW start	0.84	476	7.1	9.72	
	26-Sep-2019	PW end	0.19	483	7.11	10.01	
PW-19-8	26-Sep-2019	SW	14.97	164	7.98	2.94	
	26-Sep-2019	PW start	0.80	334	7.16	2.60	
	26-Sep-2019	PW end	0.58	364	7.37	5.23	
PW-19-9	26-Sep-2019	SW	12.89	258	7.76	8.67	
	26-Sep-2019	PW start	0.42	535	7	8.44	
	26-Sep-2019	PW end	---	531	6.87	8.32	
PW-19-10	26-Sep-2019	SW	12.85	260	7.76	8.22	
	26-Sep-2019	PW start	---	---	---	---	Not Measured - No Flow
	26-Sep-2019	PW end	---	---	---	---	Not Measured - No Flow

Table 3B
Porewater Quality: Field Measurements

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Water Sampled	Dissolved Oxygen (mg/L)	Electrical Conductivity (uS/cm)	pH (pH Units)	Temperature (ºC)	Sample Comment
PW-19-11	26-Sep-2019	SW	15.74	285	6.79	1.06	
	26-Sep-2019	PW start	3.54	1020	6.55	-0.71	
	26-Sep-2019	PW end	4.79	774	6.67	-0.67	
PW-19-12	26-Sep-2019	SW	15.42	286	7.94	1.27	
	26-Sep-2019	PW start	---	---	---	---	Not Measured - No Flow
	26-Sep-2019	PW end	---	---	---	---	Not Measured - No Flow
PW-19-13	26-Sep-2019	SW	15.23	287	7.83	1.36	
	26-Sep-2019	PW start	0.82	779	7.35	-0.37	
	26-Sep-2019	PW end	0.28	776	7.41	0.06	
PW-19-14	26-Sep-2019	SW	14.95	282	7.93	1.72	
	26-Sep-2019	PW start	0.4	872	7.14	0.4	
	26-Sep-2019	PW end	0.46	878	7.17	0.6	
PW-19-15	26-Sep-2019	SW	15.03	279	7.88	2.01	
	26-Sep-2019	PW start	0.34	890	7.1	0.95	
	26-Sep-2019	PW end	0.8	902	7.11	-20	
PW-19-16	26-Sep-2019	SW	15.55	259	7.81	2.06	
	26-Sep-2019	PW start	0.81	673	6.88	0.38	
	26-Sep-2019	PW end	0.74	676	6.88	-0.08	
PW-19-17	26-Sep-2019	SW	15.56	286	7.85	1.98	
	26-Sep-2019	PW start	1.43	726	7.28	1.29	
	26-Sep-2019	PW end	0.54	753	7.31	1.87	

NOTES:

1. SW denotes surface water sample measured at porewater location.
2. PW start denotes porewater sample measured at the beginning of sampling.
3. PW end denotes porewater sample measured at the end of sampling.

Advisian
Worley Group

Table 4A

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
Mainland West - Central Processing Facility - Surficial Sediment																					
CPF 98-6-3	06-Aug-2016	**W-CAT-1**	---	---	---	---	---	370	8.0	21	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2017		---	---	---	---	---	410	8.0	41	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2018		---	---	---	---	---	300	6.2	13	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Jul-2018		---	---	---	---	---	300	6.3	13	---	---	---	---	---	---	---	---	---	---	---
	19-Jun-2019		---	---	---	---	---	610 [#1]	6.9	36	---	---	---	---	---	---	---	---	---	---	---
Mainland West - Central Processing Facility - Bedrock																					
CPF 97-2-7	06-Aug-2016	**W-CAT-3**	---	---	34	8.0	---	35	4.1	660 [#1]	---	---	2700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	17-Aug-2017		---	---	31	7.4	---	34	3.5	640 [#1]	---	---	2600	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	20-Jul-2018		---	---	27	12	---	---	---	---	---	---	2400	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	11-Jul-2019		---	---	25	14	---	---	---	---	---	---	2400	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
CPF 09-6-19	06-Aug-2016	**W-CAT-3**	---	---	11	140	---	31	4.1	480	---	---	2200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	12-Aug-2017		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2017		---	---	8.6	92	---	69	3.6	380	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	16-Jul-2018		---	---	---	---	---	58	3.5	370	---	---	---	---	---	---	---	---	---	---	---
	19-Jun-2019		---	---	---	---	---	82	1.8	170	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Jun-2019		---	---	---	---	---	82	1.8	170	---	---	---	---	---	---	---	---	---	---	---
Mainland West - E-27X Well Site - Bedrock																					
E27 09-2-16	03-Aug-2016	**W-CAT-3**	---	---	190	200 [#2]	---	---	---	---	---	---	3100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
(Duplicate)	03-Aug-2016		---	---	180 [#2]	180	---	---	---	---	---	---	3200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	20-Aug-2017		---	---	190 [#2]	140	---	---	---	---	---	---	3200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	16-Jul-2018		---	---	200 [#1]	74	---	---	---	---	---	---	3200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	16-Jul-2018		---	---	200 [#1]	75	---	---	---	---	---	---	3200	---	---	< 0.44	< 0.10 [#2]	< 0.33	**< 0.10 [#2]**	< 0.14	---
	11-Jul-2019		---	---	210 [#1]	52	---	---	---	---	---	---	3100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	11-Jul-2019		---	---	210 [#1]	74	---	---	---	---	---	---	3200	---	---	< 0.44	< 0.10 [#2]	< 0.33	**< 0.10 [#2]**	< 0.14	---
Mainland Central - Biocells / B-33X Well Site - Surficial Sediment																					
ARB-10-2-3	04-Aug-2016	**W-CAT-1**	---	---	12	140	---	87	1.2	11	---	---	640	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	12-Aug-2017		---	---	10	120	---	110	1.1	14	---	---	810	---	---	0.24	0.055	< 0.033	< 0.010	0.055	---
	11-Jul-2018		---	---	10	110	---	90	1.6	11	---	---	560	---	---	0.44	0.098	< 0.033	< 0.010	0.098	---
	11-Jul-2019		---	---	8.0	140	---	110	1.4	7.0	---	---	710	---	---	0.50	0.11	< 0.033	< 0.010	0.11	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
ARB-12-1-4	04-Aug-2016	**W-CAT-1**	---	---	10	130	---	120	1.5	5.0	---	---	740	---	---	1.3	0.28	< 0.033	< 0.010	0.28	---
	12-Aug-2017		---	---	10	170	---	130	1.5	5.3	---	---	840	---	---	1.1	0.24	< 0.033	< 0.010	0.24	---
	11-Jul-2018		---	---	8.1	150	---	120	1.3	5.8	---	---	710	---	---	2.1	0.46	0.035	0.011	0.48	---
	11-Jul-2019		---	---	8.7	160	---	120	1.3	4.8	---	---	760	---	---	2.3	0.53	< 0.033	< 0.010	0.53	---
ARB-12-4-2	04-Aug-2016	**W-CAT-1**	---	---	9.1	240 #1	---	190	1.9	6.6	---	---	1000	---	---	0.83	0.19	0.039	0.012	0.20	---
	12-Aug-2017		---	---	8.8	340 #1	---	180	1.7	5.1	---	---	1100	---	---	0.42	0.094	< 0.033	< 0.010	0.094	---
	11-Jul-2018		---	---	9.8	240 #1	---	160	1.5	5.0	---	---	830	---	---	0.95	0.21	< 0.033	< 0.010	0.21	---
	11-Jul-2019		---	---	9.5	220 #1	---	150	1.5	5.6	---	---	840	---	---	1.6	0.36	< 0.033	< 0.010	0.36	---
ARB-13-1-4.5	04-Aug-2016	**W-CAT-1**	910	< 0.50	29	180	< 0.50	150	2.2	44	750	< 0.50	1600	860	970	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0056
	12-Aug-2017		800	< 0.50	22	160	< 0.50	140	1.7	44	650	< 0.50	1400	740	880	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0057
	11-Jul-2018		---	---	21	160	---	140	1.8	36	---	---	1400	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	13-Jul-2019		---	---	17	140	---	150	1.7	38	---	---	1400	---	---	0.060	0.014	< 0.033	< 0.010	< 0.014	---
ARB-13-3-4.5	04-Aug-2016	**W-CAT-1**	970	< 0.50	5.0	31	< 0.50	35	2.9	280	800	< 0.50	1500	180	900	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0052
	12-Aug-2017		1100	< 0.50	15	18	< 0.50	39	2.9	320	870	< 0.50	1600	200	950	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0070
	12-Jul-2018		---	---	13	17	---	42	3.1	340	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	11-Jul-2019		---	---	18	13	---	40	3.0	350	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
ARB-13-5-4.5	04-Aug-2016	**W-CAT-1**	700	< 0.50	8.2	110	< 0.50	71	2.3	120	570	< 0.50	1200	390	750	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0064
(Duplicate)	04-Aug-2016		680	< 0.50	8.1	91	< 0.50	71	2.3	120	550	< 0.50	1200	390	790	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0067
	12-Aug-2017		650	< 0.50	16	110	< 0.50	110	2.6	130	530	< 0.50	1200	480	760	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0044
(Duplicate)	12-Aug-2017		650	< 0.50	14	98	< 0.50	110	2.6	130	530	< 0.50	1200	480	760	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0053
	12-Jul-2018		---	---	9.2	190 #2	---	150	2.4	48	---	---	1100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	12-Jul-2018		---	---	9.3	190 #2	---	150	2.4	48	---	---	1100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	11-Jul-2019		---	---	9.5	200	---	120	2.2	41	---	---	960	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	11-Jul-2019		---	---	9.1	190	---	130	2.3	41	---	---	980	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
ARB-16-1-3	12-Aug-2017	**W-CAT-1**	660	< 0.50	8.9	160	< 0.50	200	1.4	9.5	550	< 0.50	1200	660	---	1.0	0.23	0.47	0.14	0.37	0.0032
	12-Jul-2018		---	---	15	190	---	150	1.3	8.4	---	---	890	---	---	5.9	1.3	< 0.033	< 0.010	1.3	---
	11-Jul-2019		---	---	15	170	---	130	1.2	6.7	---	---	780	---	---	4.4	0.99	< 0.033	< 0.010	0.99	---
ARB-17-1-3	15-Oct-2017	**W-CAT-1**	1100	< 0.50	14	65	< 0.50	160	2.7	87	860	< 0.50	1500	710	910	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	11-Jul-2018		1100	< 1.0	12	25	< 1.0	120	2.9	110	880	< 1.0	1500	680	940	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0045
	13-Jul-2019		1000	< 1.0	13	35	< 1.0	100	3.0	100	860	< 1.0	1500	610	890	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0079
ARB-17-2-3	15-Oct-2017	**W-CAT-1**	1100	< 0.50	14	160	< 0.50	110	4.6	260	940	< 0.50	1900	470	1100 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	12-Jul-2018		1200	< 1.0	11	280 #1	< 1.0	130	5.3	330	1000	< 1.0	2200	570	1500 #3	< 0.044	< 0.010 #4	< 0.033	< 0.010 #4	< 0.014	0.0062
	11-Jul-2019		1300	< 1.0	9.9	230 #1	< 1.0	100	5.0	340	1100	< 1.0	2200	470	1500 #5	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0086

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
ARB-17-3-5	15-Oct-2017	**W-CAT-1**	1100	< 0.50	29	3.2	< 0.50	140	3.7	72	890	< 0.50	1500	740	840 [#3]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	12-Jul-2018		1100	< 1.0	30	< 1.0	< 1.0	150	3.4	73	890	< 1.0	1600	780	970	< 0.044	< 0.010 [#4]	< 0.033	< 0.010 [#4]	< 0.014	0.0099
	11-Jul-2019		1100	< 1.0	31	< 1.0	< 1.0	140	3.3	71	860	< 1.0	1500	750	960	0.045	0.010	< 0.033	< 0.010	< 0.014	0.015
BC2-15-1-3	04-Aug-2016	**W-CAT-1**	310	< 0.50	57	170	< 0.50	130	1.7	20	250	< 0.50	930	460	620	1.3	0.29	< 0.033	< 0.010	0.29	0.0050
	12-Aug-2017		480	< 0.50	72	120	< 0.50	140	1.6	32	390	< 0.50	1100	490	700	1.4	0.32	< 0.033	< 0.010	0.32	0.0049
	11-Jul-2018		220	< 1.0	53	220 [#1]	< 1.0	120	1.6	39	180	< 1.0	950	430	620	3.5	0.78	< 0.033	< 0.010	0.78	0.0026
	12-Jul-2019		210	< 1.0	58	260 [#1]	< 1.0	110	1.4	38	170	< 1.0	950	430	690	1.7	0.39	< 0.033	< 0.010	0.39	0.0038
BC2-15-2-4	04-Aug-2016	**W-CAT-1**	910	< 0.50	3.0	42	< 0.50	200	1.9	11	750	< 0.50	1300	720	850	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0069
	12-Aug-2017		780	< 0.50	2.8	44	< 0.50	140	1.4	12	640	< 0.50	1200	520	680	0.12	0.028	< 0.033	< 0.010	0.028	0.0094
	11-Jul-2018		960	< 1.0	5.4	51	< 1.0	130	1.3	11	790	< 1.0	1400	470	880	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0026
	12-Jul-2019		850	< 1.0	3.3	45	< 1.0	200	2.0	19	690	< 1.0	1300	750	930	0.11	0.024	< 0.033	< 0.010	0.024	0.0098
BC2-15-3-4	04-Aug-2016	**W-CAT-1**	630	< 0.50	3.8	21	< 0.50	150	2.0	11	510	< 0.50	970	540	570	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0053
	12-Aug-2017		560	< 0.50	2.8	12	< 0.50	120	1.9	15	460	< 0.50	840	430	500	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0055
	11-Jul-2018		670	< 1.0	3.7	57	< 1.0	170	1.9	13	550	< 1.0	1000	620	670	0.045	0.010	< 0.033	< 0.010	< 0.014	0.0025
	12-Jul-2019		670	< 1.0	4.0	77	< 1.0	160	1.9	14	550	< 1.0	1100	610	680	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0065
BC2-15-4-3	04-Aug-2016	**W-CAT-1**	330	< 0.50	8.1	560 [#1]	< 0.50	210	2.0	79	270	< 0.50	1500	670	1100	1.9	0.42	0.042	0.013	0.43	0.0088
	12-Aug-2017		360	< 0.50	7.0	340 [#1]	< 0.50	160	1.7	55	290	< 0.50	1200	510	800	1.0	0.24	< 0.033	< 0.010	0.24	0.0035
	11-Jul-2018		320	< 1.0	5.5	250 [#1]	< 1.0	150	1.3	32	260	< 1.0	980	510	700	1.2	0.27	< 0.033	< 0.010	0.27	0.0020
	11-Jul-2019		360	< 1.0	7.3	230 [#1]	< 1.0	140	2.0	33	300	< 1.0	960	460	710 [#5]	0.51	0.12	< 0.033	< 0.010	0.12	0.0068
OPB 09-2-4	11-Jul-2018	**W-CAT-1**	---	---	7.0	130	---	---	---	---	---	---	920	---	---	2.3	0.51	< 0.033	< 0.010	0.51	---
	11-Jul-2019		---	---	8.0	170	---	---	---	---	---	---	790	---	---	1.4	0.32	< 0.033	< 0.010	0.32	---
OPB 09-3-4	11-Jul-2018	**W-CAT-1**	---	---	8.0	82	---	---	---	---	---	---	640	---	---	0.90	0.20	0.035	0.011	0.21	---
	11-Jul-2019		---	---	17	210 [#1]	---	---	---	---	---	---	880	---	---	0.24	0.053	0.034	0.010	0.064	---
Mainland Central - Biocells / B-33X Well Site - Surface Water																					
ARB-17-SW01	12-Aug-2017	**W-CAT-6**	350	< 0.50	15	280 [#1]	< 0.50	160	1.9	11	280	< 0.50	1100	570	730	0.56	0.13	< 0.033	< 0.010	0.13	0.0068
	12-Jul-2018		300	< 1.0	9.6	190 [#2]	< 1.0	140	1.4	5.9	240	< 1.0	830	470	600	0.84	0.19 [#4]	< 0.033	< 0.010 [#4]	0.19	0.0034
	11-Jul-2019		300	< 1.0	10	190 [#2]	< 1.0	120	1.3	5.6	250	< 1.0	790	430	580	0.62	0.14	< 0.033	< 0.010	0.14	0.0051
ARB-17-SW02	12-Aug-2017	**W-CAT-6**	420	< 0.50	39	250 [#1]	< 0.50	140	5.1	43	350	< 0.50	1200	540	760	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0052
	12-Jul-2018		360	< 1.0	13	200	< 1.0	140	1.7	19	290	< 1.0	910	490	640	< 0.044	< 0.010 [#4]	< 0.033	< 0.010 [#4]	< 0.014	0.0020
	13-Jul-2019		350	< 1.0	12	190	< 1.0	120	1.5	14	290	< 1.0	860	420	610	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0039

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
Mainland Central - B-30X Well Site - Surficial Sediment																					
B30X-12-1-4	12-Aug-2016	**W-CAT-1**	---	---	24	4.4	---	130	2.1	550 #1	---	---	2700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.070
(Duplicate)	12-Aug-2016		---	---	24	4.4	---	120	1.9	550 #1	---	---	2700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.067
	13-Aug-2017		---	---	27	19	---	130	2.1	460	---	---	2500	---	---	0.097	0.022	< 0.033	< 0.010	0.022	0.21 #1
(Duplicate)	13-Aug-2017		---	---	26	18	---	130	2.1	460	---	---	2500	---	---	0.053	0.012	< 0.033	< 0.010	< 0.014	0.22 #1
	11-Jul-2018		---	---	---	---	---	87	3.7	400	---	---	---	---	---	---	---	---	---	---	0.034 #2
	13-Jul-2019		---	---	---	---	---	80	< 3.0	440	---	---	---	---	---	---	---	---	---	---	0.046
(Duplicate)	13-Jul-2019		---	---	---	---	---	80	< 3.0	440	---	---	---	---	---	---	---	---	---	---	0.044
B30X-12-2-4	04-Aug-2016	**W-CAT-1**	1000	< 0.50	9.2	< 1.0	< 0.50	190	5.9	57	820	< 0.50	1500	710	820 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	13-Aug-2017		1300	< 0.50	9.6	22	< 0.50	260	5.1	61	1100	< 0.50	1800	950	1200 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.050
	11-Jul-2018		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.091 #2
	11-Jul-2018		---	---	---	---	---	260	5.6	55	---	---	---	---	---	---	---	---	---	---	0.054 #2
	13-Jul-2019		---	---	---	---	---	280	6.1	100	---	---	---	---	---	---	---	---	---	---	0.056 #2
B30-13-1-5.4	04-Aug-2016	**W-CAT-1**	450	< 0.50	5.9	150	< 0.50	120	3.5	52	370	< 0.50	950	410	590	0.18	0.040	0.23	0.069	0.11	0.0031
	13-Aug-2017		650	< 0.50	6.6	180	< 0.50	160	3.6	53	530	< 0.50	1200	590	780	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0040
	12-Jul-2018		---	---	7.3	150	---	---	---	---	---	---	1200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	13-Jul-2019		---	---	17	13	---	---	---	---	---	---	1500	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
B30-13-2-4.5	12-Aug-2016	**W-CAT-1**	580	< 0.50	13	210 #1	< 0.50	170	3.2	71	470	< 0.50	1200	550	820	0.12	0.027	< 0.033	< 0.010	0.027	< 0.0020
	13-Aug-2017		790	< 0.50	20	180	< 0.50	190	3.5	80	650	< 0.50	1400	640	860	0.17	0.037	< 0.033	< 0.010	0.037	0.0031
	12-Jul-2018		---	---	---	---	---	170	2.0	31	---	---	---	---	---	---	---	---	---	---	< 0.0020
(Duplicate)	12-Jul-2018		---	---	---	---	---	180	2.1	33	---	---	---	---	---	---	---	---	---	---	< 0.0020
	13-Jul-2019		---	---	---	---	---	180	1.8	19	---	---	---	---	---	---	---	---	---	---	0.0028
B30-13-3-4.5	04-Aug-2016	**W-CAT-1**	1600	< 0.50	14	270 #1	< 0.50	130	2.9	440	1300	< 0.50	2700	620	1800 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0055
	13-Aug-2017		1800	< 0.50	16	110	< 0.50	150	3.4	280	1500	< 0.50	2500	890	1600 #3	0.23	0.052	< 0.033	< 0.010	0.052	0.011
	11-Jul-2018		---	---	---	---	---	100	2.1	340	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2019		---	---	---	---	---	130	2.4	300	---	---	---	---	---	---	---	---	---	---	---
B30-13-4-3.9	18-Aug-2017	**W-CAT-1**	220	< 0.50	< 1.0	42	< 0.50	66	1.3	11	180	< 0.50	410	200	260	1.6	0.36	< 0.033	< 0.010	0.36	< 0.0020
B30-17-1-5	15-Oct-2017	**W-CAT-1**	810	< 0.50	18	8.0	< 0.50	39	2.0	110	660	< 0.50	1200	430	700 #3	0.046	0.010	< 0.033	< 0.010	< 0.014	---
	11-Jul-2018		1400	< 1.0	18	45	< 1.0	100	2.7	120	1200	< 1.0	2000	930	1200	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	< 0.0020
	13-Jul-2019		1300	< 1.0	17	32	< 1.0	97	2.7	120	1000	< 1.0	1800	830	1100 #5	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.019
B30-17-2-3	12-Jul-2018	**W-CAT-1**	1100	< 1.0	7.2	9.1 #6	< 1.0	160	3.7	78	920	< 1.0	1600	750	1100 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.020
	15-Jul-2019		100	< 1.0	6.0	280 #1	< 1.0	130	2.4	22	84	< 1.0	760	400	580 #5	17	3.9	0.16	0.047	3.9	0.017

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
Mainland Central - B-30X Well Site - Bedrock																					
B30-19-01-5	02-Sep-2019	**W-CAT-3**	1200	< 1.0	39 #2	7.4	**< 1.0**	14	2.9	420	1000	< 1.0	1900	49	1200	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
Mainland Central - C-30X Well Site / Bosworth Creek and Delta - Surficial Sediment																					
C30-10-1-5	10-Aug-2016	**W-CAT-3**	---	---	110	160	---	340	6.1	59	---	---	2800	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.020
	12-Aug-2017		---	---	170	18	---	320	5.4	84	---	---	3000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.041
	12-Jul-2018		---	---	150	37	---	310	4.6	68	---	---	2700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.078
	13-Jul-2019		---	---	190 #2	31	---	310	5.0	54	---	---	3000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.13 #1
BOS-DP-13-1-1.4	11-Aug-2016	**W-CAT-3**	1800	< 0.50	280 #1	6.5	< 0.50	44	4.8	830 #1	1500	< 0.50	3300	200	2000	< 0.044	< 0.010	0.034	0.010	< 0.020	< 0.0020
	13-Jul-2019		---	---	490 #1	< 1.0	---	220	5.0	660 #1	---	---	4100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.010
BOS-DP-13-2-1.35	06-Aug-2016	**W-CAT-3**	760	< 0.50	320 #1	22	< 0.50	180	3.9	390	620	< 0.50	2200	750	1200	3.0	0.67	0.11	0.035	0.71	0.012
	18-Aug-2017		1300	< 0.50	530 #1	< 1.0	< 0.50	180	2.4	440	1000	< 0.50	3400	730	1900	0.11	0.026	< 0.033	< 0.010	0.026	---
BOS-DP-13-3-2	06-Aug-2016	**W-CAT-3**	710	< 0.50	92	130	< 0.50	63	1.6	280	580	< 0.50	1600	230	990	0.39	0.089	< 0.033	< 0.010	0.089	---
	18-Aug-2017		800	< 0.50	82	71	< 0.50	47	1.4	320	660	< 0.50	1600	180	960 #3	0.33	0.074	< 0.033	< 0.010	0.074	0.0067
	21-Jul-2018		---	---	58	53	---	---	---	---	---	---	1000	---	---	0.066	0.015	< 0.033	< 0.010	0.015	---
	13-Jul-2019		---	---	50	110	---	---	---	---	---	---	970	---	---	0.21	0.048	0.035	0.011	0.058	---
BOS-DP-13-4-3	06-Aug-2016	**W-CAT-3**	620	< 0.50	39 #2	17	< 0.50	26	1.5	200	510	< 0.50	1100	110	620	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	< 0.010 #2
(Duplicate)	06-Aug-2016		600	< 0.50	39 #2	18	< 0.50	26	1.4	200	500	< 0.50	1100	110	620	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	< 0.010 #2
	18-Aug-2017		520	< 0.50	37 #2	59	< 0.50	30	1.3	180	430	< 0.50	1000	130	600	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	< 0.010 #2
	21-Jul-2018		---	---	42	35	---	---	---	---	---	---	950	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	13-Jul-2019		---	---	34	46	---	---	---	---	---	---	930	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
Mainland Central - C-30X Well Site / Bosworth Creek and Delta - Surface Water																					
BOS SW01	11-Aug-2016	**W-CAT-6**	220	< 0.50	17	160	< 0.50	82	1.0	18	180	< 0.50	680	330	460	0.077	0.017	< 0.033	< 0.010	< 0.020	< 0.0020
	18-Aug-2017		230	< 0.50	24	140	< 0.50	79	0.99	21	190	< 0.50	660	310	420	0.077	0.017	< 0.033	< 0.010	0.017	< 0.0020
(Duplicate)	18-Aug-2017		230	0.66	24	140	< 0.50	79	1.1	22	190	0.55	660	310	410	0.14	0.031	< 0.033	< 0.010	0.031	< 0.0020
	21-Jul-2018		230	< 1.0	19	150	< 1.0	76	0.98	17	190	< 1.0	650	310	410	0.22	0.050	< 0.033	< 0.010	0.050	< 0.0020
	13-Jul-2019		240	< 1.0	32	160	< 1.0	87	1.2	27	200	< 1.0	730	340	480	0.24	0.053	< 0.033	< 0.010	0.053	0.0020
Mainland Central - Former Battery #3 - Surficial Sediment																					
BT3 02-34-4	13-Aug-2017	**W-CAT-3**	---	---	100	330 #1	---	---	---	---	---	---	2500	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	17-Jul-2018		---	---	89	590 #1	---	350	2.3	47	---	---	2600	---	---	0.063	0.014	< 0.033	< 0.010	0.014	---
	14-Jul-2019		---	---	62	490 #1	---	380	2.2	52	---	---	2400	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---

Table 4A

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
BT3 02-36-4	17-Jul-2018	**W-CAT-3**	---	---	---	---	---	330	2.7	19	---	---	---	---	---	---	---	---	---	---	0.014
	14-Jul-2019		---	---	---	---	---	450	2.2	29	---	---	---	---	---	---	---	---	---	---	0.029 [#2]
BT3-18-1-5.5	12-Jul-2018	**W-CAT-3**	1500	< 1.0	99	77	< 1.0	300	7.4	22	1200	< 1.0	2400	1200	1500 [#3]	0.058	0.013	< 0.033	< 0.010	< 0.014	0.0096
Mainland Central - Former Battery #3 - Bedrock																					
BT3 97-11-11	05-Aug-2016	**W-CAT-3**	---	---	140	< 1.0 [#6]	---	20	4.3	1000 [#1]	---	---	3800	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	13-Aug-2017		---	---	160	< 1.0	---	16	4.1	1200 [#1]	---	---	4200	---	---	0.49	0.11 [#2]	< 0.33	< 0.10 [#2]	< 0.14	---
	17-Jul-2018		---	---	170	< 1.0	---	12	3.8	1100 [#1]	---	---	4200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Jul-2019		---	---	150	< 1.0	---	14	4.3	990 [#1]	---	---	3900	---	---	< 0.44	< 0.10 [#2]	< 0.33	< 0.10 [#2]	< 0.14	---
BT3 98-7-7	14-Jul-2019	**W-CAT-3**	---	---	---	---	---	190	4.3	330	---	---	---	---	---	---	---	---	---	---	---
BT3 99-20-13	05-Aug-2016	**W-CAT-3**	---	---	690 [#1]	59	---	170	6.8	520 [#1]	---	---	3500	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	13-Aug-2017		---	---	410 [#1]	50	---	84	4.8	440	---	---	2900	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	12-Jul-2018		---	---	260 [#1]	58	---	---	---	---	---	---	2300	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	13-Jul-2019		---	---	190	60	---	---	---	---	---	---	2000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
BT3 99-23-13	05-Aug-2016	**W-CAT-3**	---	---	3700 [#1]	370 [#1]	---	650	15	2100	---	---	13000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
(Duplicate)	05-Aug-2016		---	---	3700 [#1]	300 [#1]	---	650	15	2000	---	---	12000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	13-Aug-2017		---	---	3900 [#1]	130	---	460	14	2100	---	---	13000	---	---	< 0.44	< 0.10 [#2]	< 0.33	< 0.10 [#2]	< 0.14	---
(Duplicate)	13-Aug-2017		---	---	3600 [#1]	140	---	460	14	2100	---	---	13000	---	---	< 0.44	< 0.10 [#2]	< 0.33	< 0.10 [#2]	< 0.14	---
	12-Jul-2018		---	---	2900 [#1]	280 [#1]	---	460	12	1900	---	---	11000	---	---	< 0.44	< 0.10 [#10]	< 0.33	< 0.10 [#10]	< 0.14	---
(Duplicate)	12-Jul-2018		---	---	2900 [#1]	280 [#1]	---	460	12	1900	---	---	11000	---	---	< 0.44	< 0.10 [#10]	< 0.33	< 0.10 [#10]	< 0.14	---
	13-Jul-2019		---	---	2400 [#1]	140	---	350	11	1700	---	---	9900	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	13-Jul-2019		---	---	2300 [#1]	160	---	350	11	1700	---	---	9700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
BT3 02-32-6	05-Aug-2016	**W-CAT-3**	---	---	68	0.72	---	190	7.4	95	---	---	1900	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	13-Aug-2017		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Aug-2017		---	---	63	1.4	---	---	---	---	---	---	1800	---	---	0.11	0.024	< 0.033	< 0.010	0.024	---
	12-Jul-2018		---	---	---	---	---	190	7.6	110	---	---	---	---	---	---	---	---	---	---	---
	13-Jul-2019		---	---	---	---	---	180	8.1	100	---	---	---	---	---	---	---	---	---	---	---
Mainland Central - F-31X Well Site - Surficial Sediment																					
F31 97-3-5	06-Aug-2016	**W-CAT-1**	---	---	56	260 [#1]	---	---	---	---	---	---	2300	---	---	1.4	0.33	0.036	0.011	0.34	---
	16-Jul-2018		---	---	84	270 [#1]	---	---	---	---	---	---	2200	---	---	0.56	0.13	0.044	0.013	0.14	---
F31 98-1-4	06-Aug-2016	**W-CAT-1**	---	---	---	---	---	440	2.0	26	---	---	---	---	---	---	---	---	---	---	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions: Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Cations: Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	General: Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Inorganic Nitrogen Compounds: Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols: Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
Mainland Central - G-32X Well Site - Surficial Sediment																					
G32-10-1-3	06-Aug-2016	**W-CAT-1**	---	---	100	510 #1	---	360	2.5	30	---	---	2200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0049
	17-Aug-2017		---	---	97	500 #1	---	330	1.8	26	---	---	2100	---	---	1.2	0.28	< 0.033	< 0.010	0.28	0.0062
Mainland Central - E-33X Well Site - Surficial Sediment																					
E33-18-1-2.5	22-Jul-2018	**W-CAT-1**	1100	< 1.0	180 #2	9.4	< 1.0	110	4.0	290	940	< 1.0	2100	490	1200 #3	< 0.44	< 0.10 #8	< 0.33	< 0.10 #8	< 0.14	< 0.010 #2
(Duplicate)	22-Jul-2018		1100	< 1.0	180 #2	11	< 1.0	110	3.8	290	930	< 1.0	2100	490	1200 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.062
	11-Jul-2019		---	---	160	1600 #1	---	520	3.5	200	---	---	3500	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.010
(Duplicate)	11-Jul-2019		---	---	160	1700 #1	---	520	3.5	200	---	---	3600	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.012
Mainland Central - E-33X Well Site - Bedrock																					
E33-19-01-4	02-Sep-2019	**W-CAT-3**	1100	< 1.0	280 #1	4.9	< 1.0	170	6.7	180	870	< 1.0	2300	790	1300	0.049	0.011	< 0.033	< 0.010	< 0.014	---
E33-19-02-5	02-Sep-2019	**W-CAT-3**	---	---	---	---	---	170	13	220	---	---	---	---	---	---	---	---	---	---	---
Mainland East - Former Fuel Tanks and Potential Campsite Biocell - Surficial Sediment																					
CAB 09-3-3	05-Aug-2016	**W-CAT-1**	---	---	---	---	---	190	1.2	9.0	---	---	---	---	---	---	---	---	---	---	---
	12-Aug-2017		---	---	---	---	---	150	1.7	19	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2018		---	---	---	---	---	220	1.7	9.5	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2019		---	---	---	---	---	260	1.7	6.6	---	---	---	---	---	---	---	---	---	---	---
FT-10-1-3	05-Aug-2016	**W-CAT-1**	---	---	---	---	---	93	1.2	6.6	---	---	---	---	---	---	---	---	---	---	---
	12-Aug-2017		---	---	---	---	---	98	1.2	7.4	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2018		---	---	---	---	---	130	0.81	8.2	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2019		---	---	---	---	---	130	0.87	11	---	---	---	---	---	---	---	---	---	---	---
Mainland East - C-36X Well Site - Surficial Sediment																					
C36-10-1-3	05-Aug-2016	**W-CAT-1**	---	---	57	< 0.50	---	150	1.6	31	---	---	1200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.039
	12-Aug-2017		---	---	37	< 0.50	---	150	1.5	45	---	---	1200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.031
	12-Jul-2018		---	---	37	0.88	---	160	1.4	59	---	---	1300	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.029
	15-Jul-2019		---	---	32	< 0.50	---	140	1.4	70	---	---	1200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.029

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
C36-10-2-3	05-Aug-2016	**W-CAT-1**	---	---	67	170	---	280	3.6	40	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
(Duplicate)	05-Aug-2016		---	---	61	91	---	280	3.7	40	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	12-Aug-2017		---	---	33	110	---	250	2.5	45	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	12-Aug-2017		---	---	33	100	---	250	2.5	45	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	12-Jul-2018		---	---	---	---	---	230	2.1	34	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	12-Jul-2018		---	---	---	---	---	240	2.2	34	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2019		---	---	---	---	---	250	2.8	32	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	15-Jul-2019		---	---	---	---	---	250	2.8	32	---	---	---	---	---	---	---	---	---	---	---
C36-10-3-3	05-Aug-2016	**W-CAT-1**	---	---	66	7.3	---	170	5.2	100	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.014
	12-Aug-2017		---	---	47	< 1.0	---	170	4.8	94	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.012
	12-Jul-2018		---	---	34	23	---	190	4.9	100	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0079
	15-Jul-2019		---	---	20	35	---	180	5.2	120	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.011
Mainland East - C-36X Well Site - Surface Water																					
C36 SW01	05-Aug-2016	**W-CAT-6**	720	< 0.50	120	8.9	< 0.50	150 [#9]	0.70 [#7]	80 [#9]	590	< 0.50	1400	680	870	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0072
	12-Aug-2017		570	< 0.50	85	37 [#2]	< 0.50	110	0.56	67	470	< 0.50	1100	490	680	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.018
	12-Jul-2018		---	---	13	8.0	---	---	---	---	---	---	890	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.011
	15-Jul-2019		---	---	28	4.1	---	---	---	---	---	---	900	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.013
Mainland East - B-38X Well Site - Surficial Sediment																					
B38 03-38-5	04-Aug-2016	**W-CAT-1**	---	---	96	< 1.0	---	130	3.3	67	---	---	1300	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	13-Aug-2017		---	---	110	14	---	130	3.3	76	---	---	1400	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	18-Jul-2019		---	---	100	< 1.0	---	120	3.4	82	---	---	1400	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
B38 08-2-4	03-Aug-2016	**W-CAT-1**	970	< 0.50	6.1	1.5	< 0.50	240	1.4	6.8	790	< 0.50	1400	800	900 [#3]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
B38-10-2-5	04-Aug-2016	**W-CAT-5**	---	---	---	---	---	140	4.9	38	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	04-Aug-2016		---	---	---	---	---	140	4.9	38	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2017		---	---	---	---	---	140	4.5	48	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	18-Aug-2017		---	---	---	---	---	140	4.5	49	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2018		---	---	---	---	---	140	4.2	40	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	12-Jul-2018		---	---	---	---	---	150	4.5	44	---	---	---	---	---	---	---	---	---	---	---
	14-Jul-2019		---	---	---	---	---	160	4.8	41	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	14-Jul-2019		---	---	---	---	---	160	4.8	41	---	---	---	---	---	---	---	---	---	---	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
B38-10-1-5	04-Aug-2016	**W-CAT-5**	---	---	---	---	---	130	3.3	47	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	04-Aug-2016		---	---	---	---	---	130	3.3	48	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2017		---	---	---	---	---	150	3.2	52	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2018		---	---	---	---	---	150	2.9	53	---	---	---	---	---	---	---	---	---	---	---
	13-Jul-2019		---	---	---	---	---	150	3.2	48	---	---	---	---	---	---	---	---	---	---	---
B38-16-1-3	12-Aug-2017	**W-CAT-5**	900	< 0.50	8.0	4.1	< 0.50	180	3.1	11	740	< 0.50	1300	700	700 [#3]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.018
	13-Jul-2018		1100	< 1.0	9.3	6.2	< 1.0	230	2.8	22	910	< 1.0	1500	820	840 [#3]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.024
	13-Jul-2019		960	< 1.0	7.4	1.8	< 1.0	200	2.7	16	790	< 1.0	1400	770	880 [#5]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.018
Mainland East - B-38X Remediation Systems - Inlets																					
B38-N-INLET	06-Jul-2016	**W-CAT-5**	1100	< 0.50	18	100	< 0.50	280	2.6	32	890	< 0.50	1700	980	1200 [#3]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	03-Sep-2019		900	< 1.0	22	12	< 1.0	210	2.4	20	740	< 1.0	1400	730	1000 [#5]	< 0.44	< 0.10 [#4]	< 0.33	< 0.10 [#8]	< 0.14	---
FTA-N-INLET	06-Jul-2016	**W-CAT-5**	970	< 0.50	120	170	< 0.50	280	2.7	36	790	< 0.50	1900	1100	1400 [#3]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	03-Sep-2019		880	< 1.0	110	25	< 1.0	210	2.1	26	720	< 1.0	1600	830	1100 [#5]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
LT7-Inlet	06-Jul-2016	**W-CAT-5**	760	< 0.50	72	9.2	< 0.50	140	2.9	48	620	< 0.50	1300	670	800 [#3]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	03-Sep-2019		760	< 1.0	88	< 1.0	< 1.0	130	3.1	53	630	< 1.0	1300	600	820 [#5]	< 0.44	< 0.10 [#4]	< 0.33	< 0.10 [#8]	< 0.14	---
Mainland East - Fire Training Area - Surficial Sediment																					
FTA 99-2-4	04-Aug-2016	**W-CAT-1**	---	---	110	1.6	---	---	---	---	---	---	2000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	16-Jul-2018		---	---	180	6.9	---	---	---	---	---	---	1800	---	---	0.045	0.010	< 0.033	< 0.010	< 0.014	---
	15-Jul-2019		---	---	190	14	---	---	---	---	---	---	2000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
FTA 99-3-4	04-Aug-2016	**W-CAT-1**	---	---	160	40	---	280	2.1	42	---	---	2100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
(Duplicate)	04-Aug-2016		---	---	160	41	---	290	2.0	41	---	---	2000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.040
	10-Sep-2016		1200	< 0.50	130	9.9	< 0.50	300	2.7	49	990	< 0.50	2000	1200	1500 [#3]	0.34	0.076	< 0.033	< 0.010	0.076	---
	17-Aug-2017		---	---	150	8.7	---	270	1.9	44	---	---	2100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	16-Jul-2018		---	---	180	190	---	---	---	---	---	---	2100	---	---	< 0.44	< 0.10 [#2]	< 0.33	< 0.10 [#2]	< 0.14	---
(Duplicate)	16-Jul-2018		---	---	170	230 [#1]	---	---	---	---	---	---	2200	---	---	< 0.44	< 0.10 [#2]	< 0.33	< 0.10 [#2]	< 0.14	---
	20-Jun-2019		---	---	190	160	---	---	---	---	---	---	2100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---

Advisian
Worley Group

Table 4A

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
Reduced Crude Flare Pit - Surficial Sediment																					
RCF 03-1-5	03-Aug-2016	**W-CAT-1**	---	---	26	200 #1	---	200	4.9	26	---	---	---	---	---	0.051	0.011	< 0.033	< 0.010	< 0.020	---
(Duplicate)	03-Aug-2016		---	---	26	200 #2	---	250	0.75	34	---	---	---	---	---	0.11	0.024	< 0.033	< 0.010	0.024	---
	21-Aug-2017		---	---	36 #2	390 #2	---	260	5.4	36	---	---	---	---	---	0.079	0.018	< 0.033	< 0.010	0.018	---
(Duplicate)	21-Aug-2017		---	---	37 #2	390 #2	---	260	5.3	37	---	---	---	---	---	0.079	0.018	< 0.033	< 0.010	0.018	---
	21-Jul-2018		---	---	44	480 #2	---	300	6.3	39	---	---	---	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	21-Jul-2018		---	---	43	480 #2	---	300	6.3	38	---	---	---	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	12-Jul-2019		---	---	34	340 #2	---	240	5.9	32	---	---	---	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RCF 98-3-4	03-Aug-2016	**W-CAT-1**	---	---	29	170	---	250	0.75	35	---	---	---	---	---	0.049	0.011	< 0.033	< 0.010	< 0.020	---
	21-Aug-2017		---	---	48	320 #2	---	260	1.2	59	---	---	---	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	21-Jul-2018		---	---	35	240 #2	---	280	1.1	46	---	---	---	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	12-Jul-2019		---	---	38	320 #2	---	290	1.0	56	---	---	---	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	12-Jul-2019		---	---	36	350 #2	---	290	0.95	56	---	---	---	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
Reduced Crude Flare Pit - Surface Water																					
RCF-16-SW01	03-Aug-2016	**W-CAT-6**	---	---	160	69	---	---	---	---	---	---	---	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	12-Jul-2019		---	---	100	91	---	---	---	---	---	---	---	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
Mainland East - Mainland Tank Farm - Surficial Sediment																					
MTF 98-4-5	06-Aug-2016	**W-CAT-1**	---	---	140	< 1.0	---	190	3.9	85	---	---	1800	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
(Duplicate)	06-Aug-2016		---	---	140	< 1.0	---	190	3.8	85	---	---	1800	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	17-Aug-2017		---	---	140	< 1.0	---	170	3.3	98	---	---	1800	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	17-Aug-2017		---	---	140	< 1.0	---	170	3.3	97	---	---	1800	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	16-Jul-2018		---	---	130	< 1.0	---	---	---	---	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	16-Jul-2018		---	---	130	< 1.0	---	---	---	---	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	19-Jun-2019		---	---	130	< 1.0	---	---	---	---	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	19-Jun-2019		---	---	130	< 1.0	---	---	---	---	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
MTF 98-5-4	06-Aug-2016	**W-CAT-1**	---	---	120	< 1.0	---	170	1.4	25	---	---	1400	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	17-Aug-2017		---	---	100	36	---	140	1.9	20	---	---	1200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	16-Jul-2018		---	---	130	3.0	---	150	1.3	20	---	---	1300	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	---
	19-Jun-2019		---	---	85	22	---	140	1.1	16	---	---	1200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
TF 02-10-5	06-Aug-2016	**W-CAT-1**	---	---	92	0.61	---	190	2.6	55	---	---	1500	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	17-Aug-2017		---	---	130	62	---	230	3.6	70	---	---	1900	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.14 #1
	16-Jul-2018		---	---	---	---	---	230	2.5	62	---	---	---	---	---	---	---	---	---	---	---
	17-Jul-2018		---	---	91	3.6	---	---	---	---	---	---	1700	---	---	< 0.44	< 0.10 #8	< 0.33	< 0.10 #8	< 0.14	0.071 #2
	19-Jun-2019		---	---	90	22	---	160	2.5	56	---	---	1300	---	---	< 0.044	< 0.010	0.076	0.023	0.023	0.098 #1
TF 02-7-3	17-Aug-2017	**W-CAT-1**	---	---	110	1.1	---	280	1.9	12	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.59 #1
	16-Jul-2018		---	---	110	< 1.0	---	310	1.8	12	---	---	1800	---	---	0.056	0.013	< 0.033	< 0.010	< 0.014	0.54 #1
	18-Jun-2019		---	---	94	3.0	---	290	2.0	16	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.87 #1
TF 02-9-3	17-Aug-2017	**W-CAT-1**	---	---	---	---	---	120	2.9	59	---	---	---	---	---	---	---	---	---	---	0.030
	16-Jul-2018		---	---	---	---	---	130	2.7	57	---	---	---	---	---	---	---	---	---	---	---
	18-Jun-2019		---	---	---	---	---	110	2.8	24	---	---	---	---	---	---	---	---	---	---	---
TF 03-11-4	06-Aug-2016	**W-CAT-1**	---	---	89	< 1.0	---	100	3.8	160	---	---	1400	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	17-Aug-2017		---	---	110	3.7	---	97	3.5	160	---	---	1400	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	16-Jul-2018		---	---	---	---	---	100	3.4	140	---	---	---	---	---	---	---	---	---	---	---
	19-Jun-2019		---	---	---	---	---	110	3.6	130	---	---	---	---	---	---	---	---	---	---	---
Mainland East - B-42X Well Site - Surficial Sediment																					
B42-17-1-5	15-Oct-2017	**W-CAT-1**	850	< 0.50	27	< 1.0	< 0.50	53	3.6	100	700	< 0.50	1200	490	710	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	20-Jul-2018		860	< 1.0	35	< 1.0	< 1.0	54	3.4	98	710	< 1.0	1300	500	750	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.012
	15-Jul-2019		900	< 1.0	31	1.7	< 1.0	54	3.3	100	740	< 1.0	1300	560	780	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0097
B42-17-2-4	15-Oct-2017	**W-CAT-1**	430	< 0.50	46	6.0	< 0.50	31	2.7	120	350	< 0.50	810	160	440 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	20-Jul-2018		470	< 1.0	51	< 1.0	< 1.0	44	2.2	92	390	< 1.0	840	240	560	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.011
	14-Jul-2019		470	< 1.0	120	< 1.0	< 1.0	56	2.1	100	380	< 1.0	1000	320	680	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0086
B42-17-3-4	15-Oct-2017	**W-CAT-1**	360	< 0.50	14	23	< 0.50	44	2.3	62	290	< 0.50	630	220	410	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	20-Jul-2018		550	< 1.0	18	< 1.0	< 1.0	33	2.1	100	450	< 1.0	840	220	540	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.012
Mainland East - Former Refinery - Surficial Sediment																					
NWR 93-10-6	15-Aug-2016	**W-CAT-4**	710	< 0.50	2.2	2.8	< 0.50	190	4.0	12	580	< 0.50	1100	590	700 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
NWR 02-12-7	13-Aug-2017	**W-CAT-4**	---	---	25	15	---	---	---	---	---	---	1400	---	---	< 0.044	< 0.010	0.046	0.014	< 0.014	---
	15-Jul-2019		---	---	26	12	---	---	---	---	---	---	1500	---	---	0.61	0.14	0.22	0.067	0.20	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
RB-OBS-46	15-Aug-2016	**W-CAT-4**	1000	< 0.50	16	< 0.50	< 0.50	190	2.2	25	820	< 0.50	1400	830	980 [#1]	< 0.044	< 0.010	0.034	0.011	< 0.020	---
	11-Apr-2017		920	< 0.50	16	< 2.5 [#5]	< 0.50	170	1.4	29	750	< 0.50	1400	770	---	< 0.22	< 0.050 [#5]	< 0.16	< 0.050 [#5]	< 0.050	---
	10-May-2017		1000	< 0.50	12	65 [#5]	< 0.50	160	1.6	19	830	< 0.50	1500	700	1000 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	15-Jun-2017		950	< 0.50	12	23	< 0.50	200	1.5	32	780	< 0.50	1400	770	920 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	15-Jul-2017		1100	< 0.50	13	4.4	< 0.50	220	2.2	28	860	< 0.50	1500	950	1100 [#1]	< 0.22	< 0.050 [#5]	< 0.16	< 0.050 [#5]	< 0.071	---
	19-Aug-2017		960	< 0.50	13	< 0.50	< 0.50	170	1.7	21	780	< 0.50	1300	710	860 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	15-Sep-2017		1100	< 0.50	12	< 0.50	< 0.50	220	2.5	19	910	< 0.50	1500	840	720 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Oct-2017		1000	< 0.50	15	< 0.50	< 0.50	160	2.1	18	820	< 0.50	1400	670	920 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	23-Nov-2017		940	< 1.0	14	< 0.50	< 1.0	180	2.4	25	770	< 1.0	1300	870	900 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	03-Oct-2019		960	< 1.0	14	1.6	< 1.0	190	2.3	18	780	< 1.0	1400	780	950 [#5]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RB-OBS-47	15-Aug-2016	**W-CAT-4**	890	< 0.50	9.2	36	< 0.50	220	3.7	29	730	< 0.50	1300	720	880 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	10-May-2017		540	< 0.50	14	510 [#2]	< 0.50	260	5.1	35	440	< 0.50	1700	970	1300 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	15-Jul-2017		1200	< 0.50	9.3	32	< 0.50	300	2.2	21	950	< 0.50	1600	1000	1300 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	15-Jul-2017		1200	< 0.50	8.8	33	< 0.50	300	2.1	23	960	< 0.50	1600	1000	1200 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	19-Aug-2017		670	< 0.50	6.5	57	< 0.50	200	3.7	20	550	< 0.50	1100	690	780 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	15-Sep-2017		1100	< 0.50	8.5	17	< 0.50	300	3.0	20	920	< 0.50	1600	980	840 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Oct-2017		1200	< 0.50	9.7	3.1	< 0.50	240	3.0	22	970	< 0.50	1600	800	960 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	03-Oct-2019		920	< 1.0	11	---	< 1.0	---	---	---	760	< 1.0	1300	---	---	---	---	---	---	---	---
RB-OBS-48	15-Aug-2016	**W-CAT-4**	730	< 0.50	7.0	15	< 0.50	190	4.1	12	600	< 0.50	1100	590	630	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
RB-13-1-2.4	14-Sep-2017	**W-CAT-4**	1600	< 0.50	110	89	< 0.50	150	3.3	460	1300	< 0.50	2500	600	1700 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RB-13-3-2.4	15-Aug-2016	**W-CAT-4**	1100	< 0.50	230 [#2]	38	< 0.50	100	6.4	420	900	< 0.50	2400	360	1500 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	01-Oct-2016		---	---	---	---	---	---	---	---	---	---	2400	---	---	---	---	---	---	---	---
RB-13-6-2.4	15-Aug-2016	**W-CAT-4**	1100	< 0.50	140	30	< 0.50	60	4.2	470	920	< 0.50	1800	230	1500 [#1]	0.045	0.010	0.036	0.011	0.021	---
	01-Oct-2016		---	---	---	---	---	---	---	---	---	---	2200	---	---	---	---	---	---	---	---
RB-MW17-01	16-Jun-2017	**W-CAT-4**	1200	< 0.50	19	20	< 0.50	240	2.5	22	960	< 0.50	1700	810	1200 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	15-Jul-2017		1400	< 0.50	25	4.1	< 0.50	300	4.6	65	1100	< 0.50	1900	1000	1300 [#1]	0.063	0.014	< 0.033	< 0.010	0.014	---
	19-Aug-2017		1200	< 0.50	18	< 1.0	< 0.50	260	3.0	26	950	< 0.50	1600	850	1100 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Sep-2017		1100	< 0.50	16	< 1.0	< 0.50	270	2.6	21	920	< 0.50	1500	900	880 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Oct-2017		1100	< 0.50	16	< 0.50	< 0.50	250	2.1	19	880	< 0.50	1500	820	740 [#1]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	23-Nov-2017		1100	< 1.0	18	< 1.0	< 1.0	260	2.2	19	890	< 1.0	1500	880	900 [#1]	0.27	0.062	< 0.033	< 0.010	0.062	---
	03-Oct-2019		1200	< 1.0	12	1.3	< 1.0	250	2.2	33	990	< 1.0	1700	830	910 [#5]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
RB-MW17-02	16-Jun-2017	**W-CAT-4**	1200	< 0.50	32	3.8	< 0.50	250	4.9	60	990	< 0.50	1700	870	1300 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	15-Jul-2017		1200	< 0.50	31	3.8	< 0.50	270	5.2	61	990	< 0.50	1700	960	1200 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	19-Aug-2017		1200	< 0.50	26	5.7	< 0.50	240	4.1	54	990	< 0.50	1700	840	1200 #1	0.24	0.053	0.48	0.15	0.20	---
	14-Sep-2017		1200	< 0.50	22	3.9	< 0.50	270	4.4	54	950	< 0.50	1600	910	1000 #1	< 0.044	< 0.010	0.089	0.027	0.027	---
	14-Oct-2017		1000	< 0.50	17	0.77	< 0.50	230	4.1	47	850	< 0.50	1500	780	800 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	23-Nov-2017		1100	< 1.0	25	< 0.50	< 1.0	230	4.6	75	900	< 1.0	1500	790	1100 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	03-Oct-2019		800	< 1.0	14	< 1.0	< 1.0	150	3.0	32	650	< 1.0	1200	530	720 #5	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RB-MW17-03	16-Jun-2017	**W-CAT-4**	1100	< 0.50	56	< 1.0	< 0.50	210	4.2	94	880	< 0.50	1700	740	1100 #1	0.080	0.018	< 0.033	< 0.010	0.018	---
	16-Jul-2017		1000	< 0.50	32	2.0	< 0.50	240	3.4	49	840	< 0.50	1500	850	1200 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	19-Aug-2017		1000	< 0.50	28	0.79	< 0.50	220	3.0	38	850	< 0.50	1400	750	1000 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Sep-2017		980	< 0.50	23	0.77	< 0.50	240	3.6	40	800	< 0.50	1400	830	1000 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Oct-2017		940	< 0.50	17	< 0.50	< 0.50	210	2.8	39	770	< 0.50	1400	710	740 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	23-Nov-2017		1000	< 1.0	26	< 0.50	< 1.0	220	3.1	37	840	< 1.0	1500	770	940 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	03-Oct-2019		470	< 1.0	10	4.5	< 1.0	120	1.9	20	390	< 1.0	720	400	650 #5	0.24	0.055	< 0.033	< 0.010	0.055	---
RB-MW17-04	15-Jun-2017	**W-CAT-4**	1200	< 0.50	88	4.7	< 0.50	220	5.4	170	980	< 0.50	1900	700	1300 #1	0.10	0.024	< 0.033	< 0.010	0.024	---
	15-Jul-2017		860	< 0.50	63	3.6	< 0.50	180	4.5	130	700	< 0.50	1400	580	980 #1	0.052	0.012	< 0.033	< 0.010	< 0.014	---
(Duplicate)	15-Jul-2017		850	< 0.50	61	3.1	< 0.50	170	4.3	130	700	< 0.50	1400	550	940 #1	0.055	0.012	< 0.033	< 0.010	< 0.014	---
	19-Aug-2017		260	< 0.50	14	50	< 0.50	47	1.6	59	210	< 0.50	520	150	380 #1	0.075	0.017	< 0.033	< 0.010	0.017	---
	14-Sep-2017		820	< 0.50	20	5.8	< 0.50	200	2.1	63	670	< 0.50	1200	640	520 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	14-Sep-2017		820	< 0.50	20	11	< 0.50	200	2.1	63	670	< 0.50	1200	630	580 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Oct-2017		880	< 0.50	19	2.8	< 0.50	210	2.1	38	720	< 0.50	1300	690	800 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	23-Nov-2017		940	< 1.0	23	1.0	< 1.0	210	2.8	67	770	< 1.0	1400	690	940 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RB-MW17-05	15-Jul-2017	**W-CAT-4**	170	< 0.50	6.9	310 #2	< 0.50	130	2.5	53	140	< 0.50	880	390	650 #1	3.1	0.71	0.40	0.12	0.83	---
	19-Aug-2017		200	< 0.50	2.5	80	< 0.50	23	1.3	82	160	< 0.50	460	73	320 #1	0.85	0.19	0.091	0.028	0.22	---
	14-Sep-2017		600	< 0.50	5.6	83	< 0.50	130	2.0	97	490	< 0.50	1000	430	520 #1	0.18	0.040	0.20	0.061	0.10	---
RB-MW17-06	16-Jun-2017	**W-CAT-4**	650	< 0.50	16	84	< 0.50	160	5.2	24	530	< 0.50	1100	570	740 #1	0.49	0.11	< 0.033	< 0.010	0.11	---
	15-Jul-2017		840	< 0.50	19	220 #2	< 0.50	250	6.9	35	680	< 0.50	1500	910	1200 #1	0.32	0.072	0.038	0.011	0.084	---
	19-Aug-2017		750	< 0.50	10	260 #2	< 0.50	230	3.2	24	620	< 0.50	1400	790	1100 #1	0.054	0.012	< 0.033	< 0.010	< 0.014	---
	14-Sep-2017		990	< 0.50	7.7	54	< 0.50	280	2.3	17	810	< 0.50	1400	900	740 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Oct-2017		1100	< 0.50	7.7	11	< 0.50	240	2.1	24	870	< 0.50	1500	780	780 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	23-Nov-2017		1100	< 1.0	7.4	0.58	< 1.0	280	1.6	13	880	< 1.0	1500	910	900 #1	0.047	0.011	< 0.033	< 0.010	< 0.014	---

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Table 4A

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
RB-MW17-07	16-Jun-2017	**W-CAT-4**	1200	< 0.50	97	1.7	< 0.50	230	5.0	140	990	< 0.50	1900	750	1300 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	15-Jul-2017		1200	< 0.50	86	2.8	< 0.50	280	5.3	150	990	< 0.50	1900	900	1300 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	19-Aug-2017		590	< 0.50	38	51	< 0.50	140	2.7	75	490	< 0.50	1000	460	720 #1	0.49	0.11	0.041	0.012	0.12	---
	14-Sep-2017		560	< 0.50	36	48	< 0.50	140	2.5	65	460	< 0.50	980	430	820 #1	0.53	0.12	< 0.033	< 0.010	0.12	---
	14-Oct-2017		840	< 0.50	44	15	< 0.50	170	3.3	57	690	< 0.50	1300	570	720 #1	0.10	0.023	< 0.033	< 0.010	0.023	---
	23-Nov-2017		1100	< 1.0	87	< 2.0 #8	< 1.0	220	4.0	130	860	< 1.0	1700	700	1100 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RB-MW17-08	16-Jun-2017	**W-CAT-4**	1200	< 0.50	77	2.5	< 0.50	220	5.1	140	1000	< 0.50	1900	760	1300 #1	0.067	0.015	< 0.033	< 0.010	0.015	---
	15-Jul-2017		1200	< 0.50	76	2.2	< 0.50	260	5.6	150	1000	< 0.50	1900	890	1300 #1	0.076	0.017	< 0.033	< 0.010	0.017	---
	19-Aug-2017		1200	< 0.50	56	2.0	< 0.50	230	3.7	120	1000	< 0.50	1800	760	1200 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	19-Aug-2017		1300	< 0.50	55	2.1	< 0.50	230	3.8	120	1000	< 0.50	1800	760	1200 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Sep-2017		1200	< 0.50	39	< 1.0	< 0.50	260	4.2	98	970	< 0.50	1700	850	1200 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Oct-2017		1100	< 0.50	44	< 0.50	< 0.50	210	4.2	110	910	< 0.50	1700	720	940 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	23-Nov-2017		1100	< 1.0	62	< 0.50	< 1.0	220	4.2	120	900	< 1.0	1600	740	1100 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	03-Oct-2019		430	< 1.0	24	11	< 1.0	89	2.2	66	350	< 1.0	710	290	850 #5	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RB-MW17-09	16-Jun-2017	**W-CAT-4**	1200	< 0.50	46	24	< 0.50	220	5.0	110	970	< 0.50	1800	780	1300 #1	0.14	0.032	< 0.033	< 0.010	0.032	---
(Duplicate)	16-Jun-2017		1200	< 0.50	46	25	< 0.50	220	5.0	110	970	< 0.50	1800	790	1300 #1	0.14	0.032	< 0.033	< 0.010	0.032	---
	15-Jul-2017		1200	< 0.50	47	29	< 0.50	260	6.5	130	980	< 0.50	1800	930	1300 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	19-Aug-2017		1200	< 0.50	43	19	< 0.50	220	4.5	110	1000	< 0.50	1800	770	1200 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Sep-2017		1200	< 0.50	43	14	< 0.50	250	4.7	110	970	< 0.50	1700	850	1100 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Oct-2017		1200	< 0.50	36	13	< 0.50	140	2.9	65	960	< 0.50	1700	500	960 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	23-Nov-2017		1100	< 1.0	26	0.94	< 1.0	220	4.0	63	890	< 1.0	1500	800	1000 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	03-Oct-2019		960	< 1.0	27	< 1.0	< 1.0	190	4.0	72	780	< 1.0	1400	680	920 #5	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RB-MW17-10	23-Nov-2017	**W-CAT-4**	1300	< 1.0	52	3.2	< 1.0	230	4.8	170	1100	< 1.0	1900	790	1200 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	03-Oct-2019		990	< 1.0	47	1.0	< 1.0	170	3.7	120	810	< 1.0	1500	580	940 #5	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RB-MW17-11	24-Jun-2018	**W-CAT-4**	450	< 1.0	31	92	< 1.0	110	3.3	120	370	< 1.0	940	380	580 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	03-Oct-2019		340	< 1.0	35	15	< 1.0	110	3.5	80	280	< 1.0	640	360	630	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RB-RW-4	15-Aug-2016	**W-CAT-4**	1200	< 0.50	17	20	< 0.50	290	2.2	23	950	< 0.50	1600	960	1300 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
RB-RW-5	02-Nov-2016	**W-CAT-4**	1300	< 0.50	24	260 #2	< 0.50	290	7.9	41	1100	< 0.50	2200	1200	1500	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	15-Mar-2017		1600	< 0.50	25	15	< 0.50	280	7.3	71	1300	< 0.50	2300	1200	1400	0.061	0.014	< 0.033	< 0.010	0.014	---
	11-Apr-2017		1500	< 0.50	25	10	< 0.50	250	6.2	62	1200	< 0.50	2000	1000	1300	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	10-May-2017		960	< 0.50	22	120	< 0.50	190	9.5	41	790	< 0.50	1600	720	860 #1	0.075	0.017	< 0.033	< 0.010	0.017	---
	16-Jun-2017		1200	< 0.50	20	420 #2	< 0.50	260	4.0	34	950	< 0.50	2100	1200	1500	8.5	1.9	0.29	0.088	2.0	---

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Table 4A

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
RB-RW-5 (cont.)	15-Jul-2017		1100	< 0.50	21	410 #2	< 0.50	290	3.4	38	900	< 0.50	2000	1400	1500	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	19-Aug-2017		1200	< 0.50	23	370 #2	< 0.50	260	3.7	37	970	< 0.50	2100	1200	1600 #1	0.071	0.016	< 0.033	< 0.010	0.016	---
	15-Sep-2017		1200	< 0.50	24	330 #2	< 0.50	300	3.2	40	980	< 0.50	2100	1400	1500	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Oct-2017		1200	< 0.50	24	330 #2	< 0.50	230	3.1	38	980	< 0.50	2100	1100	1200 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	23-Nov-2017		1200	< 1.0	22	250 #2	< 1.0	280	4.1	41	980	< 1.0	2000	1200	1400 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	03-Oct-2019		1400	< 1.0	21	200	< 1.0	290	4.2	42	1100	< 1.0	2100	1200	1400	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RB-RW-6	15-Aug-2016	**W-CAT-4**	1100	< 0.50	21	450 #2	< 0.50	240	6.6	29	870	< 0.50	2100	1300	1500	1.3	0.30	0.10	0.031	0.33	---
RB-RW-8	15-Aug-2016	**W-CAT-4**	920	< 0.50	57	< 1.0	< 0.50	120	4.2	190	750	< 0.50	1500	420	960 #1	< 0.044	< 0.010	0.043	0.013	< 0.020	---
	15-Mar-2017		1000	< 0.50	70	1.1	< 0.50	130	7.6	190	840	< 0.50	1700	460	900	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	11-Apr-2017		1000	< 0.50	81	3.3	< 0.50	130	6.4	190	850	< 0.50	1700	450	1200 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
(Duplicate)	11-Apr-2017		1000	< 0.50	82	< 1.0	< 0.50	120	5.7	170	830	< 0.50	1700	400	1100 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	10-May-2017		280	< 0.50	3.4	160	< 0.50	130	4.3	2.9	230	< 0.50	730	380	440 #1	0.49	0.11	0.11	0.033	0.14	---
(Duplicate)	10-May-2017		280	< 0.50	3.6	160	< 0.50	130	4.3	2.8	230	< 0.50	730	380	340 #1	0.59	0.13	0.12	0.035	0.17	---
	16-Jul-2017		480	< 0.50	3.4	110	< 0.50	170	2.6	7.5	400	< 0.50	900	510	630	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	19-Aug-2017		500	< 0.50	4.1	47	< 0.50	130	2.1	8.3	410	< 0.50	790	430	500	0.54	0.12	0.20	0.061	0.18	---
(Duplicate)	19-Aug-2017		510	< 0.50	4.0	42	< 0.50	130	2.1	8.3	420	< 0.50	800	430	440 #1	0.30	0.068	0.13	0.039	0.11	---
	14-Sep-2017		510	< 0.50	2.9	42	< 0.50	150	2.4	6.6	420	< 0.50	820	480	560 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	14-Sep-2017		510	< 0.50	2.7	43	< 0.50	150	2.4	6.7	420	< 0.50	830	480	560 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Oct-2017		670	< 0.50	4.9	13	< 0.50	160	2.5	15	550	< 0.50	1000	520	640 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	22-Nov-2017		720	< 1.0	4.3	< 1.0	< 1.0	180	2.1	11	590	< 1.0	1000	600	620 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	03-Oct-2019		1100	< 1.0	110	< 1.0	< 1.0	70	4.4	230	930	< 1.0	1800	330	900	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RB-RW-9	15-Aug-2016	**W-CAT-4**	1100	< 0.50	21	1.2	< 0.50	210	2.8	42	910	< 0.50	1600	860	1200 #1	< 0.44	< 0.10 #5	< 0.33	< 0.10 #5	< 0.020	---
	15-Mar-2017		1300	< 0.50	24	3.1	< 0.50	240	4.2	47	1100	< 0.50	1900	1000	1000	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	11-Apr-2017		1300	< 0.50	24	1.2	< 0.50	230	3.9	44	1000	< 0.50	1800	950	1400 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	10-May-2017		350	< 0.50	4.0	23	< 0.50	83	5.8	7.6	290	< 0.50	580	290	320 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	15-Jun-2017		540	< 0.50	3.8	230 #2	< 0.50	180	3.5	20	440	< 0.50	1100	630	940 #1	0.14	0.032	< 0.033	< 0.010	0.032	---
	16-Jul-2017		820	< 0.50	9.0	26	< 0.50	200	3.6	26	670	< 0.50	1200	740	1100 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	19-Aug-2017		1100	< 0.50	12	2.3	< 0.50	200	3.6	35	880	< 0.50	1500	780	1000 #1	1.5	0.34	0.16	0.048	0.39	---
	14-Sep-2017		1100	< 0.50	14	< 0.50	< 0.50	240	4.3	39	900	< 0.50	1600	930	940 #1	0.15	0.034	< 0.033	< 0.010	0.034	---
	14-Oct-2017		1100	< 0.50	17	< 0.50	< 0.50	210	4.1	40	930	< 0.50	1600	810	960 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	23-Nov-2017		1200	< 1.0	18	< 0.50	< 1.0	230	4.5	42	950	< 1.0	1600	920	1200 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	03-Oct-2019		1100	< 1.0	23	4.6	< 1.0	190	3.7	46	890	< 1.0	1600	830	1100 #5	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RB-RW-12	15-Aug-2016	**W-CAT-4**	910	< 0.50	12	0.52	< 0.50	220	3.3	16	750	< 0.50	1300	750	840 #1	0.057	0.013	< 0.033	< 0.010	< 0.020	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
RB-RW-13	15-Mar-2017	**W-CAT-4**	1100	< 0.50	26	3.5	< 0.50	230	4.2	69	880	< 0.50	1600	760	970	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	11-Apr-2017		1200	< 0.50	50	2.9	< 0.50	170	4.1	230	970	< 0.50	1700	550	1100	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	10-May-2017		700	< 0.50	48	13	< 0.50	82	10	120	570	< 0.50	1200	270	600 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	15-Jun-2017		580	< 0.50	8.6	200	< 0.50	190	2.5	12	470	< 0.50	1100	620	760	2.2	0.51	0.096	0.029	0.53	---
(Duplicate)	15-Jun-2017		560	< 0.50	8.3	200	< 0.50	190	2.5	12	460	< 0.50	1100	620	760	2.2	0.49	0.063	0.019	0.51	---
	16-Jul-2017		840	< 0.50	12	220 #2	< 0.50	300	2.6	16	690	< 0.50	1500	960	1200 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	19-Aug-2017		840	< 0.50	11	150	< 0.50	250	2.4	15	690	< 0.50	1400	810	1000 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	15-Sep-2017		900	< 0.50	15	260 #2	< 0.50	340	2.7	20	740	< 0.50	1700	1100	1300 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Oct-2017		910	< 0.50	20	180	< 0.50	230	2.6	30	750	< 0.50	1600	730	860 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	23-Nov-2017		730	< 1.0	11	9.5	< 1.0	200	3.0	25	600	< 1.0	1000	640	640 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	03-Oct-2019		910	< 1.0	15	98	< 1.0	230	5.1	24	740	< 1.0	1400	770	980 #5	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	03-Oct-2019		890	< 1.0	16	98	< 1.0	230	5.1	23	730	< 1.0	1400	770	940 #5	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
Mainland East - Former Refinery - Bedrock																					
NWR 09-2-26	12-Mar-2016	**W-CAT-3**	1200	< 0.50	160	210 #1	< 0.50	230	1.6	210	980	< 0.50	2400	970	1600 #3	< 0.044	< 0.010	< 0.033	0.010	< 0.020	0.044
	05-Aug-2016		---	---	82	220 #1	---	140	2.2	470	---	---	2000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
(Duplicate)	05-Aug-2016		---	---	29	260 #1	---	140	2.2	480	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	03-Nov-2016		930	< 0.50	24	230 #1	< 0.50	170	0.95	110	760	< 0.50	1700	750	1200 #3	< 0.22	< 0.050 #2	< 0.16	< 0.050 #2	< 0.020	0.046
(Duplicate)	03-Nov-2016		930	< 0.50	24	230 #1	< 0.50	170	1.0	120	770	< 0.50	1700	760	1200 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.046
	13-Aug-2017		---	---	2600 #1	24	---	44	9.0	2800	---	---	12000	---	---	< 0.44	< 0.10 #2	< 0.33	< 0.10 #2	< 0.14	---
(Duplicate)	13-Aug-2017		---	---	2300 #1	< 1.0	---	44	9.2	2800	---	---	11000	---	---	< 0.44	< 0.10 #2	< 0.33	< 0.10 #2	< 0.14	---
	20-Jul-2018		---	---	2400 #1	< 1.0	---	35	11	2500	---	---	12000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	20-Jul-2018		---	---	1800 #1	47	---	48	6.7	2000	---	---	8700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	15-Jul-2019		---	---	1800 #1	6.0	---	140	1.7	400	---	---	9400	---	---	< 0.22	< 0.050 #2	< 0.16	< 0.050 #2	< 0.071	---
(Duplicate)	15-Jul-2019		---	---	1700 #1	56	---	140	1.7	400	---	---	9000	---	---	< 0.22	< 0.050 #2	< 0.16	< 0.050 #2	< 0.071	---
NWR 09-4-5	05-Aug-2016	**W-CAT-3**	---	---	14	5.6	---	200	2.2	47	---	---	1400	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	11-Apr-2017		590	< 0.50	55	120	< 0.50	100	5.5	150	480	< 0.50	1300	360	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	16-Jun-2017		430	< 0.50	5.1	82	< 0.50	110	1.3	20	360	< 0.50	790	380	680 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	---
	15-Jul-2017		820	< 0.50	6.9	20	< 0.50	210	1.8	20	670	< 0.50	1200	720	1000 #3	< 0.22	< 0.050 #8	< 0.16	< 0.050 #8	< 0.071	---
	15-Aug-2017		---	---	15	2.2	---	180	2.0	35	---	---	1400	---	---	< 0.22	< 0.050 #8	< 0.16	< 0.050 #8	< 0.071	---
	14-Sep-2017		940	< 0.50	22	< 1.0	< 0.50	200	2.2	59	770	< 0.50	1400	710	740 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Oct-2017		1000	< 0.50	57	0.94	< 0.50	130	2.7	150	850	< 0.50	1600	450	1000 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	23-Nov-2017		1000	< 1.0	72	1.6	< 1.0	140	3.8	200	850	< 1.0	1700	500	1100 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	20-Jul-2018		---	---	30	1.2	---	---	---	---	---	---	1600	---	---	< 0.44	< 0.10 #8	< 0.33	< 0.10 #8	< 0.14	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions: Bicarbonate (mg/L)	Anions: Carbonate (mg/L)	Anions: Chloride (mg/L)	Anions: Sulphate (mg/L)	Anions: Hydroxide (mg/L)	Cations: Calcium (mg/L)	Cations: Potassium (mg/L)	Cations: Sodium (mg/L)	General: Alkalinity (Total; as $CaCO_3$) (mg/L)	General: Alkalinity (PP; as $CaCO_3$) (mg/L)	General: Electrical Conductivity (uS/cm)	General: Hardness (Total; as $CaCO_3$) (mg/L)	General: Total Dissolved Solids (mg/L)	Inorganic Nitrogen Compounds: Nitrate (mg/L)	Inorganic Nitrogen Compounds: Nitrate (as N) (mg/L)	Inorganic Nitrogen Compounds: Nitrite (mg/L)	Inorganic Nitrogen Compounds: Nitrite (as N) (mg/L)	Inorganic Nitrogen Compounds: Nitrite-plus-Nitrate (as N) (mg/L)	Phenols: Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
NWR 09-4-5 (cont.)	15-Jul-2019		---	---	16	1.8	---	---	---	---	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	03-Oct-2019		1000	< 1.0	27	< 1.0	< 1.0	200	2.9	71	860	< 1.0	1500	710	1200 #4	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
NWR 09-5-19	12-Mar-2016	**W-CAT-3**	1400	< 0.50	200 #1	7.3	< 0.50	29	4.7	1100 #1	1100	< 0.50	2500	130	3300 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.015
	05-Aug-2016		---	---	200 #1	14	---	65	4.7	380	---	---	2700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	13-Aug-2017		---	---	660 #1	< 1.0	---	25	4.0	870 #1	---	---	4900	---	---	< 0.44	< 0.10 #2	< 0.33	< 0.10 #2	< 0.14	---
	22-Jul-2018		---	---	480 #1	< 1.0	---	19	4.9	1300	---	---	4100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	15-Jul-2019		---	---	790 #1	< 1.0	---	23	5.0	1200 #1	---	---	5400	---	---	< 0.22	< 0.050 #2	< 0.16	< 0.050 #2	< 0.071	---
NWR 98-13-21	12-Mar-2016	**W-CAT-3**	930	< 0.50	150	14	< 0.50	75	4.1	300	760	< 0.50	1700	310	1100 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0022
	05-Aug-2016		---	---	130	9.7	---	66	4.1	280	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
(Duplicate)	05-Aug-2016		---	---	130	10	---	66	4.2	280	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	02-Nov-2016		870	< 0.50	140	20	< 0.50	110	4.2	190	720	< 0.50	1700	460	1000 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0045
	15-Aug-2017		---	---	140	5.9	---	94	4.4	260	---	---	1800	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	20-Jul-2018		---	---	120	16	---	99	4.7	200	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	20-Jul-2018		---	---	110	15	---	99	4.9	210	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	15-Jul-2019		---	---	1300 #1	< 1.0	---	120	5.5	440	---	---	7500	---	---	< 0.22	< 0.050 #2	< 0.16	< 0.050 #2	< 0.071	---
(Duplicate)	15-Jul-2019		---	---	1300 #1	< 1.0	---	120	5.4	440	---	---	7300	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
NWR-OBS33	02-Nov-2016	**W-CAT-3**	580	< 0.50	330 #2	8.8	< 0.50	160	4.9	150	480	< 0.50	2000	700	1300 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
RB-RW-10	15-Aug-2016	**W-CAT-3**	1200	< 0.50	94	6.8	< 0.50	140	4.7	250	950	< 0.50	1900	510	1200 #1	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
P100	14-Mar-2016	**W-CAT-3**	1900	< 0.50	150	< 1.0	< 0.50	30	3.3	770 #2	1600	< 0.50	3000	110	2000	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	20-Aug-2016		1200	< 0.50	83	< 1.0	< 0.50	65	4.4	350	1000	< 0.50	1900	280	1200	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	02-Nov-2016		1200	< 0.50	74	5.0	< 0.50	62	4.0	330	960	< 0.50	1800	260	1100	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
P200	14-Mar-2016	**W-CAT-3**	1100	< 0.50	92	< 1.0	< 0.50	81	4.6	310	920	< 0.50	1800	340	1100	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	20-Aug-2016		1000	< 0.50	78	< 1.0	< 0.50	80	4.6	270	860	< 0.50	1700	350	1000	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	02-Nov-2016		1000	< 0.50	72	< 1.0	< 0.50	72	4.3	270	860	< 0.50	1700	310	1000	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
(Duplicate)	02-Nov-2016		1100	< 0.50	72	< 1.0	< 0.50	73	4.3	260	860	< 0.50	1700	320	1000	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
P100	14-Mar-2016	**W-CAT-3**	1900	< 0.50	150	< 1.0	< 0.50	30	3.3	770 #2	1600	< 0.50	3000	110	2000	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	20-Aug-2016		1200	< 0.50	83	< 1.0	< 0.50	65	4.4	350	1000	< 0.50	1900	280	1200	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	02-Nov-2016		1200	< 0.50	74	5.0	< 0.50	62	4.0	330	960	< 0.50	1800	260	1100	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	03-Sep-2019		1200	< 1.0	84	< 1.0	< 1.0	72	4.5	380	1000	< 1.0	1900	300	1200	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
P200	14-Mar-2016	**W-CAT-3**	1100	< 0.50	92	< 1.0	< 0.50	81	4.6	310	920	< 0.50	1800	340	1100	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	20-Aug-2016		1000	< 0.50	78	< 1.0	< 0.50	80	4.6	270	860	< 0.50	1700	350	1000	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---

Advisian
Worley Group

Table 4A

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
P200 (cont.)	02-Nov-2016		1000	< 0.50	72	< 1.0	< 0.50	72	4.3	270	860	< 0.50	1700	310	1000	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
(Duplicate)	02-Nov-2016		1100	< 0.50	72	< 1.0	< 0.50	73	4.3	260	860	< 0.50	1700	320	1000	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	03-Sep-2019		1100	< 1.0	89	< 1.0	< 1.0	92	5.2	310	930	< 1.0	1900	390	1200	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
P700	14-Mar-2016	**W-CAT-3**	1200	< 0.50	84	2.4	< 0.50	69	4.3	350	980	< 0.50	1900	280	1200	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	20-Aug-2016		1900	< 0.50	160	< 1.0	< 0.50	29	3.7	690 [#2]	1500	< 0.50	2900	110	1900	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	02-Nov-2016		1900	< 0.50	150	< 1.0	< 0.50	33	3.5	710 [#2]	1600	< 0.50	3000	130	2000	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	03-Sep-2019		1900	< 1.0	140	< 1.0	< 1.0	25	3.5	750 [#1]	1600	< 1.0	3000	91	1900	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
C-27X Sump - Surficial Sediment																					
C27-16-2-3	03-Aug-2016	**W-CAT-1**	1500	< 0.50	18	720 [#1]	< 0.50	230	5.5	300	1300	< 0.50	3400	900	2300 [#3]	44	9.9	0.078	0.024	10	0.017
(Duplicate)	03-Aug-2016		1500	< 0.50	16	680 [#1]	< 0.50	230	5.5	300	1200	< 0.50	3100	900	2200 [#3]	40	9.0	0.072	0.022	9.0	---
	15-Aug-2017		1000	< 0.50	3.7	330 [#1]	< 0.50	150	4.6	240	830	< 0.50	2000	650	1300	0.20	0.045	< 0.033	< 0.010	0.045	0.011
(Duplicate)	15-Aug-2017		1000	< 0.50	3.8	330 [#1]	< 0.50	150	4.5	240	830	< 0.50	2000	640	1300 [#3]	0.23	0.053	< 0.033	< 0.010	0.053	0.010
	13-Jul-2018		1100	< 1.0	3.0	370 [#1]	< 1.0	210	4.9	150	880	< 1.0	2100	910	1400	3.4	0.77	< 0.033	< 0.010	0.77	0.0098
(Duplicate)	13-Jul-2018		1100	< 1.0	3.2	400 [#1]	< 1.0	190	4.8	140	880	< 1.0	2100	860	1500	3.5	0.78	< 0.033	< 0.010	0.78	0.0096
	11-Jul-2019		1200	< 1.0	4.4	430 [#1]	< 1.0	230	5.1	120	940	< 1.0	2200	1100	1600	23	5.3	< 0.033	< 0.010	5.3	0.011
(Duplicate)	11-Jul-2019		1100	< 1.0	4.3	440 [#1]	< 1.0	230	5.1	120	940	< 1.0	2200	1100	1600	23	5.3	< 0.033	< 0.010	5.3	0.0098
C27-16-4-3	03-Aug-2016	**W-CAT-1**	1100	< 0.50	14	260 [#1]	< 0.50	190	5.7	99	910	< 0.50	1900	920	1300 [#3]	0.048	0.011	0.046	0.014	0.025	0.0079
	13-Aug-2017		1200	< 0.50	17	280 [#1]	< 0.50	220	4.9	110	990	< 0.50	2100	1000	1300 [#3]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0069
	13-Jul-2018		770	< 1.0	8.1	140	< 1.0	160	4.2	59	630	< 1.0	1300	680	740	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0045
	11-Jul-2019		980	< 1.0	18	190	< 1.0	130	3.7	190	800	< 1.0	1700	560	1100 [#5]	0.47	0.11	< 0.033	< 0.010	0.11	0.0072
Cemetery Sump - Surficial Sediment																					
CEM 08-2-5	03-Aug-2016	**W-CAT-1**	---	---	7700 [#3]	670 [#1]	---	1300	6.2	3300	---	---	22000	---	---	< 0.44	< 0.10 [#2]	< 0.33	< 0.10 [#2]	< 0.020	---
CEM 08-4-5	03-Aug-2016	**W-CAT-1**	---	---	64	1100 [#1]	---	500	2.8	150	---	---	3300	---	---	36	8.2	0.11	0.033	8.2	---
CEM 09-3-2	03-Aug-2016	**W-CAT-1**	940	< 0.50	630 [#3]	1200 [#1]	< 0.50	670 [#3]	3.5	180	770	< 0.50	4600	2400	3700 [#1]	0.10	0.023	< 0.033	< 0.010	0.023	21
(Duplicate)	03-Aug-2016		940	< 0.50	650 [#3]	1100 [#1]	< 0.50	670 [#3]	3.5	180	770	< 0.50	4600	2400	3700 [#1]	0.12	0.026	< 0.033	< 0.010	0.026	22
Mainland Sumps - Surficial Sediment																					
MLS 09-1-3	03-Aug-2016	**W-CAT-1**	---	---	1700 [#1]	940 [#1]	---	590 [#1]	22	440	---	---	6900	---	---	0.18	0.041	< 0.033	< 0.010	0.041	---
	16-Aug-2017		---	---	1100 [#1]	570 [#1]	---	420	14	320	---	---	4700	---	---	0.32	0.073	< 0.033	< 0.010	0.073	---
(Duplicate)	16-Aug-2017		---	---	1000 [#1]	570 [#1]	---	410	14	320	---	---	4700	---	---	0.35	0.078	< 0.033	< 0.010	0.078	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
MLS 09-1-3 (cont.)	19-Jul-2018		---	---	1500 #1	870 #1	---	530 #1	21	440	---	---	6500	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	---
(Duplicate)	19-Jul-2018		---	---	1500 #1	880 #1	---	---	---	---	---	---	6500	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	---
	18-Jul-2019		---	---	1600 #1	1000 #1	---	600 #1	23	490	---	---	7000	---	---	0.048	0.011	< 0.033	< 0.010	< 0.014	---
(Duplicate)	18-Jul-2019		---	---	1500 #1	1000 #1	---	610 #1	23	480	---	---	7000	---	---	0.047	0.011	< 0.033	< 0.010	< 0.014	---
MLS 09-2-3	03-Aug-2016	**W-CAT-1**	---	---	950 #1	98	---	230	7.7	620 #1	---	---	4800	---	---	0.059	0.013	< 0.033	< 0.010	< 0.020	---
	16-Aug-2017		---	---	810 #1	110	---	220	5.9	610 #1	---	---	4200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	19-Jul-2018		---	---	810 #1	81	---	---	---	---	---	---	4200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	18-Jul-2019		---	---	890 #1	87	---	---	---	---	---	---	4500	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
MLS 09-5-3	03-Aug-2016	**W-CAT-1**	---	---	310 #1	570 #1	---	---	---	---	---	---	3100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	16-Aug-2017		---	---	320 #1	870 #1	---	---	---	---	---	---	3300	---	---	0.20	0.044	< 0.033	< 0.010	0.044	---
	19-Jul-2018		---	---	290 #1	710 #1	---	---	---	---	---	---	3200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	18-Jul-2019		---	---	200	650 #1	---	---	---	---	---	---	2900	---	---	0.094	0.021	< 0.033	< 0.010	0.021	---
MLS 09-15-3	03-Aug-2016	**W-CAT-1**	---	---	750 #1	740 #1	---	---	---	---	---	---	4500	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	16-Aug-2017		---	---	1600 #1	560 #1	---	---	---	---	---	---	6600	---	---	0.40	0.090	< 0.033	< 0.010	0.090	---
	19-Jul-2018		---	---	1000 #1	570 #1	---	360	7.7	490	---	---	5100	---	---	0.61	0.14 #2	< 0.33	**< 0.10 #2**	< 0.14	---
	18-Jul-2019		---	---	980 #1	520 #1	---	390	7.8	540 #1	---	---	5300	---	---	0.35	0.080	< 0.033	< 0.010	0.080	---
MLS-13-2-3	03-Aug-2016	**W-CAT-1**	620	< 0.50	160	420 #1	< 0.50	52	7.3	320	510	< 0.50	2200	330	1200	0.84	0.19	0.10	0.032	0.22	0.0073
	16-Aug-2017		460	< 0.50	170	320 #1	< 0.50	55	6.6	310	380	< 0.50	1800	340	1200	0.76	0.17	< 0.033	< 0.010	0.17	0.0032
	19-Jul-2018		400	< 1.0	68	270 #1	< 1.0	36	5.1	220	330	< 1.0	1300	210	880	1.1	0.25	< 0.033	< 0.010	0.25	0.0060
	18-Jul-2019		400	< 1.0	68	290 #1	< 1.0	42	5.3	230	330	< 1.0	1400	230	900	0.98	0.22	< 0.033	< 0.010	0.22	0.0036
MLS-14-5-4	03-Aug-2016	**W-CAT-1**	550	< 0.50	100	44	< 0.50	77	3.3	100	450	< 0.50	1200	330	770	0.38	0.085	< 0.033	< 0.010	0.085	0.0032
	16-Aug-2017		720	< 0.50	110	59	< 0.50	85	3.2	110	590	< 0.50	1400	370	730	0.046	0.010	< 0.033	< 0.010	< 0.014	0.0035
	19-Jul-2018		---	---	120	42	---	97	4.0	130	---	---	1300	---	---	0.74	0.17	< 0.033	< 0.010	0.17	---
	18-Jul-2019		---	---	140	57	---	100	3.7	130	---	---	1500	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
Mainland Sumps - Bedrock																					
MLS 02-5-8	03-Aug-2016	**W-CAT-3**	---	---	1100 #1	35 #2	---	---	---	---	---	---	7500	---	---	0.27	0.062	< 0.033	< 0.010	0.062	---
	16-Aug-2017		---	---	990 #1	140	---	---	---	---	---	---	6500	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	---
	19-Jul-2018		---	---	970 #1	76	---	---	---	---	---	---	6800	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	---
	15-Jul-2019		---	---	890 #1	63	---	---	---	---	---	---	6700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
MLS-10-1-7	04-Aug-2016	**W-CAT-3**	---	---	630 #1	3.3	---	---	---	---	---	---	4800	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
(Duplicate)	04-Aug-2016		---	---	620 #1	< 1.0	---	---	---	---	---	---	4800	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	16-Aug-2017		---	---	620 #1	< 1.0	---	---	---	---	---	---	5100	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	---
(Duplicate)	16-Aug-2017		---	---	640 #1	< 1.0	---	---	---	---	---	---	5100	---	---	0.96	0.22 #2	< 0.33	**< 0.10 #2**	0.22	---
	19-Jul-2018		---	---	640 #1	< 1.0	---	---	---	---	---	---	5000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	19-Jul-2018		---	---	640 #1	< 1.0	---	---	---	---	---	---	5000	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	---
	15-Jul-2019		---	---	610 #1	< 1.0	---	---	---	---	---	---	5200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	15-Jul-2019		---	---	620 #1	< 1.0	---	---	---	---	---	---	5200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
Mainland Drilling Sump - Surficial Sediment																					
MLS-13-1-3	04-Aug-2016	**W-CAT-3**	330	< 0.50	190	120	< 0.50	200	3.0	110	270	< 0.50	1600	720	1000	0.11	0.024	0.059	0.018	0.042	0.0060
	16-Aug-2017		920	< 0.50	170	280 #1	< 0.50	270	3.0	110	760	< 0.50	2200	970	1400	0.65	0.15	< 0.033	< 0.010	0.15	0.0052
	19-Jul-2018		---	---	190	280 #1	---	280	4.2	140	---	---	2200	---	---	0.50	0.11	< 0.033	< 0.010	0.11	---
	13-Jul-2019		---	---	190	240 #1	---	320	1.7	54	---	---	2100	---	---	1.1	0.25	< 0.033	< 0.010	0.25	---
Mainland Drilling Sump - Bedrock																					
MLS 08-1-4	04-Aug-2016	**W-CAT-3**	---	---	280 #1	2400 #1	---	250	19	1000 #1	---	---	6100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	16-Aug-2017		---	---	500 #1	1200 #1	---	120	12	1200 #1	---	---	5800	---	---	0.14	0.032	0.034	0.010	0.043	---
	21-Jul-2018		---	---	460 #1	1500 #1	---	170	15	1200 #1	---	---	6000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	13-Jul-2019		---	---	190	3000 #1	---	330	25	970 #1	---	---	6300	---	---	0.061	0.014	< 0.033	< 0.010	< 0.014	---
MLS 08-2-5	04-Aug-2016	**W-CAT-3**	---	---	240 #1	100	---	---	---	---	---	---	1800	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	16-Aug-2017		---	---	710 #1	96	---	---	---	---	---	---	3200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	16-Aug-2017		---	---	310 #1	120	---	---	---	---	---	---	1900	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
MLS 08-3-4	04-Aug-2016	**W-CAT-3**	---	---	450 #1	690 #1	---	170	8.3	840 #1	---	---	4700	---	---	0.050	0.011	< 0.033	< 0.010	< 0.020	---
(Duplicate)	04-Aug-2016		---	---	460 #1	730 #1	---	160	8.2	830 #1	---	---	4700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	16-Aug-2017		---	---	870 #1	40	---	59	9.5	1400	---	---	6300	---	---	0.099	0.022	0.063	0.019	0.042	---
	19-Jul-2018		---	---	700 #1	200 #1	---	88	8.4	1200 #1	---	---	5400	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	19-Jul-2018		---	---	680 #1	200 #1	---	85	8.1	1100 #1	---	---	5400	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	---
	13-Jul-2019		---	---	300 #1	1800 #1	---	250	9.3	830 #1	---	---	5200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	13-Jul-2019		---	---	310 #1	1700 #1	---	250	9.2	820 #1	---	---	5200	---	---	0.049	0.011	< 0.033	< 0.010	< 0.014	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
Well Services Sump - Surficial Sediment																					
MLS 09-9-2	04-Aug-2016	**W-CAT-3**	---	---	1800 #1	120	---	570 #1	8.0	300	---	---	6100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	16-Aug-2017		---	---	1700 #1	470 #1	---	590 #1	5.2	400	---	---	6300	---	---	2.9	0.65	0.066	0.020	0.67	---
	19-Jul-2018		---	---	1600 #1	280 #1	---	480	4.6	260	---	---	5700	---	---	0.59	0.13	< 0.033	< 0.010	0.13	---
	14-Jul-2019		---	---	1400 #1	260 #1	---	560 #1	4.8	280	---	---	5600	---	---	0.48	0.11	< 0.033	< 0.010	0.11	---
MLS-13-3-3	05-Aug-2016	**W-CAT-3**	670	< 0.50	280 #1	64	< 0.50	160	2.5	100	550	< 0.50	2000	680	1000	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	< 0.0020
	16-Aug-2017		690	< 0.50	370 #1	48	< 0.50	200	3.2	130	560	< 0.50	2200	820	1300	0.079	0.018	< 0.033	< 0.010	0.018	0.0041
	19-Jul-2018		730	< 1.0	410 #1	47	< 1.0	210	2.8	120	600	< 1.0	2300	870	1300	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0062
	14-Jul-2019		710	< 1.0	490 #1	42	< 1.0	270	2.5	150	580	< 1.0	2600	1000	1600	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0058
MLS-13-4-3	05-Aug-2016	**W-CAT-3**	700	< 0.50	3.9	12	< 0.50	100	1.3	30	570	< 0.50	1000	440	560	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0025
	16-Aug-2017		900	< 0.50	3.4	11	< 0.50	160	1.8	40	740	< 0.50	1300	690	760	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0044
	19-Jul-2018		---	---	4.9	8.0	---	110	2.1	33	---	---	910	---	---	< 0.44	< 0.10 #2	< 0.33	< 0.10 #2	< 0.14	0.0053
	14-Jul-2019		---	---	5.9	12	---	140	0.90	28	---	---	1000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0068
Well Services Sump - Bedrock																					
MLS 02-10-8	04-Aug-2016	**W-CAT-3**	---	---	540 #1	2.6	---	21	6.8	1300 #1	---	---	5800	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	16-Aug-2017		---	---	670 #1	< 1.0	---	28	6.8	1700	---	---	6500	---	---	< 0.44	< 0.10 #2	< 0.33	< 0.10 #2	< 0.14	---
	19-Jul-2018		---	---	520 #1	< 1.0	---	---	---	---	---	---	5600	---	---	< 0.44	< 0.10 #2	< 0.33	< 0.10 #2	< 0.14	---
	14-Jul-2019		---	---	620 #1	< 1.0	---	---	---	---	---	---	6100	---	---	< 0.44	< 0.10 #2	< 0.33	< 0.10 #2	< 0.14	---
MLS 02-7-7	04-Aug-2016	**W-CAT-3**	---	---	410 #1	370 #1	---	---	---	---	---	---	2900	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	16-Aug-2017		---	---	200 #2	390 #1	---	---	---	---	---	---	2400	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	19-Jul-2018		---	---	220 #1	360 #1	---	---	---	---	---	---	2300	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	14-Jul-2019		---	---	190	390 #1	---	---	---	---	---	---	2100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
MLS 02-8-8	04-Aug-2016	**W-CAT-3**	---	---	2200 #1	1.3	---	---	---	---	---	---	9000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
(Duplicate)	04-Aug-2016		---	---	2300 #1	3.6	---	---	---	---	---	---	9000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	16-Aug-2017		---	---	2400 #1	1.5	---	---	---	---	---	---	9300	---	---	< 0.44	< 0.10 #2	< 0.33	< 0.10 #2	< 0.14	---
(Duplicate)	16-Aug-2017		---	---	2200 #1	2.0	---	---	---	---	---	---	9200	---	---	0.55	0.12 #2	< 0.33	< 0.10 #2	< 0.14	---
	19-Jul-2018		---	---	2200 #1	11	---	---	---	---	---	---	8500	---	---	< 0.44	< 0.10 #2	< 0.33	< 0.10 #2	< 0.14	---
	14-Jul-2019		---	---	1900 #1	2.5	---	---	---	---	---	---	8600	---	---	< 0.44	< 0.10 #2	< 0.33	< 0.10 #2	< 0.14	---
(Duplicate)	14-Jul-2019		---	---	1900 #1	4.1	---	---	---	---	---	---	8600	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
MLS 02-9-8	04-Aug-2016	**W-CAT-3**	---	---	1600 #1	< 1.0	---	---	---	---	---	---	8000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	16-Aug-2017		---	---	1500 #1	22	---	---	---	---	---	---	7900	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	---
	19-Jul-2018		---	---	1500 #1	< 1.0	---	---	---	---	---	---	7200	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	---
(Duplicate)	19-Jul-2018		---	---	1500 #1	< 1.0	---	---	---	---	---	---	6900	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	---
	14-Jul-2019		---	---	1400 #1	< 1.0	---	---	---	---	---	---	7100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
MLS-10-2-3	04-Aug-2016	**W-CAT-3**	---	---	190	970 #1	---	99	18	650 #1	---	---	3800	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	16-Aug-2017		---	---	240 #1	810 #1	---	86	17	970 #1	---	---	4300	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	---
	19-Jul-2018		---	---	260 #1	1600 #1	---	150	24	910 #1	---	---	4900	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	0.0082
	14-Jul-2019		---	---	230 #1	1300 #1	---	140	19	740 #1	---	---	4500	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0077
Bear Island - Bear Island West Sumps (Sumps 1-5) - Surficial Sediment																					
BI-08-6-4	08-Aug-2016	**W-CAT-2**	---	---	270 #1	1500 #1	---	570 #1	4.0	170	---	---	3800	---	---	0.056	0.013	0.039	0.012	0.024	---
	11-Aug-2017		---	---	330 #1	400 #1	---	550 #1	3.8	210	---	---	4000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	17-Jul-2018		---	---	360 #1	240 #1	---	370	3.9	200	---	---	3600	---	---	< 0.44	< 0.10 #8	< 0.33	**< 0.10 #8**	< 0.14	---
	17-Jul-2019		---	---	400 #1	77	---	98	2.5	260	---	---	2000	---	---	0.16	0.035	< 0.033	< 0.010	0.036	---
BI-08-8-4	08-Aug-2016	**W-CAT-2**	---	---	1100 #1	120	---	---	---	---	---	---	5000	---	---	0.085	0.019	0.041	0.013	0.032	---
(Duplicate)	08-Aug-2016		---	---	1200 #1	120	---	---	---	---	---	---	5200	---	---	0.069	0.016	0.034	0.010	0.026	---
	11-Aug-2017		---	---	770 #1	15	---	---	---	---	---	---	3300	---	---	0.051	0.011	< 0.033	< 0.010	< 0.014	---
(Duplicate)	11-Aug-2017		---	---	770 #1	9.9	---	---	---	---	---	---	3300	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	15-Jul-2018		---	---	1100 #1	110	---	290	4.8	540 #1	---	---	4900	---	---	< 0.44	< 0.10 #8	< 0.33	**< 0.10 #8**	< 0.14	---
	17-Jul-2019		---	---	290 #1	450 #1	---	360	2.8	260	---	---	3300	---	---	0.045	0.010	< 0.033	< 0.010	< 0.014	---
BI-DP 08-5	10-Aug-2016	**W-CAT-2**	---	---	130	470 #1	---	---	---	---	---	---	2100	---	---	0.077	0.017	< 0.033	< 0.010	< 0.020	---
	11-Aug-2017		---	---	140	720 #1	---	---	---	---	---	---	2700	---	---	0.15	0.033	< 0.033	< 0.010	0.033	---
	20-Jul-2018		---	---	130	700 #1	---	---	---	---	---	---	2500	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
BIS-10-3-DP	08-Aug-2016	**W-CAT-2**	950	< 0.50	120	110	< 0.50	200	2.5	41	780	< 0.50	1800	1000	1300 #3	0.077	0.017	< 0.033	< 0.010	< 0.020	---
	11-Aug-2017		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2017		940	< 0.50	110	110	< 0.50	200	2.3	49	770	< 0.50	1800	1100	1200 #3	0.090	0.020	< 0.033	< 0.010	0.020	---
	15-Jul-2018		---	---	130	190 #2	---	160	1.7	43	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	17-Jul-2019		---	---	130	140	---	160	1.1	47	---	---	1600	---	---	0.11	0.026	< 0.033	< 0.010	0.026	---
BI-13-5-2	10-Aug-2016	**W-CAT-2**	500	< 0.50	95	81	< 0.50	130	4.3	48	410	< 0.50	1100	520	780 #3	0.62	0.14	< 0.033	< 0.010	0.14	0.0033
	18-Jul-2018		380	< 1.0	150	120	< 1.0	140	3.5	53	310	< 1.0	1200	520	790	0.74	0.17	< 0.033	< 0.010	0.17	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
BIS-16-1-3	10-Aug-2016	**W-CAT-2**	1200	< 0.50	120	120	< 0.50	270	2.9	140	1000	< 0.50	2200	1000	1400	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0058
	10-Aug-2017		1100	< 0.50	100	180	< 0.50	280	3.9	98	880	< 0.50	2000	1000	1300 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0095
(Duplicate)	10-Aug-2017		1100	< 0.50	100	190	< 0.50	270	4.1	100	890	< 0.50	2000	1000	1300 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0088
	17-Jul-2018		1100	< 1.0	100	270 #1	< 1.0	250	4.0	87	890	< 1.0	2100	940	1500	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0055
	17-Jul-2019		930	< 1.0	110	680 #1	< 1.0	320	4.1	150	760	< 1.0	2600	1200	1900	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0044
BIS-16-7-5	08-Aug-2016	**W-CAT-2**	800	< 0.50	610 #1	76	< 0.50	320	4.5	170	650	< 0.50	3100	1200	2400 #3	0.24	0.054	0.11	0.033	0.087	0.20 #2
	11-Aug-2017		820	< 0.50	620 #1	< 1.0	< 0.50	310	4.0	190	680	< 0.50	3100	1200	1900 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.11 #2
	15-Jul-2018		830	< 1.0	590 #1	< 0.50	< 1.0	310	3.2	180	680	< 1.0	3100	1200	2000 #3	< 0.44	< 0.10 #8	< 0.33	< 0.10 #8	< 0.14	0.048
BIS-16-8-3	08-Aug-2016	**W-CAT-2**	610	< 0.50	13	1600 #1	< 0.50	480	5.9	100	500	< 0.50	3200	2100	3300 #3	0.069	0.016	0.037	0.011	0.027	< 0.0020
	11-Aug-2017		660	< 0.50	14	1400 #1	< 0.50	480	5.0	230	540	< 0.50	3100	2000	2900	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.015
	15-Jul-2018		520	< 1.0	12	930 #1	< 1.0	470	3.3	84	430	< 1.0	2200	1900	3100 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.010
	17-Jul-2019		570	< 1.0	13	760 #1	< 1.0	210	4.2	340	470	< 1.0	2100	840	2600	0.40	0.090	< 0.033	< 0.010	0.090	0.0045
BIS-16-10-4	11-Aug-2016	**W-CAT-2**	970	< 0.50	600 #1	560 #1	< 0.50	330	3.5	310	790	< 0.50	4000	1100	3100 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0038
	11-Aug-2017		950	< 0.50	480 #1	610 #1	< 0.50	270	3.5	350	780	< 0.50	3800	950	1900	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.012
	20-Jul-2018		860	< 1.0	330 #1	240 #1	< 1.0	190	2.8	210	710	< 1.0	2500	720	1400	0.64	0.14	0.070	0.021	0.17	0.0084
	17-Jul-2019		920	< 1.0	350 #1	110	< 1.0	300	2.7	180	760	< 1.0	2500	1100	1800	0.23	0.053	0.083	0.025	0.078	0.0059
BIS-16-11-4	10-Aug-2016	**W-CAT-2**	820	< 0.50	190	1400 #1	< 0.50	540 #1	4.2	160	670	< 0.50	3500	1900	3100 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0045
	11-Aug-2017		760	< 0.50	96	1300 #1	< 0.50	620 #1	2.7	53	620	< 0.50	3200	2100	2900 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.020
	20-Jul-2018		900	< 1.0	420 #1	1200 #1	< 1.0	580 #1	3.7	120	740	< 1.0	4200	2000	3200 #3	< 0.44	< 0.10 #8	< 0.33	< 0.10 #8	< 0.14	0.015
	17-Jul-2019		910	< 1.0	640 #1	1200 #1	< 1.0	630 #1	3.9	120	750	< 1.0	4700	2200	4000 #5	0.28	0.064	0.035	0.011	0.075	0.0093
BIS-16-12-5	08-Aug-2016	**W-CAT-2**	780	< 0.50	540 #1	220 #1	< 0.50	340	4.9	140	640	< 0.50	3000	1300	2400 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.15 #1
	11-Aug-2017		1000	< 0.50	520 #1	< 1.0	< 0.50	330	3.4	150	820	< 0.50	3000	1200	1800 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.033
	17-Jul-2019		920	< 1.0	520 #1	38	< 1.0	330	3.5	160	750	< 1.0	3000	1200	1900	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.022 #2
Bear Island - Bear Island West Sumps (Sumps 1-5) - Surface Water																					
BI SW01	08-Aug-2016	**W-CAT-7**	---	---	320 #1	< 1.0	---	---	---	---	---	---	1600	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
(Duplicate)	08-Aug-2016		---	---	310 #1	< 1.0	---	---	---	---	---	---	1600	---	---	0.077	0.017	< 0.033	< 0.010	< 0.020	---
	11-Aug-2017		---	---	210 #1	1.4	---	---	---	---	---	---	1300	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	11-Aug-2017		---	---	210 #1	1.1	---	---	---	---	---	---	1300	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	18-Jul-2018		---	---	180 #2	< 1.0	---	---	---	---	---	---	1100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	17-Jul-2019		---	---	56	4.5	---	---	---	---	---	---	510	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---

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Table 4A

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
BI SW03	10-Aug-2016	**W-CAT-7**	---	---	260 #1	120	---	---	---	---	---	---	1500	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	11-Aug-2017		---	---	230 #1	130	---	---	---	---	---	---	1400	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	20-Jul-2018		---	---	170	68	---	---	---	---	---	---	980	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	20-Jul-2018		---	---	170	68	---	---	---	---	---	---	980	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	17-Jul-2019		---	---	180	80	---	---	---	---	---	---	1100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
BI SW04	10-Aug-2016	**W-CAT-7**	---	---	320 #1	31	---	---	---	---	---	---	1500	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	11-Aug-2017		---	---	320 #1	18	---	---	---	---	---	---	1500	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	20-Jul-2018		---	---	280 #1	18	---	---	---	---	---	---	1200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	17-Jul-2019		---	---	230 #1	14	---	---	---	---	---	---	1100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	17-Jul-2019		---	---	240 #1	13	---	---	---	---	---	---	1100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
BI SW05	10-Aug-2016	**W-CAT-7**	---	---	230 #1	44	---	---	---	---	---	---	1300	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	11-Aug-2017		---	---	300 #1	25	---	---	---	---	---	---	1600	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	20-Jul-2018		---	---	170 #2	35	---	---	---	---	---	---	1100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	17-Jul-2019		---	---	170	39	---	---	---	---	---	---	990	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
BI SW06	10-Aug-2016	**W-CAT-7**	---	---	41	56	---	---	---	---	---	---	530	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	---
	14-Aug-2017		---	---	660 #1	910 #1	---	---	---	---	---	---	4100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	20-Jul-2018		---	---	480 #1	840 #1	---	---	---	---	---	---	3000	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	17-Jul-2019		---	---	570 #1	760 #1	---	---	---	---	---	---	3300	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
BI-13-11	10-Aug-2016	**W-CAT-7**	210	< 0.50	36 #2	58	< 0.50	42	1.9	16	170	< 0.50	550	260	320	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0044
	14-Aug-2017		480	< 0.50	58	10	< 0.50	89	2.9	28	390	< 0.50	910	470	640 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.049
	18-Jul-2018		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0029
	17-Jul-2019		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0035
Bear Island - Former Bear Island Battery - Surficial Sediment																					
BI-14-13-3	09-Aug-2016	**W-CAT-2**	710	< 0.50	4.9	4.2	< 0.50	160	6.7	15	580	< 0.50	1000	550	580	< 0.044	< 0.010	0.037	0.011	< 0.020	0.0038
	11-Aug-2017		360	< 0.50	4.6	280 #1	< 0.50	170	6.8	7.6	300	< 0.50	1000	600	740	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0069
	15-Jul-2018		---	---	---	---	---	130	5.2	6.2	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2019		---	---	---	---	---	200	7.0	8.7	---	---	---	---	---	---	---	---	---	---	---
BI BT1 09-1-4	08-Aug-2016	**W-CAT-2**	---	---	20	1600 #1	---	610 #1	3.8	33	---	---	3400	---	---	0.19	0.042	0.039	0.012	0.054	---
	10-Aug-2017		---	---	12	1400 #1	---	660 #1	3.8	27	---	---	3400	---	---	0.075	0.017	0.062	0.019	0.036	---
	17-Jul-2018		---	---	---	---	---	540 #1	3.2	25	---	---	---	---	---	---	---	---	---	---	0.0080
	16-Jul-2019		---	---	---	---	---	650 #1	3.6	27	---	---	---	---	---	---	---	---	---	---	0.012

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Table 4A

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
BIBT1-15-1-3.5	08-Aug-2016	**W-CAT-2**	1600	< 0.50	23	22	< 0.50	350	2.2	51	1300	< 0.50	2200	1400	1800 #3	< 0.22	< 0.050 #8	< 0.16	< 0.050 #8	< 0.020	0.41 #1
	10-Aug-2017		1500	< 0.50	13	100	< 0.50	380	1.8	30	1300	< 0.50	2200	1400	1500 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.20 #1
	17-Jul-2018		1700	< 1.0	18	38	< 1.0	290	1.5	26	1400	< 1.0	2300	1100	1600 #3	< 0.44	< 0.10 #8	< 0.33	< 0.10 #8	< 0.14	0.12 #1
	16-Jul-2019		1700	< 1.0	15	< 2.0 #2	< 1.0	360	1.7	29	1400	< 1.0	2200	1400	1600 #5	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.67 #1
BIBT1-15-2-4	08-Aug-2016	**W-CAT-2**	1400	< 0.50	9.4	64	< 0.50	280	1.6	42	1200	< 0.50	2000	1100	1700 #3	< 0.22	< 0.050 #8	< 0.16	< 0.050 #8	< 0.020	0.85 #1
(Duplicate)	08-Aug-2016		1400	< 0.50	9.3	68	< 0.50	280	1.6	42	1200	< 0.50	2000	1100	1600 #3	< 0.22	< 0.050 #8	< 0.16	< 0.050 #8	< 0.020	0.85 #1
	10-Aug-2017		1400	< 0.50	8.8	310 #1	< 0.50	350	2.1	130	1200	< 0.50	2300	1200	1700 #3	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.046 #2
	17-Jul-2018		1300	< 1.0	13	230 #1	< 1.0	310	1.7	53	1100	< 1.0	2000	1000	1600 #3	< 0.44	< 0.10 #8	< 0.33	< 0.10 #8	< 0.14	0.071
(Duplicate)	17-Jul-2018		1300	< 1.0	13	230 #1	< 1.0	310	1.7	60	1100	< 1.0	2000	1100	1500 #3	< 0.44	< 0.10 #8	< 0.33	< 0.10 #8	< 0.14	0.079
	16-Jul-2019		1200	< 1.0	9.1	260 #1	< 1.0	350	1.8	46	1000	< 1.0	2000	1200	1600 #5	< 0.44	< 0.10 #8	< 0.33	< 0.10 #8	< 0.14	0.20 #1
(Duplicate)	16-Jul-2019		1200	< 1.0	8.8	280 #1	< 1.0	350	1.8	46	980	< 1.0	2000	1200	1500 #5	< 0.44	< 0.10 #8	< 0.33	< 0.10 #8	< 0.14	0.27 #1
BIBT1-15-4-4	11-Aug-2017	**W-CAT-2**	510	< 0.50	140	850 #1	< 0.50	300	3.8	23	420	< 0.50	2400	1000	2300	1.3	0.29	< 0.033	< 0.010	0.29	0.0070
	15-Jul-2018		520	< 1.0	5.4	150	< 1.0	170	2.5	19	420	< 1.0	1000	540	610	1.4	0.31	< 0.033	< 0.010	0.31	< 0.0020
	16-Jul-2019		580	< 1.0	21	180	< 1.0	110	5.9	43	480	< 1.0	1200	340	490	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0038
BIBT1-15-5-3	08-Aug-2016	**W-CAT-2**	460	< 0.50	9.3	140	< 0.50	140	2.6	15	370	< 0.50	950	490	670	0.28	0.064	< 0.033	< 0.010	0.064	< 0.0020
	11-Aug-2017		270	< 0.50	8.2	83	< 0.50	83	2.1	29	220	< 0.50	600	270	380	1.2	0.27	< 0.033	< 0.010	0.27	< 0.0020
BIBT1-15-7-4	08-Aug-2016	**W-CAT-2**	830	< 0.50	17	520 #1	< 0.50	380	3.3	8.8	680	< 0.50	2000	1200	1500 #3	0.12	0.026	0.042	0.013	0.039	< 0.0040 #2
	11-Aug-2017		480	< 0.50	11	210 #1	< 0.50	180	2.2	14	390	< 0.50	1100	570	920	0.43	0.097	< 0.033	< 0.010	0.097	0.0078
	15-Jul-2018		760	< 1.0	17	130	< 1.0	240	2.6	11	620	< 1.0	1300	790	940	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0081
	16-Jul-2019		580	< 1.0	12	23	< 1.0	160	2.5	11	470	< 1.0	900	530	550	0.050	0.011	< 0.033	< 0.010	< 0.014	0.021 #2
BIBT1-16-1-3	04-Oct-2016	**W-CAT-2**	690	< 0.50	15	360 #1	< 0.50	280	2.4	13	570	< 0.50	1600	930	1200	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0043
	11-Aug-2017		750	< 0.50	13	260 #1	< 0.50	180	3.1	54	610	< 0.50	1500	720	960	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0038
	15-Jul-2018		350	< 1.0	6.4	100	< 1.0	76	1.7	69	290	< 1.0	740	270	440	0.29	0.064	< 0.033	< 0.010	0.064	0.0040
	16-Jul-2019		640	< 1.0	11	240 #1	< 1.0	150	1.8	66	530	< 1.0	1300	510	730	0.060	0.014	< 0.033	< 0.010	< 0.014	0.0033
BIBT1-16-2-3	03-Oct-2016	**W-CAT-2**	910	< 0.50	14	300 #1	< 0.50	290	5.3	18	740	< 0.50	1700	1000	1300	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0057
	11-Aug-2017		660	< 0.50	17	410 #3	< 0.50	290	3.7	21	540	< 0.50	1600	990	1100	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0034
	15-Jul-2018		450	< 1.0	5.6	180	< 1.0	140	2.5	23	370	< 1.0	960	490	650 #2	0.069	0.016	< 0.033	< 0.010	0.016	0.039
(Duplicate)	15-Jul-2018		460	< 1.0	5.7	180	< 1.0	150	2.4	23	380	< 1.0	980	510	630 #2	0.057	0.013	< 0.033	< 0.010	< 0.014	0.042
	16-Jul-2019		510	< 1.0	9.1	180 #1	< 1.0	220	2.9	32	420	< 1.0	1100	750	830	0.64	0.14	< 0.033	< 0.010	0.14	0.0039

Table 4A

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
BIBT1-16-3-3	03-Oct-2016	**W-CAT-2**	400	< 0.50	13	150	< 0.50	150	3.0	7.4	330	< 0.50	880	480	580	0.053	0.012	< 0.033	< 0.010	< 0.020	0.0033
	11-Aug-2017		360	< 0.50	9.9	140	< 0.50	130	3.3	7.9	300	< 0.50	810	410	500	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	< 0.0020
	15-Jul-2018		160	< 1.0	5.1	53	< 1.0	52	1.7	6.2	130	< 1.0	370	180	270 [#3]	0.14	0.032	< 0.033	< 0.010	0.032	0.0024
	16-Jul-2019		410	< 1.0	9.9	85	< 1.0	87	3.2	17	330	< 1.0	760	300	420	0.086	0.020	< 0.033	< 0.010	0.020	0.0032
Bear Island - Bear Island East Sump (Sump 6) - Surficial Sediment																					
BI-08-2-3	07-Aug-2016	**W-CAT-2**	---	---	220 [#1]	1300 [#1]	---	590 [#1]	2.9	79	---	---	3600	---	---	0.15	0.033	< 0.033	< 0.010	0.033	---
	15-Aug-2017		---	---	500 [#1]	1100 [#1]	---	610 [#1]	3.7	200	---	---	4500	---	---	0.36	0.082 [#2]	0.17	0.053 [#2]	0.13	---
	18-Jul-2018		---	---	780 [#1]	1200 [#1]	---	---	---	---	---	---	5200	---	---	< 0.89	< 0.20 [#8]	< 0.66	**< 0.20** [#8]	< 0.28	---
	12-Jul-2019		---	---	870 [#1]	1300 [#1]	---	---	---	---	---	---	5600	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
BI-13-2-4.5	07-Aug-2016	**W-CAT-2**	750	< 0.50	16	270 [#1]	< 0.50	240	2.0	22	610	< 0.50	1600	940	1400 [#3]	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	< 0.0020
	15-Aug-2017		780	< 0.50	16	250 [#1]	< 0.50	240	2.0	20	640	< 0.50	1500	910	1200	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.020
	18-Jul-2018		---	---	1.8	30	---	---	---	---	---	---	240	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
BIWS-16-1-4	03-Oct-2016	**W-CAT-2**	740	< 0.50	250 [#1]	1300 [#1]	< 0.50	580 [#1]	6.1	33	610	< 0.50	3500	2100	3200	0.090	0.020	< 0.033	< 0.010	0.020	0.0090
	15-Aug-2017		640	< 0.50	180 [#2]	980 [#1]	< 0.50	470	4.0	28	530	< 0.50	2800	1700	2300	< 0.22	< 0.050 [#8]	< 0.16	< 0.050 [#8]	< 0.071	0.014
	18-Jul-2018		620	< 1.0	230 [#1]	990 [#1]	< 1.0	460	3.6	25	510	< 1.0	2900	1600	2400	< 0.44	< 0.10 [#8]	< 0.33	**< 0.10** [#8]	< 0.14	0.0078
	12-Jul-2019		380	< 1.0	190	580 [#1]	< 1.0	330	2.8	23	310	< 1.0	2100	1200	1600	0.23	0.052	< 0.033	< 0.010	0.052	0.0091
Bear Island - Bear Island East Sump (Sump 6) - Surface Water																					
BI SW-13-1	11-Aug-2016	**W-CAT-7**	200	< 0.50	1.7	18	< 0.50	50	0.80 [#7]	2.8	160	< 0.50	350	180	240	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	< 0.0020
	14-Aug-2017		290	< 0.50	3.9	16	< 0.50	71	1.1	5.5	240	< 0.50	490	250	310	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0083
	18-Jul-2018		170	< 1.0	4.1	23	< 1.0	44	1.2	3.9	140	< 1.0	320	160	200	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	< 0.0020
	12-Jul-2019		170	< 1.0	5.8	19	< 1.0	46	2.4	3.6	140	< 1.0	310	170	200	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0028
BIS6-17-SW01	27-Sep-2017	**W-CAT-7**	280	< 0.50	6.4	36	< 0.50	58	2.6	8.3	230	< 0.50	490	290	310	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	18-Jul-2018		---	---	3.7	37	---	---	---	---	---	---	400	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	12-Jul-2019		---	---	4.7	31	---	---	---	---	---	---	450	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
Bear Island - N-42X Well Site - Surficial Sediment																					
BIB 98-2-5	08-Aug-2016	**W-CAT-2**	---	---	---	---	---	630 [#1]	4.5	28	---	---	---	---	---	---	---	---	---	---	---
	10-Aug-2017		---	---	---	---	---	690 [#1]	4.6	29	---	---	---	---	---	---	---	---	---	---	---
	17-Jul-2018		---	---	55	1500 [#1]	---	610 [#1]	4.4	28	---	---	3300	---	---	2.8	0.64 [#8]	< 0.33	**< 0.10** [#8]	0.64	---
	17-Jul-2019		---	---	35	1500 [#1]	---	630 [#1]	4.7	29	---	---	3200	---	---	0.98	0.22	< 0.033	< 0.010	0.22	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
BIN42-10-1-5	08-Aug-2016	**W-CAT-2**	---	---	300 #1	1100 #1	---	540 #1	6.0	140	---	---	3700	---	---	0.11	0.025	0.033	0.010	0.035	< 0.0020
(Duplicate)	08-Aug-2016		---	---	300 #1	1100 #1	---	550 #1	6.0	140	---	---	3700	---	---	0.052	0.012	0.033	0.010	0.022	< 0.0020
	10-Aug-2017		---	---	290 #1	1000 #1	---	570 #1	4.8	160	---	---	3600	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.012
(Duplicate)	10-Aug-2017		---	---	290 #1	1000 #1	---	570 #1	4.8	160	---	---	3600	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.013
	17-Jul-2018		---	---	310 #1	960 #1	---	470	6.2	190	---	---	3700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	< 0.0020
(Duplicate)	17-Jul-2018		---	---	310 #1	950 #1	---	450	6.1	180	---	---	3700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.010
	17-Jul-2019		---	---	140	990 #1	---	520 #1	5.1	90	---	---	3000	---	---	0.18	0.040	< 0.033	< 0.010	0.040	0.0045
Bear Island - N-42X Well Site - Surface Water																					
BIN42-SW01	08-Aug-2016	**W-CAT-7**	170	< 0.50	3.3	6.5	< 0.50	40	0.95	3.3	140	< 0.50	300	160	200	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	< 0.0020
	10-Aug-2017		170	< 0.50	4.5	13	< 0.50	42	1.5	5.4	140	< 0.50	310	160	170	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0067
	17-Jul-2018		180	< 1.0	3.3	6.1	< 1.0	34	1.3	3.6	150	< 1.0	300	140	190	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0027
	17-Jul-2019		180	< 1.0	2.2	2.3	< 1.0	37	1.2	2.9	150	< 1.0	290	160	180	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0036
Bear Island - Former Bear Island Flare Pit - Surficial Sediment																					
BIFP-16-1-3	04-Oct-2016	**W-CAT-2**	320	< 0.50	6.6	210 #1	< 0.50	140	3.0	12	260	< 0.50	850	450	570	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0057
	10-Aug-2017		300	< 0.50	5.5	99	< 0.50	55	0.90	78	250	< 0.50	650	200	440 #3	0.14	0.031	< 0.033	< 0.010	0.031	0.0036
	20-Jul-2018		670	< 1.0	6.3	160	< 1.0	51	2.7	230	550	< 1.0	1300	180	850 #3	2.2	0.50	0.050	0.015	0.51	0.0056
	12-Jul-2019		710	< 1.0	6.0	89	< 1.0	56	2.0	190	580	< 1.0	1200	190	790 #5	0.62	0.14	< 0.033	< 0.010	0.14	0.0046
BIFP-16-2-3	04-Oct-2016	**W-CAT-2**	220	< 0.50	1.6	76	< 0.50	67	3.2	13	180	< 0.50	500	220	310	< 0.044	< 0.010	< 0.033	< 0.010	< 0.020	0.0033
	20-Jul-2018		300	< 1.0	6.1	82	< 1.0	58	1.5	58	240	< 1.0	610	210	410 #3	1.2	0.27	< 0.033	< 0.010	0.27	< 0.0020
	12-Jul-2019		770	< 1.0	4.7	170	< 1.0	90	4.1	220	630	< 1.0	1400	310	950 #5	2.0	0.46	< 0.033	< 0.010	0.46	0.0046
BIFP-16-3-3	04-Oct-2016	**W-CAT-2**	730	< 0.50	5.0	63	< 0.50	200	4.4	7.2	600	< 0.50	1100	650	730	0.074	0.017	< 0.033	< 0.010	< 0.020	0.013
	10-Aug-2017		310	< 0.50	5.3	81	< 0.50	59	1.4	68	260	< 0.50	620	210	340 #3	0.082	0.018	< 0.033	< 0.010	0.018	0.0061
	20-Jul-2018		360	< 1.0	5.5	86	< 1.0	71	2.3	58	300	< 1.0	700	250	470 #3	0.42	0.095	< 0.033	< 0.010	0.095	0.0023
	12-Jul-2019		450	< 1.0	8.7	90	< 1.0	79	3.6	91	370	< 1.0	820	270	570 #5	1.0	0.23	< 0.033	< 0.010	0.23	0.0034
BIFP-17-1-3	15-Oct-2017	**W-CAT-2**	670	< 0.50	5.4	30	< 0.50	180	1.6	7.8	550	< 0.50	1000	570	600	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	20-Jul-2018		660	< 1.0	4.9	17	< 1.0	160	1.5	11	540	< 1.0	970	500	580	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0054
	12-Jul-2019		540	< 1.0	4.3	23	< 1.0	150	1.2	9.0	450	< 1.0	820	460	580	0.068	0.015	< 0.033	< 0.010	0.015	0.0061
Bear Island - Former Bear Island Flare Pit - Surface Water																					
BI SW09	12-Jul-2019	**W-CAT-7**	210	< 1.0	3.8	4.3	< 1.0	48	2.1	3.8	170	< 1.0	420	180	210	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
BIFP-16-SW1	04-Oct-2016	**W-CAT-7**	200	< 0.50	4.7	14	< 0.50	47	1.5	3.3 #9	160	< 0.50	350	180	200	0.045	0.010	< 0.033	< 0.010	< 0.020	< 0.0020
	10-Aug-2017		210	< 0.50	4.7	16	< 0.50	54	1.7	5.9	170	< 0.50	360	190	200	0.12	0.027	< 0.033	< 0.010	0.027	0.0046
	27-Sep-2017		180	< 0.50	4.5	12	< 0.50	47	2.0	5.4	150	< 0.50	310	180	200	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	
	20-Jul-2018		200	< 1.0	3.1	1.9	< 1.0	44	1.4	3.7	160	< 1.0	320	170	190	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0046
	12-Jul-2019		200	< 1.0	2.9	< 1.0	< 1.0	41	1.3	3.1	160	< 1.0	310	170	200	0.051	0.012	< 0.033	< 0.010	< 0.014	0.0054
BIFP-17-SW2	27-Sep-2017	**W-CAT-7**	190	< 0.50	4.7	12	< 0.50	50	2.1	5.5	160	< 0.50	330	180	180	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
	20-Jul-2018		280	< 1.0	3.3	< 1.0	< 1.0	62	1.5	4.6	230	< 1.0	440	220	280	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	**0.019** #8
	12-Jul-2019		210	< 1.0	4.1	3.7	< 1.0	50	2.1	3.8	170	< 1.0	350	180	210	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0054
Goose Island - Surficial Sediment																					
GIP9 09-1-4	07-Aug-2016	**W-CAT-2**	---	---	44	460 #1	---	370	4.8	33	---	---	2200	---	---	0.75	0.17	0.035	0.011	0.18	0.0074
	20-Aug-2017		---	---	24	500 #1	---	---	---	---	---	---	2000	---	---	0.69	0.16	0.035	0.011	0.17	0.0066
Goose Island - Surface Water																					
GI SW05	20-Aug-2017	**W-CAT-8**	70	< 0.50	< 1.0	42	< 0.50	27	0.69	1.3	57	< 0.50	200	99	130	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0024
(Duplicate)	20-Aug-2017		69	< 0.50	< 1.0	42	< 0.50	27	0.67	1.3	56	< 0.50	200	99	120	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	< 0.0020
	30-Aug-2019		69	2.0	8.9	50	< 1.0	22	1.5	8.5	60	1.7	230	89	140	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.0039
Relative Percent Difference (RPD) Report																					
CPF 09-6-19	19-Jun-2019	**W-CAT-3**	---	---	---	---	---	82	1.8	170	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Jun-2019		---	---	---	---	---	82	1.8	170	---	---	---	---	---	---	---	---	---	---	---
RPD(%)			---	---	---	---	---	0.0%	0.0%	0.0%	---	---	---	---	---	---	---	---	---	---	---
C27-16-2-3	11-Jul-2019	**W-CAT-1**	1200	< 1.0	4.4	430 #1	< 1.0	230	5.1	120	940	< 1.0	2200	1100	1600	23	5.3	< 0.033	< 0.010	5.3	0.011
(Duplicate)	11-Jul-2019		1100	< 1.0	4.3	440 #1	< 1.0	230	5.1	120	940	< 1.0	2200	1100	1600	23	5.3	< 0.033	< 0.010	5.3	0.0098
RPD(%)			8.7%	---	2.3%	2.3%	---	0.0%	0.0%	0.0%	0.0%	---	0.0%	0.0%	0.0%	0.0%	0.0%	---	---	0.0%	11.5%
E27 09-2-16	11-Jul-2019		---	---	210 #1	52	---	---	---	---	---	---	3100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	11-Jul-2019		---	---	210 #1	74	---	---	---	---	---	---	3200	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10** #2	< 0.14	---
RPD(%)			---	---	0.0%	34.9%	---	---	---	---	---	---	3.2%	---	---	---	---	---	---	---	---
ARB-13-5-4.5	11-Jul-2019	**W-CAT-1**	---	---	9.5	200	---	120	2.2	41	---	---	960	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	11-Jul-2019		---	---	9.1	190	---	130	2.3	41	---	---	980	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RPD(%)			---	---	4.3%	5.1%	---	8.0%	4.4%	0.0%	---	---	2.1%	---	---	---	---	---	---	---	---
B30X-12-1-4	13-Jul-2019	**W-CAT-1**	---	---	---	---	---	80	< 3.0	440	---	---	---	---	---	---	---	---	---	---	**0.046**
(Duplicate)	13-Jul-2019		---	---	---	---	---	80	< 3.0	440	---	---	---	---	---	---	---	---	---	---	**0.044**
RPD(%)			---	---	---	---	---	0.0%	---	0.0%	---	---	---	---	---	---	---	---	---	---	4.4%

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
BT3 99-23-13	13-Jul-2019	**W-CAT-3**	---	---	2400 #1	140	---	350	11	1700	---	---	9900	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	13-Jul-2019		---	---	2300 #1	160	---	350	11	1700	---	---	9700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RPD(%)			---	---	4.3%	13.3%	---	0.0%	0.0%	0.0%	---	---	2.0%	---	---	---	---	---	---	---	---
E33-18-1-2.5	11-Jul-2019	**W-CAT-1**	---	---	160	1600 #1	---	520	3.5	200	---	---	3500	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.010
(Duplicate)	11-Jul-2019		---	---	160	1700 #1	---	520	3.5	200	---	---	3600	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.012
RPD(%)			---	---	0.0%	6.1%	---	0.0%	0.0%	0.0%	---	---	2.8%	---	---	---	---	---	---	---	18.2%
C36-10-2-3	15-Jul-2019	**W-CAT-1**	---	---	---	---	---	250	2.8	32	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	15-Jul-2019		---	---	---	---	---	250	2.8	32	---	---	---	---	---	---	---	---	---	---	---
RPD(%)			---	---	---	---	---	0.0%	0.0%	0.0%	---	---	---	---	---	---	---	---	---	---	---
B38-10-2-5	14-Jul-2019	**W-CAT-5**	---	---	---	---	---	160	4.8	41	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	14-Jul-2019		---	---	---	---	---	160	4.8	41	---	---	---	---	---	---	---	---	---	---	---
RPD(%)			---	---	---	---	---	0.0%	0.0%	0.0%	---	---	---	---	---	---	---	---	---	---	---
RCF 98-3-4	12-Jul-2019	**W-CAT-1**	---	---	38	320 #2	---	290	1.0	56	---	---	---	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	12-Jul-2019		---	---	36	350 #2	---	290	0.95	56	---	---	---	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RPD(%)			---	---	**5.4%**	**9.0%**	---	**0.0%**	**5.1%**	**0.0%**	---	---	---	---	---	---	---	---	---	---	---
MTF 98-4-5	19-Jun-2019	**W-CAT-1**	---	---	130	< 1.0	---	---	---	---	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	19-Jun-2019		---	---	130	< 1.0	---	---	---	---	---	---	1700	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RPD(%)			---	---	0.0%	---	---	---	---	---	---	---	0.0%	---	---	---	---	---	---	---	---
NWR 09-2-26	15-Jul-2019	**W-CAT-3**	---	---	1800 #1	6.0	---	140	1.7	400	---	---	9400	---	---	< 0.22	< 0.050 #2	< 0.16	< 0.050 #2	< 0.071	---
(Duplicate)	15-Jul-2019		---	---	1700 #1	56	---	140	1.7	400	---	---	9000	---	---	< 0.22	< 0.050 #2	< 0.16	< 0.050 #2	< 0.071	---
RPD(%)			---	---	5.7%	**161.3%**	---	0.0%	0.0%	0.0%	---	---	4.3%	---	---	---	---	---	---	---	---
NWR 98-13-21	15-Jul-2019	**W-CAT-3**	---	---	1300 #1	< 1.0	---	120	5.5	440	---	---	7500	---	---	< 0.22	< 0.050 #2	< 0.16	< 0.050 #2	< 0.071	---
(Duplicate)	15-Jul-2019		---	---	1300 #1	< 1.0	---	120	5.4	440	---	---	7300	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RPD(%)			---	---	0.0%	---	---	0.0%	1.8%	0.0%	---	---	2.7%	---	---	---	---	---	---	---	---
P700	03-Sep-2019	**W-CAT-3**	1900	< 1.0	140	< 1.0	< 1.0	25	3.5	750 #1	1600	< 1.0	3000	91	1900	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	03-Sep-2019		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RPD(%)			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-RW-13	03-Oct-2019	**W-CAT-4**	910	< 1.0	15	98	< 1.0	230	5.1	24	740	< 1.0	1400	770	980 #5	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	03-Oct-2019		890	< 1.0	16	98	< 1.0	230	5.1	23	730	< 1.0	1400	770	940 #5	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RPD(%)			2.2%	---	6.5%	0.0%	---	0.0%	0.0%	4.3%	1.4%	---	0.0%	0.0%	4.2%	---	---	---	---	---	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
MLS 09-1-3	18-Jul-2019	**W-CAT-1**	---	---	1600 #1	1000 #1	---	600 #1	23	490	---	---	7000	---	---	0.048	0.011	< 0.033	< 0.010	< 0.014	---
(Duplicate)	18-Jul-2019		---	---	1500 #1	1000 #1	---	610 #1	23	480	---	---	7000	---	---	0.047	0.011	< 0.033	< 0.010	< 0.014	---
RPD(%)			---	---	6.5%	0.0%	---	1.7%	0.0%	2.1%	---	---	0.0%	---	---	2.1%	0.0%	---	---	---	---
MLS-10-1-7	15-Jul-2019	**W-CAT-3**	---	---	610 #1	< 1.0	---	---	---	---	---	---	5200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	15-Jul-2019		---	---	620 #1	< 1.0	---	---	---	---	---	---	5200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RPD(%)			---	---	1.6%	---	---	---	---	---	---	---	0.0%	---	---	---	---	---	---	---	---
MLS 08-3-4	13-Jul-2019	**W-CAT-3**	---	---	300 #1	1800 #1	---	250	9.3	830 #1	---	---	5200	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	13-Jul-2019		---	---	310 #1	1700 #1	---	250	9.2	820 #1	---	---	5200	---	---	0.049	0.011	< 0.033	< 0.010	< 0.014	---
RPD(%)			---	---	3.3%	5.7%	---	0.0%	1.1%	1.2%	---	---	0.0%	---	---	---	---	---	---	---	---
MLS 02-8-8	14-Jul-2019	**W-CAT-3**	---	---	1900 #1	2.5	---	---	---	---	---	---	8600	---	---	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	---
(Duplicate)	14-Jul-2019		---	---	1900 #1	4.1	---	---	---	---	---	---	8600	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RPD(%)			---	---	0.0%	48.5%	---	---	---	---	---	---	0.0%	---	---	---	---	---	---	---	---
BI SW04	17-Jul-2019	**W-CAT-7**	---	---	230 #1	14	---	---	---	---	---	---	1100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
(Duplicate)	17-Jul-2019		---	---	240 #1	13	---	---	---	---	---	---	1100	---	---	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	---
RPD(%)			---	---	4.3%	7.4%	---	---	---	---	---	---	0.0%	---	---	---	---	---	---	---	---

Groundwater and Surface Water Analytical Results: Indicator Parameters and Phenols

PROJECT No.: 407011-00808-19100

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations			General					Inorganic Nitrogen Compounds					Phenols
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Phenols (mg/L)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	0.004
W-CAT-1			1000	0.5	18	728	0.5	322	5.4	160	---	1.0	2355	1253	1640	---	5.4	---	0.03	---	0.013
W-CAT-2			987	0.5	18	970	0.5	480	4.5	125	---	0.5	2600	1600	2295	---	2.5	---	0.04	---	0.014
W-CAT-3			1570	26	314	98	0.5	147	6.4	747	---	21	2954	350	1956	---	1.8	---	0.06	---	0.019
W-CAT-4			1220	62	280	990	1.0	350	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	0.020
W-CAT-5			879	1.0	11	204	1.0	270	7.0	49	---	1.0	1392	741	948	---	0.2	---	0.06	---	0.063
W-CAT-6			---	---	49	180	---	138	---	---	---	---	865	---	---	---	---	---	---	---	0.0099
W-CAT-7			---	---	35	422	---	197	---	---	---	---	1520	---	---	---	---	---	---	---	0.011
W-CAT-8			---	---	5	72	---	79	---	---	---	---	514	---	---	---	---	---	---	---	0.007
BIBT1-15-2-4	16-Jul-2019	**W-CAT-2**	1200	< 1.0	9.1	260 #1	< 1.0	350	1.8	46	1000	< 1.0	2000	1200	1600 #5	< 0.44	< 0.10 #8	< 0.33	**< 0.10 #8**	< 0.14	**0.20 #1**
(Duplicate)	16-Jul-2019		1200	< 1.0	8.8	280 #1	< 1.0	350	1.8	46	980	< 1.0	2000	1200	1500 #5	< 0.44	< 0.10 #8	< 0.33	**< 0.10 #8**	< 0.14	**0.27 #1**
RPD(%)			0.0%	---	3.4%	7.4%	---	0.0%	0.0%	0.0%	2.0%	---	0.0%	0.0%	6.5%	---	---	---	---	---	29.8%

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1).

6. Superscript #1 - Detection limits raised due to dilution to bring analyte within the calibrated range.
7. Superscript #2 - Detection limits raised due to matrix interference.
8. Superscript #3 - Detection limit raised based on sample volume used for analysis.
9. Superscript #4 - Sample was originally processed within hold time. Data quality required investigation. Re-analysis was completed past recommended hold time.
10. Superscript #5 - Detection limit raised based on sample volume used and sample matrix
11. Superscript #6 - Matrix Spike exceeds acceptance limits due to matrix interference. Reanalysis yields similar results.
12. Superscript #7 - Dissolved greater than total. Results are within limits of uncertainty(MU).
13. Superscript #8 - Detection limits raised due to sample matrix.
14. Superscript #9 - Dissolved greater than total. Results within acceptable limits of precision.
15. Superscript #10 - Detection limits raised due to matrix interference.Sample was originally processed within hold time. Data quality required investigation. Re-analysis was completed past recommended hold time.
21. Background 95th Percentile Statistical Category:
    W-CAT-1: Mainland Locations - Surficial Sediments - 95th Percentile Background
    W-CAT-2: Bear, Goose, and Frenchy's Islands - Surficial Sediments - 95th Percentile Background
    W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background
    W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background
    W-CAT-5: Surficial Sediments - Natural Gas & Non-Saline Water Seepage - 95th Percentile Background
    W-CAT-6: Mainland Surface Water - 95th Percentile Background
    W-CAT-7: Bear Island Surface Water - 95th Percentile Background
    W-CAT-8: Goose Island Surface Water - 95th Percentile Background

Bold 22. Relative percent difference exceeds acceptable alert limit of 50%.

Advisian
Worley Group

Table 4B

Porewater Analytical Results: Indicator Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Anions					Cations						General					Inorganic Nitrogen Compounds					Ion Balance
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Ion Balance % Difference (%)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	0.3	---	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	---
W-CAT-4			1220	62	280	990	1	350	25	---	3	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	---
Refinery Bank Porewater - 2018 Locations																								
PW-18-1	18-Jul-2018	**W-CAT-4**	570	< 1.0	22	1200 #1	< 1.0	470	0.23	83	2.5	5.7	64	460	< 1.0	2500	1500	2300	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.75
(Duplicate)	18-Jul-2018		570	< 1.0	22	1200 #1	< 1.0	460	0.24	81	2.4	5.5	62	460	< 1.0	2500	1500	2300	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	1.9
PW-18-2	18-Jul-2018	**W-CAT-4**	650	< 1.0	130	400 #1	< 1.0	150	0.072	26	0.057	3.9	260	530	< 1.0	2100	480	1400	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	4.1
PW-18-3	18-Jul-2018	**W-CAT-4**	580	< 1.0	180	190	< 1.0	150	0.18	30	0.96	3.9	150	480	< 1.0	1700	500	1100	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	4.7
PW-18-4	18-Jul-2018	**W-CAT-4**	780	< 1.0	130	1.3	< 1.0	28	0.48	5.8	0.18	3.0	290	640	< 1.0	1500	94	1000 #3	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	6.0
PW-18-5	18-Jul-2018	**W-CAT-4**	720	< 1.0	36 #2	36	< 1.0	120	7.6	27	0.40	5.0	110	590	< 1.0	1200	400	750	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	1.9
PW-18-6	18-Jul-2018	**W-CAT-4**	400	< 1.0	8.0	230 #1	< 1.0	180	< 0.060	21	0.051	3.1	12	330	< 1.0	1000	540	680	< 0.44	< 0.10 #2	< 0.33	**< 0.10 #2**	< 0.14	0.77
PW-18-7	19-Jul-2018	**W-CAT-4**	170	< 1.0	10	51	< 1.0	46	< 0.060	11	0.057	2.1	19	140	< 1.0	400	160	260	0.20	0.044	< 0.033	< 0.010	0.044	1.5
PW-18-8	19-Jul-2018	**W-CAT-4**	190	< 1.0	10	38	< 1.0	43	< 0.060	11	0.18	1.9	18	150	< 1.0	400	150	260	0.20	0.044	< 0.033	< 0.010	0.044	2.8
PW-18-9	19-Jul-2018	**W-CAT-4**	510	< 1.0	88	29	< 1.0	81	0.88	20	1.6	4.1	120	420	< 1.0	1100	280	660	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	2.5
PW-18-10	19-Jul-2018	**W-CAT-4**	1100	< 1.0	130	3.2	< 1.0	88	21	24	0.47	3.5	290	870	< 1.0	1800	320	1100	< 2.2	< 0.50 #2	< 1.6	**< 0.50 #2**	< 0.71	2.8
PW-18-11	19-Jul-2018	**W-CAT-4**	820	< 1.0	250 #1	410 #1	< 1.0	260	0.26	45	1.4	5.4	280	670	< 1.0	2600	840	1800	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.54
PW-18-12	19-Jul-2018	**W-CAT-4**	160	< 1.0	11	34	< 1.0	37	0.87	11	0.18	1.4	21	130	< 1.0	340	140	220	0.19	0.042	< 0.033	< 0.010	0.042	2.3
Refinery Bank Porewater - 2019 Locations																								
PW-19-1	25-Sep-2019	**W-CAT-4**	350	< 1.0	52	< 0.50	< 1.0	42	12	12	0.067	3.9	89	280	< 1.0	660	150	430	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	2.1
PW-19-2	25-Sep-2019	**W-CAT-4**	880	< 1.0	79	< 1.0	< 1.0	110	23	31	0.35	5.6	200	720	< 1.0	1500	420	920	0.093	0.021	< 0.033	< 0.010	0.021	3.5
PW-19-3	25-Sep-2019	**W-CAT-4**	340	< 1.0	51	< 0.50	< 1.0	47	9.9	18	0.082	3.0	59	280	< 1.0	640	190	400	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	1.2
PW-19-4	25-Sep-2019	**W-CAT-4**	290	< 1.0	15	< 0.50	< 1.0	57	7.5	16	0.24	2.6	17	240	< 1.0	480	210	280	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.38
PW-19-5	25-Sep-2019	**W-CAT-4**	260	< 1.0	14	< 0.50	< 1.0	53	8.9	15	0.28	2.1	8.9	210	< 1.0	430	200	240	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.57
PW-19-6	25-Sep-2019	**W-CAT-4**	290	< 1.0	15	< 0.50	< 1.0	58	8.8	15	0.33	1.8	22	240	< 1.0	490	210	280	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	2.3
PW-19-7	25-Sep-2019	**W-CAT-4**	280	< 1.0	13	< 0.50	< 1.0	66	10	12	0.45	1.7	12	230	< 1.0	460	220	270	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	2.1

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Table 4B

Porewater Analytical Results: Indicator Parameters

PROJECT No.: 417011-00096			Anions					Cations						General					Inorganic Nitrogen Compounds					Ion Balance
Sampling Location	Date (dd-mmm-yyyy)	Background Category	Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	Total Dissolved Solids (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Ion Balance % Difference (%)
CCME CEQG Freshwater Aquatic Life			---	---	120	---	---	---	0.3	---	---	---	---	---	---	---	---	---	---	2.9	---	0.06	---	---
W-CAT-4			1220	62	280	990	1	350	25	---	3	7.5	440	---	51	2780	1200	2015	---	0.2	---	0.06	---	---
PW-19-8	25-Sep-2019	**W-CAT-4**	330	< 1.0	14	< 0.50	< 1.0	77	10	15	0.43	2.0	14	270	< 1.0	540	250	320	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	1.7
(Duplicate)	25-Sep-2019		330	< 1.0	13	< 0.50	< 1.0	76	10	15	0.43	2.1	14	270	< 1.0	540	250	320	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	2.4
PW-19-9	25-Sep-2019	**W-CAT-4**	320	< 1.0	14	9.5	< 1.0	82	2.5	14	0.48	1.7	9.2	260	< 1.0	540	260	300	0.11	0.025	< 0.033	< 0.010	0.025	0.13
PW-19-11	26-Sep-2019	**W-CAT-4**	370	< 1.0	18	120	< 1.0	100	0.90	18	0.72	3.2	32	300	< 1.0	780	340	530	0.12	0.027	< 0.033	< 0.010	0.027	4.0
PW-19-13	26-Sep-2019	**W-CAT-4**	450	< 1.0	21	< 0.50	< 1.0	43	8.2	12	0.34	3.0	110	370	< 1.0	740	160	490	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	1.2
PW-19-14	26-Sep-2019	**W-CAT-4**	530	< 1.0	20	< 0.50	< 1.0	71	7.4	14	0.40	2.8	110	430	< 1.0	830	230	540	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	2.0
PW-19-15	26-Sep-2019	**W-CAT-4**	530	< 1.0	23	< 1.0	< 1.0	64	9.6	17	0.30	3.5	96	430	< 1.0	830	230	520	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.56
(Duplicate)	26-Sep-2019		530	< 1.0	23	< 1.0	< 1.0	63	9.7	17	0.29	3.6	100	430	< 1.0	830	230	530	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.093
PW-19-16	26-Sep-2019	**W-CAT-4**	330	< 1.0	25	< 0.50	< 1.0	41	**28**	12	0.13	2.5	67	270	< 1.0	570	150	420	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	7.7
PW-19-17	26-Sep-2019	**W-CAT-4**	410	< 1.0	26	< 0.50	< 1.0	52	11	22	0.087	3.2	64	340	< 1.0	700	220	420	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	1.6
Relative Percent Difference (RPD) Report																								
PW-19-8	25-Sep-2019	**W-CAT-4**	330	< 1.0	14	< 0.50	< 1.0	77	10	15	0.43	2.0	14	270	< 1.0	540	250	320	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	1.7
(Duplicate)	25-Sep-2019		330	< 1.0	13	< 0.50	< 1.0	76	10	15	0.43	2.1	14	270	< 1.0	540	250	320	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	2.4
RPD(%)			**0.0%**	---	**7.4%**	---	---	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**4.9%**	**0.0%**	**0.0%**	---	**0.0%**	**0.0%**	**0.0%**	---	---	---	---	---	**34.1%**
PW-19-15	26-Sep-2019	**W-CAT-4**	530	< 1.0	23	< 1.0	< 1.0	64	9.6	17	0.30	3.5	96	430	< 1.0	830	230	520	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.56
(Duplicate)	26-Sep-2019		530	< 1.0	23	< 1.0	< 1.0	63	9.7	17	0.29	3.6	100	430	< 1.0	830	230	530	< 0.044	< 0.010	< 0.033	< 0.010	< 0.014	0.093
RPD(%)			**0.0%**	---	**0.0%**	---	---	**1.6%**	**1.0%**	**0.0%**	**3.4%**	**2.8%**	**4.1%**	**0.0%**	---	**0.0%**	**0.0%**	**1.9%**	---	---	---	---	---	**143.0%**

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 updated Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 updated Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background
7. Superscript $^{\#1}$ - Detection limits raised due to dilution to bring analyte within the calibrated range.
8. Superscript $^{\#2}$ - Detection limits raised due to matrix interference.
9. Superscript $^{\#3}$ - Detection limit raised based on sample volume used for analysis.
10. Background 95th Percentile Statistical Category:
W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background

Bold 11. Relative percent difference exceeds acceptable alert limit of 50%.

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Table 5A

Groundwater and Surface Water Analytical Results: Petroleum Hydrocarbons Parameters

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**
W-CAT-2			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-7			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-8			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
Mainland Central - Biocells / B-33X Well Site - Surficial Sediment								
ARB-10-2-3	04-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	12-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	11-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	11-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
ARB-12-1-4	04-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	12-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	11-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	11-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
ARB-12-4-2	04-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	12-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
ARB-13-1-4.5	04-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	12-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
ARB-13-3-4.5	04-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	12-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	12-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	11-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
ARB-13-5-4.5	04-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
(Duplicate)	04-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	12-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
(Duplicate)	12-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
ARB-16-1-3	12-Aug-2017	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	12-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	11-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
ARB-17-1-3	15-Oct-2017	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	11-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	13-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
ARB-17-2-3	15-Oct-2017	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	12-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	11-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
ARB-17-3-5	15-Oct-2017	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	0.11	< 0.10
	12-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	11-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	0.11	< 0.10
BC2-15-1-3	04-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	12-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	11-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	12-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BC2-15-2-4	04-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	12-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	11-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	12-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BC2-15-3-4	04-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	12-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	11-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	12-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BC2-15-4-3	04-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	12-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	11-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	11-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
OPB 09-2-4	11-Jul-2018	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	11-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
OPB 09-3-4	11-Jul-2018	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	11-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
Mainland Central - Biocells / B-33X Well Site - Surface Water								
ARB-17-SW01	12-Aug-2017	**W-CAT-6**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	12-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	11-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
ARB-17-SW02	12-Aug-2017	**W-CAT-6**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	12-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	13-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
Mainland Central - B-30X Well Site - Surficial Sediment								
B30X-12-1-4	12-Aug-2016	**W-CAT-1**	1.2 #2	0.024	0.0063	0.77	7.7	1.5
(Duplicate)	12-Aug-2016		1.2 #2	0.026	0.0083	0.69	9.1	1.4
	13-Aug-2017		1.6 #2	0.0099	0.0042	0.62	4.7	13
(Duplicate)	13-Aug-2017		1.7 #2	0.0097	0.0034	0.62	4.4	13
	11-Jul-2018		1.1 #2	0.0094	0.0051	0.13	3.8	1.3
	13-Jul-2019		1.3 #2	0.0026	0.0045	0.057	2.9	0.93
(Duplicate)	13-Jul-2019		1.5 #2	0.0032	0.0057	0.067	2.6	0.94
B30X-12-2-4	04-Aug-2016	**W-CAT-1**	1.1 #2	0.028	0.023	0.4	1.1	2.6
	13-Aug-2017		2.2 #2	0.027	0.014	0.95	2.8	1.6
	11-Jul-2018		4.0 #2	0.081	0.056	0.57	5.5	40
	13-Jul-2019		2.3 #2	0.012	0.0088	0.87	1.9	2.0
B30-13-1-5.4	04-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.20
	13-Aug-2017		< 0.00040	< 0.00040	< 0.00040	0.0014	< 0.10	< 0.10
	12-Jul-2018		0.00049	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	13-Jul-2019		0.0031	< 0.00040	< 0.00040	0.0059	0.20	0.40
B30-13-2-4.5	12-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	13-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
B30-13-3-4.5	04-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	13-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
B30-13-4-3.9	18-Aug-2017	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
B30-17-1-5	15-Oct-2017	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	11-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	13-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
B30-17-2-3	12-Jul-2018	**W-CAT-1**	< 0.00040	0.00056	< 0.00040	< 0.00089	< 0.10	1.4
	15-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.16
Mainland Central - B-30X Well Site - Bedrock								
B30-19-01-5	02-Sep-2019	**W-CAT-3**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.29
Mainland Central - C-30X Well Site / Bosworth Creek and Delta - Surficial Sediment								
C30-10-1-5	10-Aug-2016	**W-CAT-3**	0.011 #6	**< 0.0040 #6**	< 0.0040 #6	< 0.0080 #6	< 1 #6	1.3
	12-Aug-2017		0.091	< 0.00040	0.0044	0.030	0.14	4.3
	12-Jul-2018		0.067	< 0.00040	0.0018	0.013	< 0.10	11
	13-Jul-2019		0.037	< 0.00040	0.0036	0.013	0.26	7.9
BOS-DP-13-1-1.4	11-Aug-2016	**W-CAT-3**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	13-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BOS-DP-13-2-1.35	06-Aug-2016	**W-CAT-3**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	18-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
BOS-DP-13-3-2	06-Aug-2016	**W-CAT-3**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.12 #5
	18-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	21-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	13-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BOS-DP-13-4-3	06-Aug-2016	**W-CAT-3**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	57
(Duplicate)	06-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	14
	18-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	1.6
	21-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	0.11	2.2
	13-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	0.16	15

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Table 5A

Groundwater and Surface Water Analytical Results: Petroleum Hydrocarbons Parameters

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**
W-CAT-2			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-7			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-8			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
Mainland Central - C-30X Well Site / Bosworth Creek and Delta - Surface Water								
BOS SW01	11-Aug-2016	**W-CAT-6**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	18-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
(Duplicate)	18-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	21-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	13-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
Mainland Central - Former Battery #3 - Surficial Sediment								
BT3 02-36-4	17-Jul-2018	**W-CAT-3**	0.30	< 0.00040	0.0019	0.0046	0.31	0.24
	14-Jul-2019		1.2 #2	< 0.00040	0.015	0.0057	1.5	0.90
BT3-18-1-5.5	12-Jul-2018	**W-CAT-3**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	14-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	---
Mainland Central - F-31X Well Site - Surficial Sediment								
F31 97-3-5	16-Jul-2018	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	---
F31 98-1-4	06-Aug-2016	**W-CAT-1**	0.0026	< 0.00040	< 0.00040	< 0.00080	< 0.1	1.1
	17-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080 #3	< 0.49	---
Mainland Central - E-33X Well Site - Surficial Sediment								
E33-18-1-2.5	22-Jul-2018	**W-CAT-1**	0.0054	< 0.00040	< 0.00040	< 0.00089	0.11	2.1
(Duplicate)	22-Jul-2018		0.0055	< 0.00040	< 0.00040	< 0.00089	< 0.10	2.5
	18-Jul-2019		0.0034	< 0.00040	< 0.00040	< 0.00089	< 0.10	14
Mainland Central - E-33X Well Site - Bedrock								
E33-19-01-4	02-Sep-2019	**W-CAT-3**	0.077	< 0.00040	< 0.00040	0.0011	0.12	1.7
E33-19-02-5	02-Sep-2019	**W-CAT-3**	0.0035	< 0.00040	< 0.00040	< 0.00089	0.11	1.4
Mainland East - C-36X Well Site - Surficial Sediment								
C36-10-1-3	05-Aug-2016	**W-CAT-1**	0.82	0.0061	0.021	0.16	0.36	2.4
	12-Aug-2017		0.83	0.0057	0.027	0.24	0.45	2.3
	12-Jul-2018		1.4 #2	0.018	0.068	0.28	0.46	2.0
	15-Jul-2019		0.69	0.024	0.049	0.21	0.78	5.7
Mainland East - C-36X Well Site - Surface Water								
C36 SW01	05-Aug-2016	**W-CAT-6**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	12-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
Mainland East - B-38X Well Site - Surficial Sediment								
B38 03-38-5	04-Aug-2016	**W-CAT-1**	8.4 #2	0.00049	0.0022	0.017	< 0.1	0.34
	13-Aug-2017		9.9 #2	0.00045	0.0019	0.011 #3	< 0.10	0.64
	18-Jul-2019		7.7 #2	0.00041	0.0046	0.013	< 0.10	0.32
B38 08-2-4	03-Aug-2016	**W-CAT-1**	15 #2	0.44	0.062	0.66	< 0.1	0.98
B38-10-2-5	04-Aug-2016	**W-CAT-5**	0.062	< 0.00040	< 0.00040	0.05	0.11	0.38
(Duplicate)	04-Aug-2016		0.06	< 0.00040	< 0.00040	0.047	0.12	0.49
	18-Aug-2017		0.084	< 0.00040	< 0.00040	0.055	0.24	1.5
(Duplicate)	18-Aug-2017		0.078	< 0.00040	< 0.00040	0.051	0.17	1.4
	12-Jul-2018		0.076	< 0.00040	< 0.00040	0.048	0.14	0.49
(Duplicate)	12-Jul-2018		0.078	< 0.00040	< 0.00040	0.052	0.23	0.38
	13-Jul-2019		0.075	< 0.00040	< 0.00040	0.034	0.20	0.99
(Duplicate)	13-Jul-2019		0.076	< 0.00040	< 0.00040	0.038	0.16	0.97
B38-16-1-3	12-Aug-2017	**W-CAT-5**	0.054	< 0.00040	< 0.00040	0.0030	0.20	3.1
	13-Jul-2018		0.047	< 0.00040	0.00044	0.0053	< 0.10	5.7
	13-Jul-2019		0.056	< 0.00040	< 0.00040	0.0021	0.12	3.8
Mainland East - B-38X Remediation Systems - Inlets								
B38-N-INLET	20-Aug-2015	**W-CAT-5**	3.5 #2	0.51	0.067	0.89	1.1	2.0
	06-Jul-2016		4.1 #2	0.69	0.1	0.83	1.3	2.2
	03-Sep-2019		4.0 #2	1.3 #2	0.14	0.50	2.1	6.0
FTA-N-INLET	20-Aug-2015	**W-CAT-5**	2.8 #2	0.56	0.058	0.54	1.5	2.1
	06-Jul-2016		2.4 #2	0.43	0.068	0.55	1.3	2.3
	03-Sep-2019		2.5 #2	0.36	0.095	0.31	1.6	0.27
LT7-Inlet	20-Aug-2015	**W-CAT-5**	4 #2	0.8	0.25	0.69	0.99	1.0
	06-Jul-2016		6.1 #2	2.3 #2	0.38	2	0.38	1.4
	03-Sep-2019		4.9 #2	3.0 #2	0.57	2.6	7.5	0.59
Mainland East - Fire Training Area - Surficial Sediment								
FTA 98-4-5	13-Aug-2017	**W-CAT-1**	14 #2	8.5 #2	0.22	6.9 #2	< 0.10	11
(Duplicate)	13-Aug-2017		14 #2	8.2 #2	0.22	6.3 #2	< 0.10	13
	16-Jul-2018		17 #2	11 #2	0.32	11	< 0.10	7.4
	15-Jul-2019		7.8 #2	5.3 #2	0.19	8.0	6.3	49
FTA 99-2-4	04-Aug-2016	**W-CAT-1**	5.6 #2	1.6 #2	0.069	2	< 0.1	15
	16-Jul-2018		13 #2	3.7 #2	0.18	3.6	< 0.10	7.5
	15-Jul-2019		12 #2	3.8 #2	0.10	2.7	4.2	4.4
FTA 99-3-4	04-Aug-2016	**W-CAT-1**	0.17	0.027	0.024	0.05	1.3	10
(Duplicate)	04-Aug-2016		0.16	0.028	0.024	0.053	1	8.4
	10-Sep-2016		0.31	0.14	0.039	0.094	0.47	21
	17-Aug-2017		0.38	0.088	0.026	0.069	3.4	6.8
	16-Jul-2018		0.16	0.045	0.015	0.041	2.3	7.4
(Duplicate)	16-Jul-2018		0.14	0.041	0.013	0.038	2.2	6.8
	20-Jun-2019		0.0026	< 0.00040	0.00051	< 0.00089	0.68	4.5
Reduced Crude Flare Pit - Surface Water								
RCF-16-SW01	03-Aug-2016	**W-CAT-6**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
Mainland East - Mainland Tank Farm - Surficial Sediment								
MTF 98-4-5	06-Aug-2016	**W-CAT-1**	0.0087	< 0.00040	< 0.00040	< 0.00080	0.23	0.20
(Duplicate)	06-Aug-2016		0.0086	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.48
	17-Aug-2017		0.0072	< 0.00040	< 0.00040	< 0.00080	< 0.10	1.1
(Duplicate)	17-Aug-2017		0.0068	< 0.00040	< 0.00040	< 0.00080	< 0.10	1.0
MTF 98-5-4	06-Aug-2016	**W-CAT-1**	0.31	< 0.00040	0.0025	0.0024	0.91	54
	17-Aug-2017		0.13	< 0.00040	0.00071	< 0.00080	0.73	4.6
TF 02-10-5	06-Aug-2016	**W-CAT-1**	0.41	0.014	0.0051	0.12	0.73	50
	17-Aug-2017		0.0085	0.00087 #3	0.0079	0.010 #3	3.8	47
	16-Jul-2018		0.48	0.0070	0.016	0.20	1.5	52
	19-Jun-2019		0.0015	< 0.00040	< 0.00040	0.017	1.4	180
TF 02-7-3	17-Aug-2017	**W-CAT-1**	6.5 #2	2.2 #2	0.077	3.3 #2	6.0	24
	16-Jul-2018		7.0 #2	2.1 #2	0.056	2.3	6.9	6.4 #9
	18-Jun-2019		7.6 #2	2.6 #2	0.025	2.1	3.4	22
TF 02-9-3	17-Aug-2017	**W-CAT-1**	4.0 #2	3.4 #2	0.29	1.9	2.2	23
	16-Jul-2018		5.6 #2	5.1 #2	0.45	2.3	5.1	8.5
	18-Jun-2019		0.43	0.52	0.13	0.92	4.7	47
TF 03-11-4	06-Aug-2016	**W-CAT-1**	7.9 #2	< 0.00040	0.27	0.77	< 0.1	0.24
	17-Aug-2017		6.8 #2	0.00059	0.30	0.81	2.3	0.37
	16-Jul-2018		7.1 #2	0.00064	0.27	0.70	< 0.10	0.27
	19-Jun-2019		6.8 #10	< 0.00040	0.30	0.88	0.36	0.38
Mainland East - B-42X Well Site - Surficial Sediment								
B42-17-1-5	15-Oct-2017	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	15-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
B42-17-2-4	15-Oct-2017	**W-CAT-1**	0.0014	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	20-Jul-2018		0.0066	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	14-Jul-2019		0.0098	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.17
B42-17-3-4	15-Oct-2017	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10

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Table 5A

Groundwater and Surface Water Analytical Results: Petroleum Hydrocarbons Parameters

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**
W-CAT-2			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-7			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-8			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
Mainland East - Former Refinery - Surficial Sediments								
NWR 93-10-6	15-Aug-2016	**W-CAT-4**	0.0076	< 0.00040	< 0.00040	0.0022	< 0.1	0.21
RB-OBS-46	15-Aug-2016	**W-CAT-4**	**0.82**	**0.0022**	0.0046	0.15	2.2	71
	15-Mar-2017		**0.83**	0.0020 [#7]	0.0068	0.25	38	5200 [#11]
	11-Apr-2017		**1.3** [#11]	0.0010	0.0047	0.19	13	1900 [#11]
	10-May-2017		**0.78**	0.0011	0.0021	0.13	1.7	140
	15-Jun-2017		0.20	0.0011	0.0019	0.051	3.1	40
	15-Jul-2017		0.28	0.00085	0.0018	0.072	1.5	35
	19-Aug-2017		**0.94**	0.00069 [#7]	0.0032	0.12	6.2	50
	15-Sep-2017		**0.53**	0.00079	0.0039	0.12	1.6	18
	14-Oct-2017		**0.79**	0.00071	0.0043	0.14	1.9	33
	23-Nov-2017		**0.62**	0.00052 [#12]	0.0037	0.12	11	46
	20-Dec-2017		**0.67**	0.00054	0.0022	0.083	6.5	220
	17-Jan-2018		**0.75**	< 0.00040	0.0028	0.075	4.1	110
	13-Feb-2018		**0.92**	0.00046 [#7]	0.0044	0.11	7.6	57
	21-Mar-2018		**0.64**	0.00053	0.0035	0.079	2.1	93
	07-Apr-2018		**0.75**	0.00045 [#7]	0.0026	0.095	9.3	400
	02-May-2018		**0.72**	0.00078	0.0033	0.049	5.0	280
	24-Jun-2018		0.053	0.00057	0.0012	0.0094	1.0	36
	18-Jul-2018		0.22	0.00062	0.0016	0.018	0.92	27
	12-Aug-2018		0.30	0.00051	0.0012	0.013	0.72	21
	18-Sep-2018		0.19	0.00083	0.00087	0.011	0.84	13
	16-Oct-2018		**0.68**	0.00099	0.00089	0.028	2.2	55 [#9]
	27-Apr-2019		0.28	0.00048	0.0013	0.032	2.6	27
	03-Oct-2019		**0.72**	0.0010 [#7]	0.00096	0.029	5.4	21
	10-Dec-2019		**0.41**	0.00044	0.00087	0.031	1.8	81 [#11]
RB-OBS-47	15-Aug-2016	**W-CAT-4**	0.011	0.00055 [#7]	0.0012	0.0037 [#7]	0.81	3.8
(Duplicate)	15-Aug-2016		0.011	0.00058	0.0013	0.0039 [#7]	0.69	6.2
	11-Apr-2017		0.21	**0.0035**	0.0078	0.038	8.4	---
	10-May-2017		0.072	0.00041	0.00072	0.0066	0.62	2.6
	15-Jul-2017		0.014	0.00060	0.00093	0.0024 [#7]	0.48	5.5
(Duplicate)	15-Jul-2017		0.014	0.00069	0.00097	0.0029 [#7]	0.59	4.9
	19-Aug-2017		0.013	0.00048	0.00075	0.0024 [#7]	0.39	7.5
	15-Sep-2017		0.018	0.00065 [#7]	0.00061	0.0023	0.25	2.7
	14-Oct-2017		0.040	0.00057	0.0019	0.0053 [#7]	0.92	6.6
	23-Nov-2017		0.11	0.00054 [#12]	0.0027	0.0085 [#12]	0.53	9.9
	17-Jan-2018		0.12	< 0.00040	0.0016	0.0071	0.63	5.8
	13-Feb-2018		0.23	< 0.00040	0.0032	0.014	0.95	---
	24-Jun-2018		0.018	< 0.00040	< 0.00040	< 0.00089	0.39	3.1
	18-Jul-2018		0.019	< 0.00040	0.00065	0.0013	0.14	2.9
	12-Aug-2018		0.030	0.00044	0.00093	0.0030	0.51	3.5
	18-Sep-2018		0.017	0.00063 [#7]	< 0.00040	< 0.00089	0.33	0.93
	16-Oct-2018		0.031	0.00055	0.0010	0.0033	< 0.10	2.8
	27-Apr-2019		0.17	< 0.00040	0.0011	0.013	1.6	16
	03-Oct-2019		0.073	< 0.00040	0.00059	0.0037	0.19	10
	10-Dec-2019		0.24	0.00041	0.0011	0.016	0.96	7.6
RB-OBS-48	15-Aug-2016	**W-CAT-4**	0.0024	< 0.00040	0.00047	< 0.00080	< 0.10	0.29
	03-Nov-2016		0.0025	< 0.00040	0.00044	0.0040 [#7]	< 0.10	2.9
RB-13-1-2.4	14-Sep-2017	**W-CAT-4**	**0.65**	0.00042	< 0.00040	0.017	< 0.10	0.18
RB-13-3-2.4	15-Aug-2016	**W-CAT-4**	0.19	< 0.00040	< 0.00040	< 0.00080	0.72	0.17
	01-Oct-2016		0.013	< 0.00040	0.0079	0.0059	< 0.10	0.24
	21-Sep-2018		0.0046	< 0.00040	0.00045	< 0.00089	< 0.10	0.18
RB-13-6-2.4	15-Aug-2016	**W-CAT-4**	0.096	0.00041	< 0.00040	0.0071	< 0.1	0.46
	01-Oct-2016		0.18	< 0.00040	< 0.00040	0.015	< 0.10	0.22
RB-13-7-1.5	21-Sep-2018	**W-CAT-4**	0.29	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
(Duplicate)	21-Sep-2018		0.34	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
RB-MW17-01	16-Jun-2017	**W-CAT-4**	**0.47**	0.0011	0.012	0.35	0.72	2.2
	15-Jul-2017		**0.73**	**0.0022**	0.0063	0.44	0.25	2.8
	19-Aug-2017		**0.54**	0.0011	0.0098	0.32	1.1	2.7
	14-Sep-2017		**0.41**	0.00089	0.0093	0.27	1.5	27
	14-Oct-2017		**0.39**	0.00089	0.0083	0.27	2.4	17
	23-Nov-2017		**0.4**	0.0011	0.0066	0.26	0.75	25
	20-Dec-2017		**0.59**	0.00067	0.0089	0.25	2.9	21 [#11]
	17-Jan-2018		**0.59**	0.00057	0.0068	0.19	2.9	36
	13-Feb-2018		**0.65**	0.00058 [#7]	0.0018	0.20	5.0	49
	21-Mar-2018		**0.56**	0.00065	0.00062	0.15	3.1	37
	07-Apr-2018		**0.61**	0.0011	0.0011	0.15	3.4	80
	02-May-2018		**0.60**	0.00082	0.0057	0.14	1.9	49
	24-Jun-2018		**0.54**	0.0020	0.014	0.24	1.9	1.6
	18-Jul-2018		**0.88**	**0.0026**	0.017	0.42	0.31	1.0
	11-Aug-2018		0.33	0.00067	0.0040	0.099	0.28	1.2
	18-Sep-2018		0.22	0.00055	0.0022	0.086	0.60	1.2
	16-Oct-2018		0.14	0.00052	0.0011	0.066	0.17	2.6
	26-Apr-2019		**0.40**	0.00088	0.0030	0.097	1.3	38
	03-Oct-2019		0.0048	0.00043	< 0.00040	0.0045	< 0.10	2.5
RB-MW17-02	16-Jun-2017	**W-CAT-4**	**0.84**	**0.0039**	0.040	0.53	0.88	2.5
	15-Jul-2017		**0.7**	**0.0031**	0.010	0.40	0.90	2.8
	19-Aug-2017		**1.2** [#11]	**0.0042**	0.037	0.67	2.0	59
	14-Sep-2017		**1.2** [#11]	**0.0042**	0.055	0.70	8.7	17
	14-Oct-2017		**0.66**	**0.0031**	0.021	0.54	3.0	8.9
	23-Nov-2017		**0.63**	**0.0028**	0.022	0.48	1.5	3.5
	20-Dec-2017		**0.63**	**0.0037**	0.023	0.51	3.7	12
	17-Jan-2018		**0.61**	**0.0025**	0.018	0.47	1.2	5.0
	13-Feb-2018		**0.62**	**0.0024**	0.019	0.46	2.3	7.3
	21-Mar-2018		**0.53**	**0.0026**	0.015	0.48	3.2	4.3
(Duplicate)	21-Mar-2018		**0.59**	**0.0025**	0.024	0.52	2.4	21
	07-Apr-2018		**0.49**	**0.0023** [#7]	0.015	0.56	16	40
	02-May-2018		**0.62**	**0.0027**	0.039	0.60	7.3	71
	24-Jun-2018		**0.89**	**0.0024**	0.039	0.41	2.3	3.7
	18-Jul-2018		**0.75**	**0.0022**	0.046	0.39	1.5	1.9
	11-Aug-2018		**0.93**	**0.0037**	0.051	0.65	0.92	2.0
	18-Sep-2018		**0.71**	**0.0032**	0.041	0.55	1.3	6.3
	16-Oct-2018		**0.82**	**0.0037**	0.047	0.60	0.58	9.8
	03-Oct-2019		**0.65**	< 0.00040	0.050	0.16	0.60	30
	11-Dec-2019		**1.0**	0.0020	0.065	0.55	1.7	2.5
RB-MW17-03	16-Jun-2017	**W-CAT-4**	**1.9** [#11]	**0.22**	0.065	0.69	1.9	12
	16-Jul-2017		**3.6** [#11]	**0.68**	**0.11**	1.1	0.65	3.6
	19-Aug-2017		**4.0** [#11]	**1.0** [#11]	**0.16**	1.4	1.3	5.3
	14-Sep-2017		**3.7** [#11]	**0.61**	**0.13**	1.2	5.4	40
	14-Oct-2017		**3.4** [#11]	**0.91**	**0.14**	1.1	1.2	30
	23-Nov-2017		**4.2** [#11]	**0.75**	**0.16**	1.4	< 0.10	57
	20-Dec-2017		**1.9** [#11]	**0.16**	**0.1**	1.0	2.4	12
	17-Jan-2018		**2.2** [#2]	**0.16**	**0.091**	0.96	1.5	12
	13-Feb-2018		**2.4** [#2]	**0.17**	0.057	0.79	2.5	28
	07-Apr-2018		**2.0** [#2]	**0.13**	0.030	0.40	0.77	24
	02-May-2018		**1.2** [#2]	**0.032**	0.053	0.48	1.8	9.7
	24-Jun-2018		**2.4** [#2]	**0.23**	0.061	0.64	1.3	2.7
	18-Jul-2018		**3.5** [#2]	**0.78**	**0.12**	1.1	0.59	15
	11-Aug-2018		**2.7** [#2]	**0.39**	0.043	0.46	< 0.10	1.5
	18-Sep-2018		**3.1** [#2]	**0.66**	**0.11**	1.1	0.65	2.2
	16-Oct-2018		**2.9** [#2]	**0.59**	0.077	0.76	< 0.10	6.5
	26-Apr-2019		**1.4** [#2]	**0.032**	0.051	0.58	2.7	36
	03-Oct-2019		**1.6** [#2]	**0.31**	0.067	0.50	1.1	2.9
	11-Dec-2019		**2.9** [#2]	**0.54**	**0.11**	1.1	2.6	3.6

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Table 5A

Groundwater and Surface Water Analytical Results: Petroleum Hydrocarbons Parameters

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**
W-CAT-2			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-7			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-8			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
RB-MW17-04	15-Jun-2017	**W-CAT-4**	**1.9** #11	**2.2** #11	**0.24**	1.1	2.7	50
	15-Jul-2017		1.4 #11	1.6 #11	0.25	1.1	1.3	7.3
(Duplicate)	15-Jul-2017		1.4 #11	1.6 #11	0.25	1.1	1.1	60 #12
	19-Aug-2017		0.27	0.32	0.034	0.35	3.1	23
	14-Sep-2017		4.3 #11	2.5 #11	0.16	0.77	< 0.10	6.8
(Duplicate)	14-Sep-2017		2.9 #11	1.7 #11	0.21	0.92	2.2	15
	14-Oct-2017		4.6 #11	2.3 #11	0.24	1.1	4.2	27
(Duplicate)	14-Oct-2017		4.9 #11	2.4 #11	0.23	1.1	3.6	32
	23-Nov-2017		3.8 #11	2.2 #11	0.28	1.2	< 0.10	130
	17-Jan-2018		**2.8** #2	**1.8** #2	**0.25**	1.1	3.7	74
	13-Feb-2018		**2.0** #2	**1.5** #2	**0.33**	1.6	21	78
	21-Mar-2018		**2.1** #2	**2.0** #2	**0.21**	1.0	5.8	110
	02-May-2018		**1.6** #2	**1.5** #2	**0.24**	1.1	8.9	100
	24-Jun-2018		0.0065	**0.0055**	0.00045	0.0060	< 0.10	0.90
	18-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.22
	18-Sep-2018		**3.5** #2	**1.8** #2	**0.13**	0.67	0.55	4.0
	11-Dec-2019		**4.0** #2	**2.5** #2	**0.22**	1.1	5.2	39
RB-MW17-05	15-Jun-2017	**W-CAT-4**	**2.4** #11	**1.3** #11	**0.13**	0.57	0.37	1.9 #9
	15-Jul-2017		0.084	**0.037**	0.0056	0.022	0.30	0.37
	19-Aug-2017		0.0021	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.42
	14-Sep-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.16
RB-MW17-06	16-Jun-2017	**W-CAT-4**	**0.79**	**0.42**	**0.11**	0.45	0.90	0.99
	15-Jul-2017		**0.8**	**0.31**	**0.092**	0.35	0.35	1.2
	19-Aug-2017		**0.4**	**0.11**	**0.11**	0.39	0.87	2.5
	14-Sep-2017		0.16	**0.013**	**0.13**	0.47	1.6	2.2
	14-Oct-2017		0.28	**0.069**	**0.11**	0.41	3.5	6.2
	23-Nov-2017		0.22	**0.012**	**0.16**	0.52	1.1	11
	20-Dec-2017		**0.83**	**0.22**	**0.15**	0.46	1.7	2.5
(Duplicate)	20-Dec-2017		**0.83**	**0.21**	**0.15**	0.45	1.7	1.9
	17-Jan-2018		**1.3** #2	**0.28**	**0.14**	0.48	1.3	3.7
	18-Sep-2018		0.078	**0.097**	0.0055	0.19	1.4	2.0
	16-Oct-2018		0.12	**0.045**	0.049	0.37	0.82	25
RB-MW17-07	16-Jun-2017	**W-CAT-4**	**0.41**	**0.16**	0.089	0.36	0.55	2.1
	15-Jul-2017		0.31	**0.061**	0.070	0.30	0.71	1.5
	19-Aug-2017		0.11	**0.012**	0.0066	0.095	0.27	0.86
	14-Sep-2017		0.012	**0.003**	0.00043	0.0038	0.29	0.98
	14-Oct-2017		**0.93**	**0.4**	0.058	0.21	1.8	1.8
	23-Nov-2017		**0.54**	**0.16**	0.050	0.22	0.82	15
	20-Dec-2017		**0.38**	**0.074**	0.054	0.25	1.4	2.5
	17-Jan-2018		0.30	**0.043**	0.044	0.21	0.95	3.4
	13-Feb-2018		0.19	**0.0044**	0.043	0.22	0.94	2.2
	21-Mar-2018		0.17	**0.0024**	0.043	0.22	0.93	2.9
	07-Apr-2018		0.18	**0.0022**	0.039	0.20	1.3	3.7
	24-Jun-2018		0.0024	0.00051 #7	< 0.00040	0.020	0.43	0.85
	18-Jul-2018		0.0015	**0.0022**	0.00070	0.0034	0.17	0.76
	11-Aug-2018		0.00044	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.19
	18-Sep-2018		0.14	**0.083**	0.014	0.063	0.74	0.28
RB-MW17-08	16-Jun-2017	**W-CAT-4**	0.042	< 0.00040	0.00055	0.022	0.40	4.1
	15-Jul-2017		0.045	0.00044	0.00043	0.021	0.47	1.8
	19-Aug-2017		0.054	0.00041 #7	0.00058	0.013	6.2	15
(Duplicate)	19-Aug-2017		0.066	< 0.00040	0.00057	0.017	1.6	13
	14-Sep-2017		0.048	< 0.00040	0.00060	0.019	0.72	6.7
	14-Oct-2017		0.068	0.0011	0.00068	0.021	0.69	11
	23-Nov-2017		0.10	< 0.00040	0.00057	0.023	0.71	21
	20-Dec-2017		0.12	< 0.00040	0.00058	0.022	0.88	1.9
	13-Feb-2018		0.081	< 0.00040	< 0.00040	0.0039	0.56	4.6
	21-Mar-2018		0.18	0.00058	0.00076	0.023	1.8	3.3
	07-Apr-2018		0.13	< 0.00040	< 0.00040	0.014	0.58	22
	02-May-2018		0.16	< 0.00040	< 0.00040	0.019	0.82	9.1
(Duplicate)	02-May-2018		0.14	< 0.00040	< 0.00040	0.017	1.5	2.6
	18-Jul-2018		0.098	< 0.00040	< 0.00040	0.0059	0.64	1.1
	11-Aug-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.87
	18-Sep-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	35
	16-Oct-2018		< 0.00040	0.00072	0.00061	0.0032	< 0.10	1.9
	26-Apr-2019		0.23	< 0.00040	0.00045	0.011	0.86	61
	03-Oct-2019		0.048	< 0.00040	< 0.00040	0.0020	0.52	51
	11-Dec-2019		0.012	0.00049	< 0.00040	< 0.00089	0.64	3.2
(Duplicate)	11-Dec-2019		0.012	< 0.00040	< 0.00040	< 0.00089	0.39	2.9
RB-MW17-09	16-Jun-2017	**W-CAT-4**	0.23	0.00045	0.0017	0.093	0.49	1.9
(Duplicate)	16-Jun-2017		0.22	0.00047	0.0016	0.085	0.57	1.8
	15-Jul-2017		0.20	0.00050	0.00052	0.078	0.79	1.8
	19-Aug-2017		0.22	< 0.00040	0.00095	0.036	0.78	4.5
	14-Sep-2017		0.22	< 0.00040	0.0011	0.026	0.59	2.0
	14-Oct-2017		0.16	0.00079	0.00065	0.019	1.5	7.8
	23-Nov-2017		0.25	0.00043	0.0019	0.071	0.75	2.3
(Duplicate)	23-Nov-2017		0.26	0.00047	0.0018	0.068	0.67	6.3
	20-Dec-2017		0.29	< 0.00040	0.0021	0.085	0.93	2.5
	17-Jan-2018		0.28	0.00048	0.0016	0.071	0.72	6.4
	13-Feb-2018		0.33	< 0.00040	0.0021	0.091	0.94	5.1
	21-Mar-2018		0.29	< 0.00040	0.0015	0.073	1.8	3.4
	07-Apr-2018		0.36	< 0.00040	0.0021	0.090	0.57	4.9
	02-May-2018		0.31	< 0.00040	0.0021	0.086	0.80	4.1
	24-Jun-2018		0.035	< 0.00040	< 0.00040	0.0026	0.21	0.79
	18-Jul-2018		0.030	< 0.00040	< 0.00040	0.0039	0.37	11
RB-MW17-09 (cont.)	11-Aug-2018		0.0032	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.90
	18-Sep-2018		0.11	< 0.00040	0.00067	0.014	0.58	2.0
	16-Oct-2018		0.071	0.00053	0.00052	0.0081	0.24	2.4
	03-Oct-2019		0.20	< 0.00040	0.00096	0.031	0.17	9.2
RB-MW17-10	19-Jun-2017	**W-CAT-4**	**0.69**	0.0015	0.013	0.14	0.40	7.1
	23-Nov-2017		**0.38**	< 0.00040	0.0052	0.060	0.90	9.5
	02-May-2018		0.057	< 0.00040	0.0054	0.044	0.46	8.6
	24-Jun-2018		0.064	< 0.00040	0.00047	0.0045	0.26	3.9
	18-Jul-2018		0.30	< 0.00040	0.0032	0.074	3.4	420
(Duplicate)	18-Jul-2018		0.31	< 0.00040	0.0028	0.090	5.8	240
	16-Oct-2018		0.17	< 0.00040	0.0012	0.023	0.21	1.1
	03-Oct-2019		0.033	< 0.00040	< 0.00040	0.0037	0.16	1.8
	11-Dec-2019		0.049	< 0.00040	< 0.00040	0.031	1.0	2.9
RB-MW17-11	19-Jun-2017	**W-CAT-4**	**0.86**	**0.0038** #7	0.0040	0.42	10	90
	24-Jun-2018	**W-CAT-4**	0.010	< 0.00040	< 0.00040	0.0054	0.36	8.3
	12-Aug-2018		0.054	< 0.00040	< 0.00040	0.011	0.25	2.3
	16-Oct-2018		0.0076	< 0.00040	< 0.00040	0.0024	< 0.10	1.4
	03-Oct-2019		0.049	< 0.00040	< 0.00040	0.0022	0.10	0.83
	11-Dec-2019		0.0035	< 0.00040	< 0.00040	< 0.00089	0.43	6.1
RB-RW-4	15-Aug-2016	**W-CAT-4**	0.081	< 0.00040	0.00067	0.19	2.8	82
RB-RW-5	02-Nov-2016	**W-CAT-4**	< 0.00040	**0.0072**	< 0.00040	< 0.00080	< 0.10	3.0
	15-Mar-2017		0.0011	**0.073**	< 0.00040	< 0.00080	< 0.10	27
	11-Apr-2017		0.0036	**0.016**	0.00061	0.0065	0.28	33
	10-May-2017		0.0020	**0.17**	0.00046	< 0.00080	0.35	33
	16-Jun-2017		< 0.00040	**0.011**	< 0.00040	< 0.00080	< 0.10	3.2
	15-Jul-2017		< 0.00040	**0.0025**	< 0.00040	< 0.00080	< 0.10	6.9
	19-Aug-2017		< 0.00040	**0.0045**	< 0.00040	< 0.00080	< 0.10	22
	15-Sep-2017		< 0.00040	**0.01**	< 0.00040	< 0.00080	< 0.10	4.1
	14-Oct-2017		0.0018	**0.015**	< 0.00040	< 0.00080	< 0.10	5.6
	23-Nov-2017		0.0041	**0.0087**	< 0.00040	< 0.00080	< 0.10	15
	20-Dec-2017		0.0032	**0.0062**	< 0.00040	< 0.00089	0.14	2.4
	17-Jan-2018		0.0025	**0.0085**	< 0.00040	< 0.00089	0.20	4.6
(Duplicate)	17-Jan-2018		0.0027	**0.013**	< 0.00040	< 0.00089	< 0.10	4.6
	13-Feb-2018		0.0021	**0.011**	< 0.00040	< 0.00089	0.19	7.5
	21-Mar-2018		0.0020	**0.0094**	< 0.00040	< 0.00089	0.16	15

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Table 5A

Groundwater and Surface Water Analytical Results: Petroleum Hydrocarbons Parameters

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**
W-CAT-2			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-7			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-8			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
RB-RW-5 (cont.)	07-Apr-2018		0.0020	**0.0054**	< 0.00040	< 0.00089	< 0.10	1.2
	02-May-2018		0.0018	**0.008**	< 0.00040	< 0.00089	0.11	**4.4**
(Duplicate)	02-May-2018		0.0018	**0.0084**	< 0.00040	< 0.00089	0.13	**4.0**
	24-Jun-2018		0.00098	**0.086**	< 0.00040	< 0.00089	0.15	**8.6**
	18-Jul-2018		0.0028	**0.11**	< 0.00040	0.00092	**0.29**	**11**
	12-Aug-2018		0.0025	**0.029**	< 0.00040	< 0.00089	0.12	**5.7**
	18-Sep-2018		0.0031	**0.05**	< 0.00040	< 0.00089	**1.0**	**12**
	16-Oct-2018		0.0048	**0.019**	< 0.00040	< 0.00089	0.19	**3.8**
	27-Apr-2019		0.0017	**0.029**	< 0.00040	< 0.00089	**0.47**	**23**
	03-Oct-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	**11**
	10-Dec-2019		0.0023	**0.015**	< 0.00040	< 0.00089	0.23	**8.0**
RB-RW-6	15-Aug-2016	**W-CAT-4**	0.00064	< 0.00040	< 0.00040	< 0.00080	< 0.1	1.4
RB-RW-8	15-Aug-2016	**W-CAT-4**	0.026	< 0.00040	0.00082	**0.024**	**0.37**	**2.5**
	15-Mar-2017		0.0027	< 0.00040	< 0.00040	< 0.00080	**0.44**	0.30
(Duplicate)	15-Mar-2017		0.0024	< 0.00040	< 0.00040	< 0.00080	**0.35**	0.76
	11-Apr-2017		0.0025	0.00067	< 0.00040	< 0.00080 [#7]	0.16	**8.2**
(Duplicate)	11-Apr-2017		0.0024	0.00056	< 0.00040	< 0.00080	0.11	**4.9**
	10-May-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	**0.35**	**2.1**
(Duplicate)	10-May-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	**0.41**	**1.9**
	16-Jul-2017		0.0050	< 0.00040	< 0.00040	< 0.00080	0.19	0.46
	19-Aug-2017		0.078	0.00047	0.00051	0.011	0.13	0.93
(Duplicate)	19-Aug-2017		0.085	0.00051	0.00057	0.012	**0.26**	1.3
	14-Sep-2017		**0.12**	0.00051	0.00058	**0.016**	**0.25**	**1.8**
(Duplicate)	14-Sep-2017		**0.11**	0.00045	0.00055	**0.015**	0.23	0.70
	14-Oct-2017		**0.18**	0.00051	0.00066	0.012	0.21	**41**
	22-Nov-2017		**0.24**	0.00061	0.0012	**0.026**	**0.27**	0.73
	20-Dec-2017		**0.23**	0.00078	0.0013	**0.022**	**0.54**	1.5
	17-Jan-2018		**0.11**	0.00065	0.00079	0.010	**0.37**	1.4
	07-Apr-2018		0.082	**0.0018**	0.00062	0.0082	**0.31**	**2.1**
	02-May-2018		0.00048	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.28
	23-Jun-2018		0.0012	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.55
	18-Jul-2018		0.0025	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.13
	12-Aug-2018		0.0037	< 0.00040	< 0.00040	< 0.00089	0.16	< 0.10
	19-Sep-2018		0.0048	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
(Duplicate)	19-Sep-2018		0.0045	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	16-Oct-2018		0.044	< 0.00040	< 0.00040	0.0018	< 0.10	0.23
	03-Oct-2019		0.0012	< 0.00040	< 0.00040	< 0.00089	**0.28**	**12**
	10-Dec-2019		0.0031	< 0.00040	< 0.00040	< 0.00089	0.21	1.0
RB-RW-9	15-Aug-2016	**W-CAT-4**	**0.18**	**0.0012**	0.00076	0.0099 [#7]	**1.1**	1.1
(Duplicate)	15-Aug-2016		**0.18**	**0.0013**	0.00070	0.0098 [#7]	**0.44**	**6.4**
	15-Mar-2017		0.017	**0.021**	< 0.00040	0.0040	**0.84**	**16**
	11-Apr-2017		0.010	**0.0049**	0.00043 [#2]	0.0031 [#7]	**0.91**	**6.8**
	10-May-2017		0.0035	< 0.00040	< 0.00040	< 0.00080	**0.32**	**3.4**
	15-Jun-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.36
	16-Jul-2017		0.023	0.00073	< 0.00040	0.0012	**0.43**	**3.1**
	19-Aug-2017		0.064	0.00070	0.00052	0.0026 [#7]	**0.40**	**6.5**
	14-Sep-2017		0.069	**0.0014**	< 0.00040	0.0022 [#7]	**0.50**	**8.5**
	14-Oct-2017		0.073	**0.0014**	0.00055	0.0024 [#7]	**1.1**	**12**
	23-Nov-2017		**0.22**	**0.00097**	0.00055	0.013 [#12]	**0.85**	**8.1**
	20-Dec-2017		**0.15**	**0.0019**	0.00067	0.0070	**1.1**	**7.1**
(Duplicate)	20-Dec-2017		**0.15**	**0.0021**	0.00061	0.0068	**1.0**	**8.9**
	17-Jan-2018		0.054	**0.0052**	0.00045	0.0029	**0.62**	**9.8**
	13-Feb-2018		0.049	**0.0035**	0.00049	0.0036	**0.59**	**9.1**
	21-Mar-2018		0.041	**0.0023**	0.00064	0.0042	**0.75**	**5.0**
	07-Apr-2018		0.047	**0.0037**	0.00051	0.0040	**0.49**	**14**
	02-May-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	23-Jun-2018		0.0097	0.00049	< 0.00040	< 0.00089	0.16	0.47
	18-Jul-2018		0.031	**0.0012**	0.00046	0.0020	**0.37**	**2.3**
	12-Aug-2018		0.065	**0.0015**	0.00051	0.0034	**0.92**	**4.8**
	19-Sep-2018		**0.22**	**0.0015**	0.00065	0.011	**1.0**	**4.7**
	16-Oct-2018		**0.31**	**0.0020**	0.00067	**0.015**	**0.84**	**6.3**
	27-Apr-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.34
	03-Oct-2019		0.086	0.00042	< 0.00040	0.0040	**0.51**	**9.7**
	10-Dec-2019		0.011	**0.0037**	< 0.00040	0.0039	**1.1**	**29**
RB-RW-12	15-Aug-2016	**W-CAT-4**	0.038	< 0.00040	< 0.00040	< 0.00080 [#7]	< 0.1	0.85
RB-RW-13	15-Mar-2017	**W-CAT-4**	0.013	**0.12**	0.0013	0.0035	**0.50**	**9.0**
	11-Apr-2017		0.013	**0.02**	0.00073	0.0017	0.12	**3.5**
	10-May-2017		0.0084	**0.0026**	0.0010	0.0018	0.12	1.6
	15-Jun-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.67
(Duplicate)	15-Jun-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.25
	16-Jul-2017		0.00095	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.71
	19-Aug-2017		0.0030	< 0.00040	< 0.00040	< 0.00080	0.21	1.6
	15-Sep-2017		0.0076	< 0.00040	< 0.00040	< 0.00080	0.24	0.74
	14-Oct-2017		0.026	0.00073	0.00065	0.0043	**0.26**	0.61
(Duplicate)	14-Oct-2017		0.022	0.00064	0.00058	0.0039	**0.33**	0.76
	23-Nov-2017		0.016	< 0.00040	< 0.00040	0.0024	**0.25**	0.97
(Duplicate)	23-Nov-2017		0.017	< 0.00040	< 0.00040	0.0028	**0.37**	**2.5**
	21-Dec-2017		0.0091	**0.0024**	0.0011	0.0020	0.21	1.2
	17-Jan-2018		0.0073	**0.0026**	0.00092	0.0015	0.17	0.94 [#12]
	13-Feb-2018		0.0019	0.00052	< 0.00040	< 0.00089	< 0.10	0.80
(Duplicate)	13-Feb-2018		0.0056	**0.0032**	0.00099	0.0018	0.24	1.2
	21-Mar-2018		0.0084	**0.0068**	0.0016	0.0030	0.12	0.95
	07-Apr-2018		0.0098	**0.0072**	0.0016	0.0030	< 0.10	1.4
(Duplicate)	07-Apr-2018		0.0055	**0.0025**	0.00091	0.0019	**0.25**	**1.8**
	02-May-2018		0.0054	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.53
	23-Jun-2018		0.0018	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.32
	18-Jul-2018		0.0065	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.93
	12-Aug-2018		0.061	< 0.00040	< 0.00040	0.0047	**0.54**	0.78
	19-Sep-2018		0.0066	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.59
	16-Oct-2018		0.029	< 0.00040	< 0.00040	0.0054	0.11	0.37
	03-Oct-2019		0.021	< 0.00040	< 0.00040	0.0024	**0.44**	**9.6**
(Duplicate)	03-Oct-2019		0.021	< 0.00040	< 0.00040	0.0029	< 0.10	**1.9**
	12-Dec-2019		0.0091	< 0.00040	< 0.00040	< 0.00089	0.22	0.60
Mainland East - Former Refinery - Bedrock								
NWR 09-2-26	12-Mar-2016	**W-CAT-3**	**0.52**	**0.015**	0.00098	**0.14**	**15**	32
	05-Aug-2016		**0.56**	**0.0080**	**0.032**	**0.31**	**1.3**	2.5
(Duplicate)	05-Aug-2016		**0.6**	**0.0086**	**0.039**	**0.34**	**1.6**	1.6
	03-Nov-2016		**0.50**	**0.0044**	**0.025**	**0.26**	**1.1**	1.2
(Duplicate)	03-Nov-2016		**0.56**	**0.0059**	**0.023**	**0.29**	**1.3**	1.3
	13-Aug-2017		**0.56**	**0.0077**	0.00091	**0.22**	**2.8**	2.5
(Duplicate)	13-Aug-2017		**0.35**	**0.0045**	0.0012	**0.12**	**1.3**	2.4
	20-Jul-2018		**0.12**	0.0011	< 0.00040	**0.035**	0.34	2.1
(Duplicate)	20-Jul-2018		**0.13**	0.0011	< 0.00040	**0.036**	0.42	2.1
	15-Jul-2019		**0.34**	0.0015	< 0.00040	**0.17**	**1.6**	0.29
(Duplicate)	15-Jul-2019		**0.21**	0.0011	< 0.00040	**0.099**	0.79	0.25
NWR 09-4-5	05-Aug-2016	**W-CAT-3**	**0.48**	0.0015	**0.0022**	**0.04**	0.69	13
	03-Nov-2016		0.060	0.00070	0.00055	0.0047 [#3]	< 0.10	**220**
	15-Mar-2017		0.013	< 0.00040	0.0012	0.0038	0.47	---
	11-Apr-2017		0.012	< 0.00040	0.00051	0.0095	0.74	**61**
	16-Jun-2017		0.021	< 0.00040	< 0.00040	0.0032	0.51	3.4
	15-Jul-2017		**0.33**	0.00071	0.00095	**0.034**	0.55	3.5
	15-Aug-2017		**0.54**	0.0015	**0.0029**	**0.063**	0.70	1.2
	14-Sep-2017		**0.43**	0.0020	**0.0021**	**0.059**	**0.94**	6.5
	14-Oct-2017		**0.26**	0.0017	0.0017	**0.046**	0.80	4.7
	23-Nov-2017		**0.15**	**0.015**	0.0017	**0.056**	**1.0**	3.4
	20-Dec-2017		**0.14**	**0.0040**	**0.0031**	**0.080**	**3.0**	5.4
	17-Jan-2018		0.059	**0.0099**	**0.0021**	**0.038**	**1.6**	8.1
(Duplicate)	17-Jan-2018		0.054	**0.011**	**0.0023**	**0.042**	**1.6**	9.3
	13-Feb-2018		0.051	**0.039**	0.0015	**0.029**	**8.5**	6.2

Advisian
Worley Group

Table 5A

Groundwater and Surface Water Analytical Results: Petroleum Hydrocarbons Parameters

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**
W-CAT-2			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-7			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-8			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
NWR 09-4-5 (cont.)	21-Mar-2018		0.036	0.014	0.00077	0.011	1.9	3.5
(Duplicate)	21-Mar-2018		0.034	0.012	0.00084	0.0079	0.80	3.6
	07-Apr-2018		0.024	0.0092	0.00065	0.0095	0.48	6.6
	02-May-2018		0.020	0.0027	< 0.00040	0.0059	1.0	3.5
	24-Jun-2018		0.12	0.0026	0.00052	0.0066	0.95	4.3
	20-Jul-2018		0.30	0.0019	0.00078	0.032	0.59	1.1
	12-Aug-2018		0.30	0.0041	0.00099	0.046	0.57	1.5
	18-Sep-2018		0.38	0.0011	0.0019	0.097	0.90	4.2
	16-Oct-2018		0.32	0.0046	0.0021	0.075	0.38	3.7
	27-Apr-2019		0.074	0.0039	0.00072	0.0097	1.1	1.4
	15-Jul-2019		0.53	0.0017	0.0029	0.080	0.80	1.4
	03-Oct-2019		0.067	0.00087 #7	0.0039	0.0061	2.6	4.9
	10-Dec-2019		0.091	0.0022	0.00078	0.016	1.1	6.0
NWR 09-5-19	12-Mar-2016	**W-CAT-3**	0.0038	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.19
	05-Aug-2016		0.0056	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
NWR 98-13-21	12-Mar-2016	**W-CAT-3**	0.058	0.00044	< 0.00040	< 0.00080	0.71	0.22
(Duplicate)	12-Mar-2016		0.043	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.95
	05-Aug-2016		0.015	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.20
(Duplicate)	05-Aug-2016		0.015	0.00043	< 0.00040	< 0.00080	< 0.1	0.15
	02-Nov-2016		0.0068	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.29
	15-Aug-2017		0.024	< 0.00040	< 0.00040	< 0.00080	0.23	0.18
NWR-OBS33	02-Nov-2016	**W-CAT-3**	0.11	0.00045	0.00058	0.020	0.17	500
RB-RW-10	15-Aug-2016	**W-CAT-3**	0.28	0.00099	0.0038	0.085	0.49	2.3
P100	14-Mar-2016	**W-CAT-3**	0.025	< 0.00040	< 0.00040	0.0036	< 0.1	0.30
	20-Aug-2016		0.046	< 0.00040	< 0.00040	0.0036	< 0.10	0.26
	02-Nov-2016		0.032	< 0.00040	< 0.00040	0.0031	< 0.10	0.25
	03-Sep-2019		0.016	< 0.00040	< 0.00040	0.0017	< 0.10	0.26
P200	14-Mar-2016	**W-CAT-3**	0.021	< 0.00040	< 0.00040	0.0018	< 0.1	0.24
	20-Aug-2016		0.045	< 0.00040	0.00042	0.0035	< 0.10	0.14
	02-Nov-2016		0.036	< 0.00040	< 0.00040	0.0018	< 0.10	0.16
(Duplicate)	02-Nov-2016		0.035	< 0.00040	< 0.00040	0.0014	< 0.10	0.12
	03-Sep-2019		0.024	< 0.00040	< 0.00040	0.0014	< 0.10	0.15
P700	14-Mar-2016	**W-CAT-3**	0.021	< 0.00040	< 0.00040	0.0030	< 0.1	0.43
(Duplicate)	14-Mar-2016		0.022	< 0.00040	< 0.00040	0.0032	< 0.1	0.33
	20-Aug-2016		0.021	< 0.00040	< 0.00040	0.0028	< 0.10	0.16
	02-Nov-2016		0.016	< 0.00040	< 0.00040	0.0025	< 0.10	0.15
	03-Sep-2019		0.010	< 0.00040	< 0.00040	0.0016	< 0.10	0.13
(Duplicate)	03-Sep-2019		0.010	< 0.00040	< 0.00040	0.0015	< 0.10	0.20
C-27X Sump - Surficial Sediment								
C27-16-2-3	03-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
(Duplicate)	03-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	15-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
(Duplicate)	15-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	13-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
(Duplicate)	13-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	11-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
(Duplicate)	11-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
C27-16-4-3	03-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.15
	13-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.16
	13-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.84
	11-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
Mainland Sumps - Surficial Sediment								
MLS-13-2-3	03-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	16-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	19-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	18-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
MLS-14-5-4	03-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	16-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
Mainland Drilling Sump - Surficial Sediment								
MLS-13-1-3	04-Aug-2016	**W-CAT-3**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
Well Services Sump - Surficial Sediment								
MLS-13-3-3	05-Aug-2016	**W-CAT-3**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	16-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
MLS-13-4-3	07-Aug-2015	**W-CAT-3**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	05-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	16-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
Well Services Sump - Bedrock								
MLS 02-8-8	04-Aug-2016	**W-CAT-3**	0.058	0.0019	0.00054	0.0032	< 0.1	0.25
(Duplicate)	04-Aug-2016		0.06	0.0019	0.00058	0.0034	< 0.1	0.28
	16-Aug-2017		0.069	0.0016	< 0.00040	0.0027	0.23	0.34
(Duplicate)	16-Aug-2017		0.064	0.0015	< 0.00040	0.0024	0.13	0.34
Bear Island - Bear Island West Sumps (Sumps 1-5) - Surficial Sediment								
BI 08-8-4	08-Aug-2016	**W-CAT-2**	0.031	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.33
(Duplicate)	08-Aug-2016		0.033	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.46
	11-Aug-2017		0.052	0.00050	0.0015	0.0075	< 0.10	0.46
(Duplicate)	11-Aug-2017		0.051	0.00048	0.0015	0.0074	< 0.10	0.49
	15-Jul-2018		0.033	< 0.00040	0.00043	< 0.00089	< 0.10	< 0.10
	17-Jul-2019		0.0011	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.10
BI-13-5-2	10-Aug-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	18-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BIS-16-1-3	10-Aug-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	10-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
(Duplicate)	10-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	17-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	17-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.11
BIS-16-7-5	08-Aug-2016	**W-CAT-2**	14 #2	5.1 #2	0.5	2	< 0.1	0.43
	11-Aug-2017		5.6 #2	1.5 #2	0.34	1.4	2.4	0.39
	15-Jul-2018		4.8 #2	0.83	0.33	1.1	1.6	0.14
	17-Jul-2019		0.44	0.076	0.0055	0.095	< 0.10	0.12
BIS-16-8-3	08-Aug-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	15-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	17-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BIS-16-10-4	11-Aug-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	17-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BIS-16-11-4	10-Aug-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	17-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BIS-16-12-5	08-Aug-2016	**W-CAT-2**	5.3 #2	3.5 #2	0.45	1.9	< 0.1	0.50
	11-Aug-2017		3.2 #2	0.0093	0.35	0.39	1.9	0.52
	17-Jul-2019		3.2 #2	0.098	0.37	0.38	2.3	1.9
Bear Island - Bear Island West Sumps (Sumps 1-5) - Surface Water								
BI-13-11	10-Aug-2016	**W-CAT-7**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	14-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
Bear Island - Former Bear Island Battery - Surficial Sediment								
BI-14-13-3	09-Aug-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10

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Table 5A

Groundwater and Surface Water Analytical Results: Petroleum Hydrocarbons Parameters

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**
W-CAT-2			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-7			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-8			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
BI BT1 09-1-4	08-Aug-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	10-Aug-2017		0.0023	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
BIBT1-15-1-3.5	08-Aug-2016	**W-CAT-2**	21 #2	0.98	0.25	0.75	< 0.1	0.35
	10-Aug-2017		12 #2	0.0070	0.063	0.051	< 0.10	< 0.10
	17-Jul-2018		17 #2	0.14	0.24	0.088	< 0.10	< 0.10
	16-Jul-2019		19 #2	0.038	0.24	0.077	< 0.10	< 0.10
BIBT1-15-2-4	08-Aug-2016	**W-CAT-2**	18 #2	4.3 #2	0.42	2.2	< 0.1	0.64
(Duplicate)	08-Aug-2016		17 #2	4 #2	0.37	2.2	< 0.1	0.62
	10-Aug-2017		11 #2	0.24	0.36	1.1	< 0.10	0.24
	17-Jul-2018		4.2 #2	0.18	0.45	0.77	2.9	0.61
(Duplicate)	17-Jul-2018		4.7 #2	0.15	0.45	0.74	2.5	0.65
	16-Jul-2019		4.1 #2	0.0071	0.35	0.45	2.6	1.5
(Duplicate)	16-Jul-2019		3.6 #2	0.0072	0.36	0.46	5.9	1.2
BIBT1-15-4-4	11-Aug-2017	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	15-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	16-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BIBT1-15-5-3	08-Aug-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
BIBT1-15-7-4	08-Aug-2016	**W-CAT-2**	0.0010 #3	< 0.00040	0.0012	0.0057	0.85	2.3
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	15-Jul-2018		0.00061	< 0.00040	0.00058	0.0047	0.26	< 0.10
	16-Jul-2019		< 0.00040	< 0.00040	0.00041	0.0013	0.22	0.63
BIBT1-16-1-3	04-Oct-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	15-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	16-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BIBT1-16-2-3	03-Oct-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	15-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
(Duplicate)	15-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	16-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BIBT1-16-3-3	03-Oct-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	15-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	16-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
Bear Island - Bear Island East Sump (Sump 6) - Surficial Sediment								
BI-13-2-4.5	07-Aug-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	15-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
BIWS-16-1-4	03-Oct-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	15-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	18-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	12-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
Bear Island - Bear Island East Sump (Sump 6) - Surface Water								
BI SW-13-1	11-Aug-2016	**W-CAT-7**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	14-Aug-2017		< 0.00040	0.0014	< 0.00040	< 0.00080	< 0.10	< 0.10
	18-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	12-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BIS6-17-SW01	27-Sep-2017	**W-CAT-7**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
Bear Island - N-42X Well Site - Surface Water								
BIN42 SW01	08-Aug-2016	**W-CAT-7**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	10-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	17-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	17-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
Bear Island - Former Bear Island Flare Pit - Surficial Sediment								
BIFP-16-1-3	04-Oct-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	10-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	12-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BIFP-16-2-3	04-Oct-2016	**W-CAT-2**	0.00069	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	12-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BIFP-16-3-3	04-Oct-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	10-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	12-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BIFP-17-1-3	15-Oct-2017	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	12-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
Bear Island - Former Bear Island Flare Pit - Surface Water								
BIFP-16-SW1	04-Oct-2016	**W-CAT-7**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	10-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	27-Sep-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	12-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BIFP-17-SW2	27-Sep-2017	**W-CAT-7**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	12-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
BI SW09	08-Aug-2016	**W-CAT-7**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	10-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	12-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
Goose Island - Surficial Sediment								
GIP9 09-1-4	07-Aug-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10
	20-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
Goose Island - Surface Water								
GI SW05	20-Aug-2017	**W-CAT-8**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
(Duplicate)	20-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10
	30-Aug-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
Relative Percent Difference (RPD) Report								
C27-16-2-3	11-Jul-2019	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
(Duplicate)	11-Jul-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
RPD(%)			---	---	---	---	---	---
B30X-12-1-4	13-Jul-2019	**W-CAT-1**	1.3 #2	0.0026	0.0045	0.057	2.9	0.93
(Duplicate)	13-Jul-2019		1.5 #2	0.0032	0.0057	0.067	2.6	0.94
RPD(%)			14.3%	20.7%	23.5%	16.1%	10.9%	1.1%
B38-10-2-5	13-Jul-2019	**W-CAT-5**	0.075	< 0.00040	< 0.00040	0.034	0.20	0.99
(Duplicate)	13-Jul-2019		0.076	< 0.00040	< 0.00040	0.038	0.16	0.97
RPD(%)			1.3%	---	---	11.1%	22.2%	2.0%
NWR 09-2-26	15-Jul-2019	**W-CAT-3**	0.34	0.0015	< 0.00040	0.17	1.6	0.29
(Duplicate)	15-Jul-2019		0.21	0.0011	< 0.00040	0.099	0.79	0.25
RPD(%)			47.3%	30.8%	---	52.8%	67.8%	14.8%
P700	03-Sep-2019	**W-CAT-3**	0.010	< 0.00040	< 0.00040	0.0016	< 0.10	0.13
(Duplicate)	03-Sep-2019		0.010	< 0.00040	< 0.00040	0.0015	< 0.10	0.20
RPD(%)			0.0%	---	---	6.5%	---	42.4%
RB-MW17-08	11-Dec-2019	**W-CAT-4**	0.012	0.00049	< 0.00040	< 0.00089	0.64	3.2
(Duplicate)	11-Dec-2019		0.012	< 0.00040	< 0.00040	< 0.00089	0.39	2.9
RPD(%)			0.0%	---	---	---	48.5%	9.8%

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Table 5A

Groundwater and Surface Water Analytical Results: Petroleum Hydrocarbons Parameters

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**
W-CAT-2			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-7			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
W-CAT-8			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**
RB-RW-13	03-Oct-2019	**W-CAT-4**	0.021	< 0.00040	< 0.00040	0.0024	**0.44**	**9.6**
(Duplicate)	03-Oct-2019		0.021	< 0.00040	< 0.00040	0.0029	< 0.10	**1.9**
RPD(%)			0.0%	---	---	18.9%	---	**133.9%**
BIBT1-15-2-4	16-Jul-2019	**W-CAT-2**	**4.1** [#2]	**0.0071**	**0.35**	**0.45**	**2.6**	**1.5**
(Duplicate)	16-Jul-2019		**3.6** [#2]	**0.0072**	**0.36**	**0.46**	**5.9**	**1.2**
RPD(%)			13.0%	1.4%	2.8%	2.2%	77.6%	22.2%

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1).

6. Superscript [#1] - Matrix Spike exceeds acceptance limits due to matrix interference. Reanalysis yields similar results.
7. Superscript [#2] - Detection limits raised due to dilution to bring analyte within the calibrated range.
8. Superscript [#3] - Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.
9. Superscript [#4] - Matrix Spike below acceptance limits due to matrix interference. Reanalysis yields similar results.
10. Superscript [#5] - Detection limit raised due to interferent.
11. Superscript [#6] - Detection limits raised due to matrix interference.
12. Superscript [#7] - Tentatively identified result and may be potentially biased high due to matrix interference.
13. Superscript [#8] - Detection limits raised due to insufficient sample volume for reanalysis. Unable to reanalyze due to insufficient sample.
14. Superscript [#9] - Duplicate exceeds acceptance criteria due to sample non homogeneity.
15. Superscript [#10] - Detection limits raised due to dilution to bring analyte within the calibrated range.Matrix Spike exceeds acceptance limits due to matrix interference. Reanalysis yields similar results.
16. Superscript [#11] - Detection limits raised due to insufficient sample volume.
17. Superscript [#12] - Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.
18. Background 95th Percentile Statistical Category:
    W-CAT-1: Mainland Locations - Surficial Sediments - 95th Percentile Background
    W-CAT-2: Bear, Goose, and Frenchy's Islands - Surficial Sediments - 95th Percentile Background
    W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background
    W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background
    W-CAT-5: Surficial Sediments - Natural Gas & Non-Saline Water Seepage - 95th Percentile Background
    W-CAT-6: Mainland Surface Water - 95th Percentile Background
    W-CAT-7: Bear Island Surface Water - 95th Percentile Background
    W-CAT-8: Goose Island Surface Water - 95th Percentile Background

Bold 19. Relative percent difference exceeds acceptable alert limit of 80%.

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Table 5B

Porewater Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Background Category	PHCs					
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**
Refinery Bank Porewater - 2018 Locations								
PW-18-1	18-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
(Duplicate)	18-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-18-2	18-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-18-3	18-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-18-4	18-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-18-5	18-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-18-6	18-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-18-7	19-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-18-8	19-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-18-9	19-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-18-10	19-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-18-11	19-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-18-12	19-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
Refinery Bank Porewater - 2019 Locations								
PW-19-1	25-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-19-2	25-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-19-3	25-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-19-4	25-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-19-5	25-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-19-6	25-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-19-7	25-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-19-8	25-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
(Duplicate)	25-Sep-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-19-9	25-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-19-11	26-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-19-13	26-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-19-14	26-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-19-15	26-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.11
(Duplicate)	26-Sep-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-19-16	26-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
PW-19-17	26-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
Relative Percent Difference (RPD) Report								
PW-19-8	25-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
(Duplicate)	25-Sep-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
RPD(%)			**---**	**---**	**---**	**---**	**---**	**---**
PW-19-15	26-Sep-2019	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.11
(Duplicate)	26-Sep-2019		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
RPD(%)			**---**	**---**	**---**	**---**	**---**	**---**

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 updated Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 updated Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background

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Table 6A

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
Mainland West - Central Processing Facility - Surficial Sediment																													
CPF 98-6-3	06-Aug-2016	**W-CAT-1**	0.0080	< 0.00060	0.0025	0.039	< 0.0010	0.41	0.000072	< 0.0010	0.0049	0.00045	**20**	< 0.00020	< 0.020	0.66	0.028	0.023	< 0.10	0.00063	5.4	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.019	< 0.0010	0.0086
	17-Aug-2017		0.0061	< 0.00060	0.00095	0.035	< 0.0010	0.36	0.00012	< 0.0010	0.0028	0.0012	4.7	< 0.00020	0.022	0.25	0.031	0.019	< 0.10	0.0030	5.2	< 0.00010	1.1	0.00039	0.0016	< 0.0010	0.040	0.0014	0.014
	16-Jul-2018		0.0050	< 0.00060	0.0020	0.064	< 0.0010	0.40	0.000080	< 0.0010	0.0025	0.00083	**11**	< 0.00020	< 0.020	0.73	0.014	0.019	< 0.10	0.00067	5.0	< 0.00010	0.92	0.00034	< 0.0010	< 0.0010	0.010	< 0.0010	0.018
(Duplicate)	16-Jul-2018		0.0046	< 0.00060	0.0018	0.060	< 0.0010	0.40	0.000073	< 0.0010	0.0024	0.00052	**12**	< 0.00020	< 0.020	0.74	0.014	0.018	< 0.10	0.00067	5.1	< 0.00010	0.93	0.00034	< 0.0010	< 0.0010	0.0096	< 0.0010	0.015
	19-Jun-2019		0.0031	< 0.00060	0.00027	0.025	< 0.0010	0.54	0.00031	< 0.0010	0.00064	0.0025	< 0.060	< 0.00020	0.035	0.29	0.0085	0.020	< 0.10	**0.0057**	4.5	< 0.00010	1.2	< 0.00020	< 0.0010	< 0.0010	**0.054**	< 0.0010	0.021
Mainland West - Central Processing Facility - Bedrock																													
CPF 97-2-7	06-Aug-2016	**W-CAT-3**	< 0.0030	< 0.00060	0.0063	1.0	< 0.0010	1.2	< 0.000020	< 0.0010	0.0018	0.00041	0.66	< 0.00020	0.10	0.23	0.00037	0.0044	< 0.10	< 0.00020	3.6	< 0.00010	0.69	< 0.00020	< 0.0010	< 0.0010	0.00079	< 0.0010	< 0.0030
	17-Aug-2017		< 0.0030	< 0.00060	0.018	1.3	< 0.0010	1.1	< 0.000020	< 0.0010	0.0016	0.00030	**2.4**	< 0.00020	0.094	0.23	0.00044	0.0020	< 0.10	0.0012	3.4	< 0.00010 [#5]	0.72	< 0.00020	< 0.0010	< 0.0010	0.00095	< 0.0010	0.0057
CPF 09-6-19	06-Aug-2016	**W-CAT-3**	0.0035	< 0.00060	0.00065	1.2	< 0.0010	1.3	< 0.000020	< 0.0010	< 0.00030	0.00030	0.20	< 0.00020	0.090	0.11	0.010	0.0024	< 0.10	< 0.00020	3.0	< 0.00010	0.66	< 0.00020	< 0.0010	< 0.0010	0.00073	< 0.0010	< 0.0030
	17-Aug-2017		0.0032	< 0.00060	0.00078	0.32	< 0.0010	0.85	< 0.000020	< 0.0010	< 0.00030	0.00030	0.46	< 0.00020	0.065	0.25	0.0032	< 0.00050	< 0.10	0.0024	3.2	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.00029	< 0.0010	< 0.0030
	16-Jul-2018		0.0038	< 0.00060	0.00078	0.98	< 0.0010	0.90	0.000022	< 0.0010	< 0.00030	0.00033	0.34	< 0.00020	0.065	0.19	0.0044	0.00054	< 0.10	0.00083	3.2	< 0.00010	0.98	< 0.00020	< 0.0010	< 0.0010	0.00045	< 0.0010	0.0036
	19-Jun-2019		< 0.0030	< 0.00060	0.00036	0.073	< 0.0010	0.33	< 0.000020	< 0.0010	< 0.00030	0.00046	0.54	< 0.00020	0.024	0.37	0.0021	0.0040	< 0.10	0.0039	4.0	< 0.00010	0.55	< 0.00020	< 0.0010	< 0.0010	0.0028	< 0.0010	< 0.0030
(Duplicate)	19-Jun-2019		< 0.0030	< 0.00060	0.00038	0.073	< 0.0010	0.33	< 0.000020	< 0.0010	< 0.00030	0.0011	0.53	< 0.00020	0.024	0.37	0.0022	0.0044	< 0.10	0.0036	4.0	< 0.00010	0.55	< 0.00020	< 0.0010	< 0.0010	0.0028	< 0.0010	0.0034
Mainland Central - Biocells / B-33X Well Site - Surficial Sediment																													
ARB-10-2-3	04-Aug-2016	**W-CAT-1**	0.012	< 0.00060	0.00095	0.068	< 0.0010	< 0.020	0.000022	< 0.0010	0.00045	0.0014	0.18	< 0.00020	< 0.020	0.14	0.0096	0.0053	< 0.10	0.00046	3.1	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.0030	< 0.0010	0.0064
	12-Aug-2017		0.0086	< 0.00060	0.00056	0.093	< 0.0010	0.023	0.000032	< 0.0010	< 0.00030	0.0022	0.11	< 0.00020	< 0.020	0.043	0.0066	0.0042	< 0.10	0.00040	3.8	< 0.00010	0.30	< 0.00020	< 0.0010	< 0.0010	0.0034	< 0.0010	0.0046
	11-Jul-2018		0.0088	< 0.00060	0.00074	0.073	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0015	0.39	< 0.00020	< 0.020	0.060	0.0092	0.0064	< 0.10	0.00072	3.0	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.0040	< 0.0010	< 0.0030
	11-Jul-2019		0.012	< 0.00060	0.00068	0.077	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0023	0.15	< 0.00020	< 0.020	0.031	0.011	0.0083	< 0.10	0.00089	3.5	< 0.00010	0.28	< 0.00020	< 0.0010	< 0.0010	0.0051	< 0.0010	< 0.0030
ARB-12-4-2	04-Aug-2016	**W-CAT-1**	0.014	< 0.00060	0.00059	0.091	< 0.0010	0.028	0.00015	< 0.0010	0.0011	0.0018	< 0.060	< 0.00020	< 0.020	0.54	0.011	0.011	< 0.10	0.0020	5.2	< 0.00010	0.46	0.00023	< 0.0010	< 0.0010	0.010	< 0.0010	0.013
	12-Aug-2017		0.0094	< 0.00060	0.00070	0.080	< 0.0010	< 0.020	0.000065	< 0.0010	0.0019	0.0018	< 0.060	< 0.00020	< 0.020	0.37	0.012	0.0056	< 0.10	**0.0036**	5.1	< 0.00010	0.47	< 0.00020	< 0.0010	< 0.0010	0.0042	< 0.0010	0.0073
	11-Jul-2018		0.0072	< 0.00060	0.00058	0.063	< 0.0010	< 0.020	0.000026	< 0.0010	< 0.00030	0.0019	< 0.060	< 0.00020	< 0.020	< 0.0040	0.012	0.0046	< 0.10	**0.0039**	4.3	< 0.00010	0.38	< 0.00020	< 0.0010	< 0.0010	0.0057	< 0.0010	0.0040
	11-Jul-2019		0.0099	< 0.00060	0.00050	0.055	< 0.0010	< 0.020	0.000025	< 0.0010	< 0.00030	0.0022	< 0.060	< 0.00020	< 0.020	< 0.0040	0.014	0.0042	< 0.10	**0.0047**	3.9	< 0.00010	0.36	< 0.00020	< 0.0010	< 0.0010	0.0059	< 0.0010	0.0065
ARB-12-1-4	04-Aug-2016	**W-CAT-1**	0.010	< 0.00060	0.00055	0.075	< 0.0010	< 0.020	0.000036	< 0.0010	< 0.00030	0.0022	< 0.060	< 0.00020	< 0.020	0.0071	0.011	0.0060	< 0.10	0.0014	4.1	< 0.00010	0.31	< 0.00020	< 0.0010	< 0.0010	0.0029	< 0.0010	0.0098
	12-Aug-2017		0.0092	< 0.00060	0.00057	0.089	< 0.0010	< 0.020	0.000038	< 0.0010	< 0.00030	0.0031	< 0.060	< 0.00020	< 0.020	0.0041	0.011	0.0063	< 0.10	0.0013	4.7	< 0.00010	0.35	< 0.00020	< 0.0010	< 0.0010	0.0037	< 0.0010	0.0058
	11-Jul-2018		0.0064	< 0.00060	0.00049	0.082	< 0.0010	< 0.020	0.000023	< 0.0010	< 0.00030	0.0021	< 0.060	< 0.00020	< 0.020	< 0.0040	0.012	0.0057	< 0.10	0.0021	3.9	< 0.00010	0.29	< 0.00020	< 0.0010	< 0.0010	0.0043	< 0.0010	0.0039
	11-Jul-2019		0.0098	< 0.00060	0.00044	0.064	< 0.0010	< 0.020	0.000025	< 0.0010	< 0.00030	0.0027	< 0.060	< 0.00020	< 0.020	< 0.0040	0.011	0.0067	< 0.10	0.0022	3.7	< 0.00010	0.30	< 0.00020	< 0.0010	< 0.0010	0.0044	< 0.0010	0.0070
ARB-13-1-4.5	04-Aug-2016	**W-CAT-1**	0.012	< 0.00060	**0.045**	0.88	< 0.0010	0.41	< 0.000020	0.0011	0.0034	0.00034	**23**	< 0.00020	0.023	0.62	0.0021	0.011	< 0.10	0.00037	6.3	< 0.00010	1.9	< 0.00020	< 0.0010	< 0.0010	0.0027	0.0011	0.010
	12-Aug-2017		0.0062	< 0.00060	**0.016**	0.41	< 0.0010	0.30	0.000048	< 0.0010	0.0029	0.0014	**6.4**	< 0.00020	< 0.020	0.76	0.0020	0.0099	< 0.10	0.00035	5.0	< 0.00010	1.8	< 0.00020	< 0.0010	< 0.0010	0.0077	< 0.0010	0.020
	11-Jul-2018		0.0075	< 0.00060	**0.044**	0.67	< 0.0010	0.38	< 0.000020	< 0.0010	0.0018	0.00049	**22**	< 0.00020	< 0.020	0.30	0.0017	0.0051	< 0.10	0.00037	5.8	< 0.00010	1.4	< 0.00020	0.0012	< 0.0010	0.0013	0.0014	0.0055
	13-Jul-2019		0.0059	< 0.00060	0.0021	0.22	< 0.0010	0.31	0.00013	< 0.0010	0.0020	0.0041	1.1	< 0.00020	< 0.020	0.38	0.0013	0.0069	< 0.10	0.00026	4.4	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.0024	< 0.0010	0.0079
ARB-13-3-4.5	04-Aug-2016	**W-CAT-1**	0.0037	< 0.00060	**0.016**	0.13	< 0.0010	0.69	< 0.000020	< 0.0010	0.00044	< 0.00020	2.6	< 0.00020	< 0.020	0.094	0.00094	0.0019	0.42	0.00055	5.4	< 0.00010	0.49	< 0.00020	< 0.0010	< 0.0010	0.00011	< 0.0010	< 0.0030
	12-Aug-2017		0.0037	< 0.00060	**0.022**	0.17	< 0.0010	0.71	< 0.000020	< 0.0010	0.00056	0.00031	4.5	< 0.00020	< 0.020	0.16	0.00085	0.0013	0.49	0.00067	5.2	< 0.00010	0.58	< 0.00020	< 0.0010	< 0.0010	0.00015	< 0.0010	0.0053
	12-Jul-2018		< 0.0030	< 0.00060	**0.018**	0.21	< 0.0010	0.70	< 0.000020	< 0.0010	< 0.00030	0.00055	3.0	< 0.00020	< 0.020	0.073	0.00063	0.00082	0.50	0.00023	4.9	< 0.00010	0.61	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0098
	11-Jul-2019		< 0.0030	< 0.00060	**0.0092**	0.19	< 0.0010	0.74	< 0.000020	< 0.0010	< 0.00030	0.00037	1.0	< 0.00020	< 0.020	0.073	0.00035	0.00066	0.20	< 0.00020	4.5	< 0.00010	0.60	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.010
ARB-13-5-4.5	04-Aug-2016	**W-CAT-1**	0.019	< 0.00060	**0.037**	0.71	< 0.0010	0.44	< 0.000020	0.0020	0.0039	0.00049	**11**	< 0.00020	< 0.020	0.80	0.016	0.011	0.10	0.00086	5.0	< 0.00010	0.88	< 0.00020	< 0.0010	< 0.0010	0.0060	0.0026	0.0060
(Duplicate)	04-Aug-2016		0.018	< 0.00060	**0.037**	0.72	< 0.0010	0.44	< 0.000020	0.0020	0.0038	0.00027	**11**	< 0.00020	< 0.020	0.80	0.017	0.011	< 0.10	0.00087	5.0	< 0.00010	0.89	< 0.00020	< 0.0010	< 0.0010	0.0061	0.0027	0.0049
	12-Aug-2017		0.015	< 0.00060	**0.023**	0.55	< 0.0010	0.38	< 0.000020	0.0014	0.0034	0.00028	4.6	< 0.00020	< 0.020	0.81	0.0098	0.010	< 0.10	0.00071	5.2	< 0.00010	1.7	< 0.00020	< 0.0010	< 0.0010	0.020	0.0019	0.0088
(Duplicate)	12-Aug-2017		0.015	< 0.00060	**0.023**	0.54	< 0.0010	0.38	< 0.000020	0.0013	0.0034	0.00080	4.6	< 0.00020	< 0.020	0.81	0.0096	0.010	< 0.10	0.00067	5.2	< 0.00010	1.7	< 0.00020	< 0.0010	< 0.0010	0.020	0.0018	0.010
	12-Jul-2018		0.0056	< 0.00060	**0.0061**	0.22	< 0.0010	0.15	< 0.000020	< 0.0010	0.0017	0.00046	1.2	< 0.00020	< 0.020	0.62	0.0041	0.0059	< 0.10	0.00035	4.9	< 0.00010	2.7	< 0.00020	< 0.0010	< 0.0010	0.016	< 0.0010	0.0033
(Duplicate)	12-Jul-2018		0.0063	< 0.00060	**0.0061**	0.22	< 0.0010	0.14	< 0.000020	< 0.0010	0.0017	0.00053	1.2	< 0.00020	< 0.020	0.62	0.0042	0.0059	< 0.10	0.00029	4.9	< 0.00010	2.7	< 0.00020	< 0.0010	< 0.0010	0.016	< 0.0010	0.0041
	11-Jul-2019		0.0032	< 0.00060	0.0029	0.24	< 0.0010	0.13	0.000023	< 0.0010	0.0012	0.00062	0.34	< 0.00020	< 0.020	0.48	0.0043	0.0054	< 0.10	0.00031	4.1	< 0.00010	2.3	< 0.00020	< 0.0010	< 0.0010	0.012	< 0.0010	0.0033
(Duplicate)	11-Jul-2019		0.0069	< 0.00060	0.0026	0.25 [#1]	< 0.0010	0.14	< 0.000020	< 0.0010	0.0013	0.00076	0.35	< 0.00020	< 0.020	0.50	0.0042	0.0055	< 0.10	< 0.00020	4.0 [#1]	< 0.00010	2.4	< 0.00020	< 0.0010	< 0.0010	0.012	< 0.0010	0.0042
ARB-16-1-3	12-Aug-2017	**W-CAT-1**	0.0076	< 0.00060	0.00040	0.082	< 0.0010	0.021	0.00021	< 0.0010	< 0.00030	0.0031	< 0.060	< 0.00020	< 0.020	0.14	0.0027	0.0057	< 0.10	0.00072	4.6	< 0.00010	0.46	< 0.00020	< 0.0010	< 0.0010	0.0083	< 0.0010	< 0.0030
	12-Jul-2018		0.010	< 0.00060	0.00044	0.063	< 0.0010	< 0.020	0.000044	< 0.0010	< 0.00030	0.0018	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0054	0.0026	< 0.10	0.0017	3.3	< 0.00010	0.31	< 0.00020	< 0.0010	< 0.0010	0.0052	< 0.0010	< 0.0030
	11-Jul-2019		0.012	< 0.00060	0.00057	0.051	< 0.0010	< 0.020	0.000039	< 0.0010	< 0.00030	0.0019	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0059	0.0028	< 0.10	0.0012	3.2	< 0.00010	0.25	< 0.00020	< 0.0010	< 0.0010	0.0040	< 0.0010	0.0032

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
ARB-17-1-3	15-Oct-2017	**W-CAT-1**	---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	3.4	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Jul-2018		0.075	< 0.00060	0.0056	0.52	< 0.0010	0.47	0.000022	< 0.0010	0.0058	0.00091	2.2	0.00021	< 0.020	2.1	0.0036	0.0091	< 0.10	0.00034	7.0	< 0.00010	0.96	< 0.00020	< 0.0010	0.0029	0.0053	0.0012	0.0084
	13-Jul-2019		0.0046	< 0.00060	0.013	0.73	< 0.0010	0.42	< 0.000020	< 0.0010	0.0032	0.0011	5.1	< 0.00020	0.023	0.93	0.0030	0.0064	0.16	0.00022	6.0	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	0.0036	< 0.0010	< 0.0030
ARB-17-2-3	15-Oct-2017	**W-CAT-1**	---	---	---	---	---	---	---	---	---	---	0.095	---	---	2.6	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2018		0.079	< 0.00060	0.0060	0.15	< 0.0010	0.47	0.000044	< 0.0010	0.0075	0.0014	14	0.00028	0.033	3.0	0.020	0.0077	< 0.10	0.00044	7.0	< 0.00010	0.71	< 0.00020	< 0.0010	0.0038	0.022	0.0010	0.012
	11-Jul-2019		0.0056	< 0.00060	0.015	0.15	< 0.0010	0.50	< 0.000020	< 0.0010	0.0048	0.00043	21	< 0.00020	0.036	2.1	0.037	0.0051	< 0.10	0.00041	6.2	< 0.00010	0.62	< 0.00020	< 0.0010	< 0.0010	0.017	0.0014	0.0074
ARB-17-3-5	15-Oct-2017	**W-CAT-1**	---	---	---	---	---	---	---	---	---	---	15	---	---	0.40	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2018		0.0066	< 0.00060	0.075	2.4	< 0.0010	0.29	< 0.000020	< 0.0010	0.0017	0.00085	24	< 0.00020	< 0.020	0.29	0.0038	0.0033	0.21	0.00064	7.7	< 0.00010	1.9	< 0.00020	< 0.0010	< 0.0010	0.00061	0.0018	0.013
	11-Jul-2019		0.0055	< 0.00060	0.085	2.3	< 0.0010	0.26	< 0.000020	< 0.0010	0.0014	0.0012	24	< 0.00020	< 0.020	0.24	0.0032	0.0025	< 0.10	0.00057	7.0	< 0.00010	1.8	< 0.00020	< 0.0010	< 0.0010	0.00034	0.0017	0.0073
BC2-15-1-3	04-Aug-2016	**W-CAT-1**	0.023	< 0.00060	0.00084	0.051	< 0.0010	< 0.020	0.000093	< 0.0010	< 0.00030	0.0040	< 0.060	< 0.00020	< 0.020	0.11	0.0031	0.0050	< 0.10	0.00068	5.4	< 0.00010	0.30	< 0.00020	< 0.0010	< 0.0010	0.0034	< 0.0010	0.0079
	12-Aug-2017		0.024	< 0.00060	0.00066	0.084	< 0.0010	0.020	0.00014	< 0.0010	< 0.00030	0.0050	< 0.060	< 0.00020	< 0.020	0.095	0.0030	0.0054	< 0.10	0.00071	5.5	< 0.00010	0.37	< 0.00020	< 0.0010	< 0.0010	0.0047	< 0.0010	0.0084
	11-Jul-2018		0.015	< 0.00060	0.00071	0.042	< 0.0010	< 0.020	0.000031	< 0.0010	< 0.00030	0.0019	< 0.060	< 0.00020	< 0.020	0.012	0.0064	0.0026	0.10	0.0010	4.7	< 0.00010	0.26	< 0.00020	< 0.0010	< 0.0010	0.0030	< 0.0010	< 0.0030
	12-Jul-2019		0.012	< 0.00060	0.00094	0.036	< 0.0010	< 0.020	0.000028	< 0.0010	< 0.00030	0.0036	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0072	0.0027	< 0.10	0.0017	4.3	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.0024	< 0.0010	0.0044
BC2-15-2-4	04-Aug-2016	**W-CAT-1**	0.0076	< 0.00060	0.00047	0.37	< 0.0010	0.052	0.000051	< 0.0010	0.011	0.0023	0.38	< 0.00020	< 0.020	3.1	0.0024	0.020	< 0.10	0.00030	5.8	< 0.00010	0.66	< 0.00020	< 0.0010	< 0.0010	0.0068	< 0.0010	0.014
	12-Aug-2017		0.0054	< 0.00060	0.00032	0.28	< 0.0010	0.047	0.000057	< 0.0010	0.0093	0.0044	0.10	< 0.00020	< 0.020	2.3	0.0021	0.019	< 0.10	0.00030	4.7	< 0.00010	0.53	< 0.00020	< 0.0010	< 0.0010	0.0079	< 0.0010	0.012
	11-Jul-2018		0.0050	< 0.00060	0.00031	0.28	< 0.0010	0.046	0.000027	< 0.0010	0.0093	0.0014	0.20	< 0.00020	< 0.020	2.4	0.0018	0.018	< 0.10	0.00031	3.9	< 0.00010	0.51	< 0.00020	< 0.0010	< 0.0010	0.0066	< 0.0010	0.0073
	12-Jul-2019		0.0063	< 0.00060	0.00052	0.44	< 0.0010	0.060	0.000094	< 0.0010	0.010	0.0026	0.49	< 0.00020	< 0.020	2.9	0.0030	0.025	< 0.10	0.00031	5.7	< 0.00010	0.75	< 0.00020	< 0.0010	< 0.0010	0.010	< 0.0010	0.014
BC2-15-3-4	04-Aug-2016	**W-CAT-1**	0.0052	< 0.00060	0.00072	0.36	< 0.0010	0.076	0.000060	< 0.0010	0.0045	0.00069	0.42	< 0.00020	< 0.020	2.2	0.0016	0.0074	< 0.10	0.00025	5.5	< 0.00010	0.63	< 0.00020	< 0.0010	< 0.0010	0.0049	< 0.0010	0.014
	12-Aug-2017		0.041	< 0.00060	0.0015	0.36	< 0.0010	0.094	0.000021	0.0010	0.0071	0.0018	1.1	0.00030	< 0.020	2.5	0.0016	0.014	< 0.10	0.00036	6.4	< 0.00010	0.56	< 0.00020	< 0.0010	0.0018	0.0043	< 0.0010	0.0082
	11-Jul-2018		0.25	< 0.00060	0.0015	0.53	< 0.0010	0.074	0.000082	0.0013	0.0065	0.0049	4.6	0.0010	< 0.020	2.2	0.0015	0.020	< 0.10	0.00040	6.7	< 0.00010	0.76	< 0.00020	< 0.0010	0.0046	0.0077	0.0021	0.014
	12-Jul-2019		0.0031	< 0.00060	0.00094	0.46	< 0.0010	0.054	0.000049	< 0.0010	0.0078	0.0026	4.3	< 0.00020	< 0.020	4.3	0.0041	0.017	< 0.10	0.00035	6.4	< 0.00010	0.78	< 0.00020	< 0.0010	< 0.0010	0.0075	< 0.0010	0.0038
BC2-15-4-3	04-Aug-2016	**W-CAT-1**	0.0086	< 0.00060	0.00060	0.062	< 0.0010	< 0.020	0.00015	< 0.0010	0.0047	0.0019	0.065	< 0.00020	< 0.020	1.0	0.011	0.0082	< 0.10	0.012	5.1	< 0.00010	0.43	< 0.00020	< 0.0010	< 0.0010	0.011	< 0.0010	0.0074
	12-Aug-2017		0.014	< 0.00060	0.00093	0.049	< 0.0010	< 0.020	0.000036	< 0.0010	0.00097	0.0013	0.083	< 0.00020	< 0.020	0.15	0.011	0.0062	< 0.10	0.0062	5.3	< 0.00010	0.38	< 0.00020	< 0.0010	< 0.0010	0.0085	< 0.0010	0.0069
	11-Jul-2018		0.011	< 0.00060	0.00077	0.044	< 0.0010	< 0.020	0.000034	< 0.0010	0.00089	0.0011	0.14	< 0.00020	< 0.020	0.19	0.0095	0.0049	< 0.10	0.0032	4.8	< 0.00010	0.33	< 0.00020	< 0.0010	< 0.0010	0.0063	< 0.0010	0.0031
	11-Jul-2019		0.0089	< 0.00060	0.00061	0.043	< 0.0010	< 0.020	0.00011	< 0.0010	0.00045	0.0026	< 0.060	< 0.00020	< 0.020	0.13	0.012	0.0056	< 0.10	0.0030	4.7	< 0.00010	0.28	< 0.00020	< 0.0010	< 0.0010	0.0075	< 0.0010	0.0049
Mainland Central - Biocells / B-33X Well Site - Surface Water																													
ARB-17-SW01	12-Aug-2017	**W-CAT-6**	---	---	---	---	---	---	---	---	---	---	0.11	---	---	0.080	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2018		---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	0.022	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Jul-2019		---	---	---	---	---	---	---	---	---	---	0.063	---	---	0.018	---	---	---	---	---	---	---	---	---	---	---	---	---
ARB-17-SW02	12-Aug-2017	**W-CAT-6**	---	---	---	---	---	---	---	---	---	---	0.081	---	---	0.25	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2018		---	---	---	---	---	---	---	---	---	---	0.14	---	---	0.36	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jul-2019		---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	0.083	---	---	---	---	---	---	---	---	---	---	---	---	---
Mainland Central - B-30X Well Site - Surficial Sediment																													
B30X-12-1-4	12-Aug-2016	**W-CAT-1**	0.15	0.0010	0.031	1.4	< 0.0010	0.099	0.000027	0.0064	0.0078	0.0016	29	0.00027	< 0.020	0.97	0.0052	0.044	0.11	0.0033	6.7	< 0.00010	0.67	< 0.00020	< 0.0010	0.0093	0.010	0.014	0.0061
(Duplicate)	12-Aug-2016		0.15	0.0011	0.030	1.4	< 0.0010	0.095	0.000020	0.0063	0.0077	0.0011	28	0.00026	< 0.020	0.96	0.0051	0.043	< 0.10	0.0034	6.5	< 0.00010	0.66	< 0.00020	< 0.0010	0.0095	0.0099	0.014	0.0058
	13-Aug-2017		0.16	0.0013	0.027	1.6	< 0.0010	0.16	0.000029	0.0048	0.0077	0.0012	36	0.0011	< 0.020	1.1	0.0037	0.046	0.11	0.0062	5.8	< 0.00010	1.0	< 0.00020	< 0.0010	0.0033	0.019	0.0076	0.0094
(Duplicate)	13-Aug-2017		0.19	0.0014	0.028	1.6	< 0.0010	0.17	0.000044	0.0049	0.0079	0.00057	37	0.0012	< 0.020	1.1	0.0037	0.048	< 0.10	0.0062	5.9	< 0.00010	1.0	< 0.00020	< 0.0010	0.0044	0.020	0.0079	0.013
	11-Jul-2018		0.076	< 0.00060	0.041	0.43	< 0.0010	0.33	< 0.000020	0.0032	0.0069	0.0018	34	0.00053	< 0.020	0.62	0.011	0.11	< 0.10	0.0058	5.1	< 0.00010	0.79	< 0.00020	< 0.0010	0.0033	0.014	0.010	0.0038
	13-Jul-2019		0.086	< 0.00060	0.035	0.34	< 0.0010	< 0.20	0.000029	0.0034	0.0057	0.0011	33	0.00047	< 0.20	0.64	0.019	0.063	< 1.0	0.0015	5.0	< 0.00010	0.56	< 0.00020	< 0.0010	0.0054	0.0094	0.012	0.0046
(Duplicate)	13-Jul-2019		0.089	< 0.00060	0.034	0.34	< 0.0010	< 0.20	0.000024	0.0031	0.0057	0.0011	33	0.00048	< 0.20	0.64	0.019	0.063	< 1.0	0.0014	4.9	< 0.00010	0.56	< 0.00020	< 0.0010	0.0098	0.0095	0.012	0.043
B30X-12-2-4	04-Aug-2016	**W-CAT-1**	0.036	< 0.00060	0.015	2.3	< 0.0010	0.037	< 0.000020	0.0024	0.0019	0.00076	61	< 0.00020	< 0.020	1.1	0.024	0.0044	< 0.10	0.0011	8.6	< 0.00010	1.0	< 0.00020	< 0.0010	0.0018	0.0012	0.0052	0.011
	13-Aug-2017		0.026	0.00081	0.025	1.4	< 0.0010	0.068	< 0.000020	0.0021	0.0022	< 0.00020	71	< 0.00020	< 0.020	0.94	0.0071	0.0066	< 0.10	0.0020	8.1	< 0.00010	1.3	< 0.00020	< 0.0010	0.0010	0.00097	0.0029	0.0038
	11-Jul-2018		0.026	0.00063	0.019	0.57	< 0.0010	0.042	< 0.000020	0.0019	0.0024	0.00037	71	< 0.00020	< 0.020	1.2	0.012	0.0092	< 0.10	0.0035	6.8	< 0.00010	1.0	< 0.00020	< 0.0010	0.0016	0.0048	0.0038	0.0050
	13-Jul-2019		0.033	0.00066	0.015	1.1	< 0.0010	0.040	< 0.000020	0.0020	0.0055	0.0013	55	< 0.00020	< 0.020	1.4	0.0042	0.019	< 0.10	0.0014	5.4	< 0.00010	1.1	< 0.00020	< 0.0010	0.0018	0.0078	0.0028	0.0041

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
B30-13-1-5.4	04-Aug-2016	**W-CAT-1**	0.0048	< 0.00060	0.0012	0.074	< 0.0010	0.091	< 0.000020	< 0.0010	0.0013	0.0010	0.098	< 0.00020	< 0.020	0.12	0.027	0.0096	< 0.10	0.0029	4.0	< 0.00010	2.5	< 0.00020	< 0.0010	< 0.0010	0.016	< 0.0010	0.0070
	13-Aug-2017		0.0043	< 0.00060	0.0016	0.11	< 0.0010	0.13	< 0.000020	< 0.0010	0.0024	0.00089	0.40	< 0.00020	0.040	0.71	0.011	0.0075	< 0.10	0.00054	4.8	< 0.00010	2.7	< 0.00020	< 0.0010	< 0.0010	0.018	< 0.0010	< 0.0030
B30-13-2-4.5	12-Aug-2016	**W-CAT-1**	0.0051	< 0.00060	0.00061	0.057	< 0.0010	0.13	0.00017	< 0.0010	0.00039	0.0039	< 0.060	< 0.00020	0.022	0.054	0.0039	0.0057	< 0.10	0.0015	5.9	< 0.00010	3.1	< 0.00020	< 0.0010	< 0.0010	0.018	< 0.0010	0.0085
	13-Aug-2017		0.0055	< 0.00060	0.00042	0.067	< 0.0010	0.15	0.00029	< 0.0010	0.00041	0.0054	< 0.060	< 0.00020	< 0.020	0.084	0.0023	0.0082	< 0.10	0.00076	5.6	< 0.00010	3.4	< 0.00020	< 0.0010	< 0.0010	0.021	< 0.0010	0.0091
	12-Jul-2018		0.0031	< 0.00060	0.00020	0.053	< 0.0010	0.086	0.00018	< 0.0010	< 0.00030	0.0034	< 0.060	< 0.00020	< 0.020	0.062	0.0043	0.0050	< 0.10	0.00095	4.5	< 0.00010	2.7	< 0.00020	< 0.0010	< 0.0010	0.010	< 0.0010	0.0075
(Duplicate)	12-Jul-2018		0.0040	< 0.00060	0.00022	0.053	< 0.0010	0.090	0.00018	< 0.0010	< 0.00030	0.0032	< 0.060	< 0.00020	< 0.020	0.065	0.0047	0.0045	< 0.10	0.0010	4.7	< 0.00010	2.9	< 0.00020	< 0.0010	< 0.0010	0.011	< 0.0010	0.0048
	13-Jul-2019		0.0077	< 0.00060	0.00027	0.054	< 0.0010	0.074	0.00012	< 0.0010	< 0.00030	0.0034	< 0.060	< 0.00020	< 0.020	0.053	0.0048	0.0032	< 0.10	0.0012	4.1	< 0.00010	2.1	< 0.00020	< 0.0010	< 0.0010	0.0075	< 0.0010	0.0047
B30-13-3-4.5	04-Aug-2016	**W-CAT-1**	0.0091	< 0.00060	0.0019	0.13	< 0.0010	0.55	0.00031	< 0.0010	0.0032	0.0033	0.35	< 0.00020	0.042	0.86	0.0024	0.012	< 0.10	0.00064	6.2	< 0.00010	1.6	< 0.00020	0.0019	0.0012	0.033	< 0.0010	0.0073
	13-Aug-2017		0.0067	< 0.00060	0.0011	0.17	< 0.0010	0.49	0.00023	< 0.0010	0.0012	0.0071	0.19	0.00025	0.031	0.24	0.0011	0.011	< 0.10	0.0015	5.7	< 0.00010	1.7	< 0.00020	< 0.0010	< 0.0010	0.033	< 0.0010	0.0040
	11-Jul-2018		0.0098	< 0.00060	0.00068	0.096	< 0.0010	0.31	0.00017	< 0.0010	< 0.00030	0.010	< 0.060	< 0.00020	< 0.020	0.021	0.0023	0.0069	< 0.10	0.00047	5.3	< 0.00010	2.0	< 0.00020	< 0.0010	< 0.0010	0.025	0.0010	0.0041
	15-Jul-2019		0.0092	< 0.00060	0.00055	0.11	< 0.0010	0.37	0.00018	< 0.0010	0.00036	0.0094	< 0.060	< 0.00020	0.022	0.11	0.0021	0.0086	< 0.10	0.00044	5.6	< 0.00010	3.2	< 0.00020	< 0.0010	< 0.0010	0.019	< 0.0010	0.0045
B30-13-4-3.9	18-Aug-2017	**W-CAT-1**	< 0.0030	0.00067	0.00028	0.069	< 0.0010	0.32	0.000032	< 0.0010	< 0.00030	0.0037	< 0.060	< 0.00020	< 0.020	< 0.0040	0.062	0.0023	< 0.10	0.019	5.6	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.0070	< 0.0010	0.0034
B30-17-1-5	15-Oct-2017	**W-CAT-1**	---	---	---	---	---	---	---	---	---	---	0.087	---	---	0.30	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Jul-2018		0.16	< 0.00060	0.089	1.2	< 0.0010	0.61	0.000051	< 0.0010	0.012	0.0030	6.1	0.00084	0.025	1.2	0.012	0.025	0.22	0.00052	4.6	< 0.00010	1.6	< 0.00020	< 0.0010	0.0066	0.0039	0.0028	0.024
	13-Jul-2019		0.0076	< 0.00060	0.023	1.8	< 0.0010	0.50	< 0.000020	< 0.0010	0.011	0.0013	6.9	< 0.00020	0.025	1.1	0.012	0.028	< 0.10	0.00060	4.0	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0043	0.0018	0.012
B30-17-2-3	12-Jul-2018	**W-CAT-1**	0.071	< 0.00060	0.0035	0.24	< 0.0010	0.037	0.00042	0.0013	0.014	0.0077	0.47	0.00024	< 0.020	2.1	0.0041	0.041	< 0.10	0.00099	7.2	< 0.00010	0.65	< 0.00020	< 0.0010	0.0022	0.012	0.0047	0.012
	15-Jul-2019		0.025	0.00086	0.00090	0.11	< 0.0010	< 0.020	0.00013	< 0.0010	0.0016	0.0068	< 0.060	< 0.00020	< 0.020	0.27	0.057	0.010	< 0.10	0.047	1.4	< 0.00010	0.31	< 0.00020	< 0.0010	< 0.0010	0.0052	0.0046	0.0043
Mainland Central - B-30X Well Site - Bedrock																													
B30-19-01-5	02-Sep-2019	**W-CAT-3**	0.0042	< 0.00060	0.00092	0.72	< 0.0010	0.90	< 0.000020	< 0.0010	0.00044	< 0.00020	0.12	< 0.00020	0.058	0.12	0.0015	0.00062	< 0.10	0.00065	2.1	< 0.00010	0.28	< 0.00020	< 0.0010	< 0.0010	0.00036	< 0.0010	< 0.0030
Mainland Central - C-30X Well Site / Bosworth Creek and Delta - Surficial Sediment																													
C30-10-1-5	10-Aug-2016	**W-CAT-3**	0.0036	< 0.00060	0.0040	1.1	< 0.0010	0.23	< 0.000020	< 0.0010	0.0016	0.00062	9.5	< 0.00020	0.056	0.40	0.00027	0.0054	< 0.10	0.00059	7.8	< 0.00010	2.0	< 0.00020	< 0.0010	< 0.0010	0.0049	< 0.0010	0.0069
	12-Aug-2017		0.016	< 0.00060	0.0095	3.4	< 0.0010	0.26	< 0.000020	< 0.0010	0.0017	0.00049	22	< 0.00020	0.028	0.35	0.0011	0.0043	0.46	0.0016	8.9	< 0.00010	2.5	< 0.00020	< 0.0010	0.0014	0.0075	0.0037	0.0075
	12-Jul-2018		0.0085	< 0.00060	0.011	2.1	< 0.0010	0.23	< 0.000020	< 0.0010	0.0025	0.0015	19	< 0.00020	0.029	0.48	0.0011	0.0055	0.11	0.00071	7.3	< 0.00010	2.4	< 0.00020	< 0.0010	< 0.0010	0.0062	0.0037	0.010
	13-Jul-2019		0.0075	< 0.00060	0.011	1.2 #1	< 0.0010	0.20	< 0.000020	< 0.0010	0.0026	0.00080	18	< 0.00020	0.041	0.52	0.00083	0.0062	< 0.10	0.00069	6.6	< 0.00010	2.2	< 0.00020	< 0.0010	0.0017	0.0069	0.0030	0.010
BOS-DP-13-1-1.4	11-Aug-2016	**W-CAT-3**	0.0057	< 0.00060	0.0029	3.2	< 0.0010	1.0	< 0.000020	< 0.0010	< 0.00030	0.00092	1.1	< 0.00020	0.093	0.46	0.00048	0.0058	< 0.10	0.0044	2.6	< 0.00010	1.2	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0051
	13-Jul-2019		0.0063	< 0.00060	0.0015	4.1	< 0.0010	0.29	< 0.000020	< 0.0010	< 0.00030	0.0016	2.0	< 0.00020	0.10	1.8	0.00021	0.0013	< 0.10	< 0.00020	2.9	< 0.00010	3.9	< 0.00020	< 0.0010	< 0.0010	0.00024	< 0.0010	0.0075
BOS-DP-13-2-1.35	06-Aug-2016	**W-CAT-3**	0.012	0.00077	0.0086	2.1	< 0.0010	0.053	< 0.000020	< 0.0010	0.0031	0.00086	0.85	< 0.00020	0.020	0.40	0.013	0.0080	< 0.10	0.00024	5.1	< 0.00010	2.7	< 0.00020	< 0.0010	< 0.0010	0.0010	< 0.0010	0.0074
	18-Aug-2017		0.030	< 0.00060	0.013	1.9	< 0.0010	0.059	< 0.000020	< 0.0010	0.00080	0.00031	20	< 0.00020	< 0.020	0.30	0.0011	0.0019	< 0.10	0.00023	5.6	< 0.00010	2.8	< 0.00020	0.0017	< 0.0010	0.00012	< 0.0010	0.0094
BOS-DP-13-3-2	06-Aug-2016	**W-CAT-3**	---	---	---	---	---	---	---	---	---	---	2.4	---	---	0.017	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2017		---	---	---	---	---	---	---	---	---	---	2.8	---	---	0.14	---	---	---	---	---	---	---	---	---	---	---	---	---
BOS-DP-13-4-3	06-Aug-2016	**W-CAT-3**	0.011	< 0.00060	0.0071	0.88	< 0.0010	0.37	< 0.000020	< 0.0010	< 0.00030	< 0.00020	0.060	< 0.00020	< 0.020	0.085	0.032	0.0019	< 0.10	< 0.00020	4.0	< 0.00010	0.66	< 0.00020	< 0.0010	< 0.0010	0.00059	< 0.0010	< 0.0030
(Duplicate)	06-Aug-2016		0.012	0.00063	0.0068	0.89	< 0.0010	0.37	< 0.000020	< 0.0010	< 0.00030	0.00037	< 0.060	< 0.00020	< 0.020	0.084	0.032	0.0023	< 0.10	< 0.00020	4.1	< 0.00010	0.66	< 0.00020	< 0.0010	< 0.0010	0.00063	< 0.0010	0.0035
	18-Aug-2017		0.0067	< 0.00060	0.0081	0.75	< 0.0010	0.33	< 0.000020	< 0.0010	< 0.00030	< 0.00020	0.11	< 0.00020	< 0.020	0.13	0.0082	0.00097	< 0.10	0.00022	4.0	< 0.00010	0.76	< 0.00020	0.0028	< 0.0010	0.00028	0.0012	< 0.0030
Mainland Central - C-30X Well Site / Bosworth Creek and Delta - Surface Water																													
BOS SW01	11-Aug-2016	**W-CAT-6**	---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	0.0057	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2017		---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	0.0060	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	18-Aug-2017		---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	0.0063	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Jul-2018		---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	0.0057	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jul-2019		---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	0.0081	---	---	---	---	---	---	---	---	---	---	---	---	---
Mainland Central - Former Battery #3 - Surficial Sediment																													
BT3 02-32-6	05-Aug-2016	**W-CAT-3**	0.0093	< 0.00060	0.072	3.6	< 0.0010	0.27	< 0.000020	< 0.0010	0.0047	0.00086	27	0.00022	0.024	1.0	0.00051	0.0098	< 0.10	0.0011	6.5	< 0.00010	2.6	< 0.00020	< 0.0010	< 0.0010	0.0015	< 0.0010	0.010
	12-Jul-2018		0.023	< 0.00060	0.13	7.5 #2	< 0.0010	0.35	< 0.000020	0.0011	0.0032	0.00087	44	0.00023	< 0.020	1.0	0.00037	0.0074	< 0.10	0.0013	5.6	< 0.00010	2.9	< 0.00020	< 0.0010	0.0017	0.0030	0.0040	0.0096
	13-Jul-2019		0.45	0.0019	0.11	7.8 #2	< 0.0010	0.33	0.000023	0.0024	0.0031	0.0039	36	0.0035	0.024	0.92	0.00068	0.012	0.16	0.00075	5.7	< 0.00010	2.7	< 0.00020	< 0.0010	0.0033	0.0018	0.0046	0.028

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BT3 02-34-4	17-Jul-2018	**W-CAT-3**	0.0049	< 0.00060	0.00054	0.077	< 0.0010	0.047	0.00013	< 0.0010	< 0.00030	0.0058	0.060	< 0.00020	0.021	0.025	0.00082	0.0080	< 0.10	0.00032	3.6	< 0.00010	0.80	< 0.00020	< 0.0010	< 0.0010	0.014	< 0.0010	0.0076
	14-Jul-2019		0.020	< 0.00060	0.00061	0.072	< 0.0010	0.044	0.00010	< 0.0010	< 0.00030	0.0066	< 0.060	< 0.00020	0.021	0.014	0.00064	0.0064	< 0.10	0.00054	4.2	< 0.00010	0.67	< 0.00020	< 0.0010	< 0.0010	0.012	< 0.0010	0.0064
BT3 02-36-4	17-Jul-2018	**W-CAT-3**	0.023	< 0.00060	0.0040	0.21	< 0.0010	< 0.020	< 0.000020	0.0012	< 0.00030	0.00071	**26**	< 0.00020	< 0.020	**1.2**	0.00029	0.0033	< 0.10	0.0011	4.3	< 0.00010	0.87	< 0.00020	< 0.0010	0.0018	0.0087	0.0029	0.012
	14-Jul-2019		0.030	< 0.00060	0.0039	0.081	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.00056	0.0014	**25**	< 0.00020	< 0.020	**2.0**	0.00054	0.0048	0.15	0.0014	4.0	< 0.00010	0.82	< 0.00020	< 0.0010	0.0021	0.019	0.0027	0.0070
BT3-18-1-5.5	12-Jul-2018	**W-CAT-3**	0.0067	0.0018	0.0022	0.46	< 0.0010	0.15	0.000039	< 0.0010	0.0013	0.0018	0.084	< 0.00020	0.029	**1.3**	0.0021	0.0033	< 0.10	0.00095	8.5	< 0.00010	1.5	< 0.00020	0.0011	0.0012	0.026	< 0.0010	0.0074
Mainland Central - Former Battery #3 - Bedrock																													
BT3 97-11-11	05-Aug-2016	**W-CAT-3**	< 0.0030	< 0.00060	0.0077	3.2	< 0.0010	**1.7**	< 0.000020	< 0.0010	0.00036	0.00090	0.087	< 0.00020	0.17	0.081	0.00021	0.0034	< 0.10	0.00039	3.1	< 0.00010	0.60	< 0.00020	< 0.0010	< 0.0010	0.00065	< 0.0010	0.011
	13-Aug-2017		0.0034	< 0.00060	0.0077	3.8	< 0.0010	**1.7**	< 0.000020	< 0.0010	< 0.00030	0.00031	0.78	< 0.00020	0.16	0.058	< 0.00020	0.00084	< 0.10	0.00028	2.9	< 0.00010	0.72	< 0.00020	< 0.0010	< 0.0010	0.00045	< 0.0010	< 0.0030
	17-Jul-2018		< 0.0030	< 0.00060	0.010	3.3	< 0.0010	**1.6**	< 0.000020	< 0.0010	0.00034	0.00063	0.71	< 0.00020	0.15	0.066	0.00020	0.0014	< 0.10	0.00068	2.7	< 0.00010	0.62	< 0.00020	< 0.0010	< 0.0010	0.00033	< 0.0010	0.0081
	14-Jul-2019		< 0.0030	< 0.00060	0.0030	3.5	< 0.0010	**1.8**	0.00013	< 0.0010	0.0016	0.0026	0.65	< 0.00020	0.16	0.065	0.00089	0.0040	< 0.10	0.00036	2.9	< 0.00010	0.63	< 0.00020	< 0.0010	< 0.0010	0.0078	< 0.0010	0.0046
BT3 98-7-7	14-Jul-2019	**W-CAT-3**	< 0.0030	< 0.00060	0.0025	0.027	< 0.0010	0.61	< 0.000020	< 0.0010	< 0.00030	0.00085	1.9	< 0.00020	0.045	**1.2**	< 0.00020	0.0020	< 0.10	0.00074	3.5	< 0.00010	0.80	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	0.0061
BT3 99-20-13	05-Aug-2016	**W-CAT-3**	0.0036	< 0.00060	0.00090	0.70	< 0.0010	0.71	< 0.000020	< 0.0010	0.00039	0.00038	0.082	< 0.00020	0.087	**0.36**	0.00062	0.0024	< 0.10	0.0014	3.4	< 0.00010	2.8	< 0.00020	< 0.0010	< 0.0010	0.00023	< 0.0010	0.0060
	13-Aug-2017		0.0071	< 0.00060	0.00079	0.56	< 0.0010	0.85	< 0.000020	< 0.0010	< 0.00030	0.0024	0.085	< 0.00020	0.055	0.18	< 0.00020	0.013	< 0.10	< 0.00020	3.0	< 0.00010	1.7	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030
BT3 99-23-13	05-Aug-2016	**W-CAT-3**	< 0.030	< 0.0060	< 0.0020	0.63	< 0.010	**1.5**	< 0.00020	**< 0.010**	< 0.0030	< 0.0020	2.0	< 0.0020	0.25	**0.56**	< 0.0020	< 0.0050	< 1.0	< 0.0020	3.1	**< 0.0010**	11	< 0.0020	< 0.010	< 0.010	< 0.0010	< 0.010	**< 0.030**
(Duplicate)	05-Aug-2016		< 0.030	< 0.0060	< 0.0020	0.62	< 0.010	**1.5**	< 0.00020	**< 0.010**	< 0.0030	< 0.0020	1.9	< 0.0020	0.26	**0.56**	< 0.0020	< 0.0050	< 1.0	< 0.0020	3.3	**< 0.0010**	11	< 0.0020	< 0.010	< 0.010	< 0.0010	< 0.010	**< 0.030**
	13-Aug-2017		0.0032	< 0.00060	0.00062	0.85	< 0.0010	**1.7**	< 0.000020	< 0.0010	< 0.00030	0.00040	0.96	< 0.00020	0.21	**0.34**	< 0.00020	< 0.00050	< 1.0	< 0.00020	3.4	< 0.00010	9.0	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030
(Duplicate)	13-Aug-2017		0.0036	< 0.00060	0.00069	0.85	< 0.0010	**1.7**	< 0.000020	< 0.0010	< 0.00030	0.00045	0.98	< 0.00020	0.21	**0.34**	< 0.00020	< 0.00050	< 1.0	< 0.00020	3.2	< 0.00010	9.0	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030
	12-Jul-2018		0.010	< 0.00060	0.00092	0.22	< 0.0010	**1.7**	< 0.000020	< 0.0010	< 0.00030	0.00055	**2.4**	< 0.00020	0.27	0.28	< 0.00020	< 0.00050	< 1.0	0.0024	3.5	< 0.00010	8.2	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0042
(Duplicate)	12-Jul-2018		0.0095	< 0.00060	0.0010	0.23	< 0.0010	**1.7**	< 0.000020	< 0.0010	< 0.00030	0.00041	**2.4**	< 0.00020	0.29	0.28	< 0.00020	< 0.00050	< 1.0	0.0027	3.5	< 0.00010	8.2	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030
	13-Jul-2019		< 0.0030	< 0.00060	0.00050	0.58	< 0.0010	**1.7**	< 0.000020	< 0.0010	< 0.00030	0.00045	< 0.60	< 0.00020	0.21	0.15	< 0.00020	0.0010	< 1.0	0.0011	3.0	< 0.00010	6.6	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030
(Duplicate)	13-Jul-2019		< 0.0030	< 0.00060	0.00057	0.59	< 0.0010	**1.7**	< 0.000020	< 0.0010	< 0.00030	0.00034	< 0.60	< 0.00020	0.21	0.14	< 0.00020	0.00071	< 1.0	0.00097	2.9	< 0.00010	6.6	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030
Mainland Central - F-31X Well Site - Surficial Sediment																													
F31 98-1-4	06-Aug-2016	**W-CAT-1**	0.018	< 0.00060	0.0017	0.20	< 0.0010	0.035	0.000037	< 0.0010	0.0050	0.00068	4.6	0.00022	< 0.020	2.7	0.0020	0.026	< 0.10	0.00077	5.9	< 0.00010	2.8	< 0.00020	< 0.0010	< 0.0010	0.012	0.0012	0.0082
Mainland Central - G-23X Well Site - Surficial Sediment																													
G32-10-1-3	06-Aug-2016	**W-CAT-1**	0.0081	< 0.00060	0.00050	0.066	< 0.0010	0.068	0.00014	< 0.0010	0.00079	0.0024	0.17	< 0.00020	0.030	0.35	0.00038	0.0093	< 0.10	0.00040	4.6	< 0.00010	1.9	< 0.00020	< 0.0010	< 0.0010	0.0069	< 0.0010	0.0083
	17-Aug-2017		0.011	< 0.00060	0.00041	0.082	< 0.0010	0.064	0.00020	< 0.0010	< 0.00030	0.0057	< 0.060	< 0.00020	0.022	0.018	0.00028	0.0066	< 0.10	0.00061	4.4	< 0.00010	1.8	< 0.00020	< 0.0010	< 0.0010	0.0073	0.0011	0.022
Mainland Central - E-33X Well Site - Surficial Sediment																													
E33-18-1-2.5	22-Jul-2018	**W-CAT-1**	< 0.0030	0.00069	0.0058	**1.7**	< 0.0010	0.18	< 0.000020	< 0.0010	0.0020	0.00042	**22**	< 0.00020	0.020	0.81	**0.014**	0.0070	< 0.10	0.00032	9.4	< 0.00010	2.4	< 0.00020	< 0.0010	< 0.0010	0.0011	0.0012	0.0032
(Duplicate)	22-Jul-2018		< 0.0030	0.00065	0.0048	**1.7**	< 0.0010	0.19	< 0.000020	< 0.0010	0.0023	0.00051	**22**	< 0.00020	< 0.020	0.73	**0.011**	0.0096	< 0.10	0.00034	9.4	< 0.00010	2.5	< 0.00020	< 0.0010	< 0.0010	0.00085	0.0014	0.0091
	11-Jul-2019		**0.70**	< 0.00060	0.0033	< 0.10	< 0.0010	< 0.20	0.00016	0.0020	0.0039	0.0019	**210**	0.0039	< 0.20	**3.3**	0.0039	**0.031**	< 1.0	0.00035	5.0	< 0.00010	3.2	< 0.00020	< 0.0010	0.0067	0.0082	0.0039	**0.068**
(Duplicate)	11-Jul-2019		**0.80**	< 0.00060	0.0036	< 0.10	< 0.0010	< 0.20	0.00018	0.0021	0.0042	0.0022	**210**	0.0043	< 0.20	**3.3**	0.0039	**0.032**	< 1.0	0.00026	5.0	< 0.00010	3.2	< 0.00020	< 0.0010	0.0073	0.0084	0.0040	**0.043**
Mainland Central - E-33X Well Site - Bedrock																													
E33-19-01-4	02-Sep-2019	**W-CAT-3**	0.0033	< 0.00060	0.0045	3.4	< 0.0010	0.23	< 0.000020	< 0.0010	0.0052	0.00066	**14**	< 0.00020	0.033	**0.84**	0.0079	0.011	< 0.10	0.00040	9.3	< 0.00010	4.6	< 0.00020	< 0.0010	< 0.0010	0.0016	< 0.0010	0.011
E33-19-02-5	02-Sep-2019	**W-CAT-3**	0.0036	0.0012	0.0021	0.90	< 0.0010	0.42	0.000030	< 0.0010	0.0026	0.0011	< 0.060	< 0.00020	0.055	**0.64**	**0.0099**	0.0096	< 0.10	0.0017	6.0	< 0.00010	1.8	< 0.00020	< 0.0010	< 0.0010	0.0060	< 0.0010	0.0048
Mainland East - Former Fuel Tanks and Potential Campsite Biocell - Surficial Sediment																													
CAB 09-3-3	05-Aug-2016	**W-CAT-1**	0.0058	< 0.00060	0.00022	0.038	< 0.0010	0.035	0.000098	< 0.0010	< 0.00030	0.0012	0.064	< 0.00020	< 0.020	0.10	0.0011	0.0062	< 0.10	0.00023	4.6	< 0.00010	0.32	< 0.00020	< 0.0010	< 0.0010	0.0019	< 0.0010	0.0057
	12-Aug-2017		0.014	< 0.00060	0.0021	0.048	< 0.0010	0.039	0.000040	< 0.0010	0.0023	0.00079	2.6	< 0.00020	< 0.020	2.1	**0.0094**	0.0088	< 0.10	0.00060	5.5	< 0.00010	0.49	< 0.00020	< 0.0010	< 0.0010	0.0014	< 0.0010	0.0074
	12-Jul-2018		0.010	< 0.00060	0.0025	0.048	< 0.0010	0.055	0.000025	< 0.0010	0.0023	0.00072	3.3	< 0.00020	< 0.020	2.8	**0.0084**	0.0087	< 0.10	0.00061	5.0	< 0.00010	0.62	< 0.00020	< 0.0010	< 0.0010	0.0025	< 0.0010	0.0079
	15-Jul-2019		0.0061	< 0.00060	0.0021	0.065 [#1]	< 0.0010	0.041	0.00015	< 0.0010	0.0032	0.0027	2.9	< 0.00020	< 0.020	**4.3**	**0.0075**	0.012	< 0.10	0.00086	4.8	< 0.00010	0.68	< 0.00020	< 0.0010	< 0.0010	0.010	< 0.0010	0.021

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
FT-10-1-3	05-Aug-2016	**W-CAT-1**	0.011	< 0.00060	0.00065	0.095	< 0.0010	< 0.020	0.000057	< 0.0010	< 0.00030	0.0017	< 0.060	< 0.00020	< 0.020	0.056	0.023	0.0059	< 0.10	0.0014	4.1	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.0031	< 0.0010	0.0057
	12-Aug-2017		0.011	< 0.00060	0.00077	0.10	< 0.0010	< 0.020	0.000036	< 0.0010	< 0.00030	0.0023	< 0.060	< 0.00020	< 0.020	0.0057	0.021	0.0049	< 0.10	0.0016	4.3	< 0.00010	0.27	< 0.00020	< 0.0010	< 0.0010	0.0036	< 0.0010	0.0066
	12-Jul-2018		0.0049	< 0.00060	0.00031	0.23	< 0.0010	0.024	< 0.000020	< 0.0010	< 0.00030	0.0016	< 0.060	< 0.00020	< 0.020	0.0050	0.0068	0.0026	< 0.10	0.0039	3.1	< 0.00010	0.38	< 0.00020	< 0.0010	< 0.0010	0.0039	< 0.0010	< 0.0030
	15-Jul-2019		0.0051	< 0.00060	0.00036	0.15	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0033	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0075	0.0026	< 0.10	0.0053	3.4	< 0.00010	0.38	< 0.00020	< 0.0010	< 0.0010	0.0040	< 0.0010	0.0035
Mainland East - C-36X Well Site - Surficial Sediment																													
C36-10-1-3	05-Aug-2016	**W-CAT-1**	0.038	< 0.00060	0.0018	0.23	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.0032	0.00021	7.5	0.00023	< 0.020	0.36	0.00031	0.0058	0.17	0.00035	7.3	< 0.00010	0.30	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0077
	12-Aug-2017		0.050	< 0.00060	0.0022	0.24	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.0042	0.00041	12	< 0.00020	< 0.020	0.38	0.00043	0.0072	0.30	0.00040	7.3	< 0.00010	0.33	< 0.00020	< 0.0010	0.0012	< 0.00010	< 0.0010	0.0086
	12-Jul-2018		0.043	< 0.00060	0.0019	0.24	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.0038	0.00042	14	< 0.00020	< 0.020	0.37	0.00044	0.0069	0.12	0.00037	6.6	< 0.00010	0.33	< 0.00020	< 0.0010	0.0015	< 0.00010	< 0.0010	0.0055
	15-Jul-2019		0.041	< 0.00060	0.0017	0.24	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.0034	0.00067	12	< 0.00020	< 0.020	0.34	0.00048	0.0070	0.25	0.00038	6.2	< 0.00010	0.30	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0075
C36-10-2-3	05-Aug-2016	**W-CAT-1**	0.0038	< 0.00060	0.0023	0.50	< 0.0010	0.28	0.000036	< 0.0010	0.0025	0.0011	5.7	< 0.00020	0.045	1.4	0.00031	0.013	< 0.10	0.00026	4.4	< 0.00010	0.72	< 0.00020	< 0.0010	< 0.0010	0.022	< 0.0010	0.0067
(Duplicate)	05-Aug-2016		0.0042	< 0.00060	0.0024	0.50	< 0.0010	0.28	0.000038	< 0.0010	0.0025	0.00072	5.7	< 0.00020	0.042	1.4	0.00029	0.014	< 0.10	0.00033	4.5	< 0.00010	0.73	< 0.00020	< 0.0010	< 0.0010	0.023	< 0.0010	0.0073
	12-Aug-2017		0.0034	< 0.00060	0.0027	0.61	< 0.0010	0.32	0.00017	< 0.0010	0.0025	0.0019	9.9	< 0.00020	0.031	0.39	0.00047	0.012	< 0.10	0.00062	4.0	< 0.00010	0.79	< 0.00020	< 0.0010	< 0.0010	0.017	< 0.0010	0.0067
(Duplicate)	12-Aug-2017		0.0036	< 0.00060	0.0027	0.62	< 0.0010	0.32	0.00017	< 0.0010	0.0024	0.0018	9.7	< 0.00020	0.032	0.39	0.00051	0.012	< 0.10	0.00061	4.0	< 0.00010	0.79	< 0.00020	< 0.0010	< 0.0010	0.017	< 0.0010	0.0033
	12-Jul-2018		0.0043	< 0.00060	0.0034	0.48	< 0.0010	0.38	0.000029	< 0.0010	0.0020	0.0010	14	< 0.00020	0.031	0.24	0.00033	0.0082	< 0.10	0.00056	4.0	< 0.00010	0.72	< 0.00020	< 0.0010	< 0.0010	0.018	< 0.0010	< 0.0030
(Duplicate)	12-Jul-2018		0.0076	< 0.00060	0.0032	0.49	< 0.0010	0.38	0.000031	< 0.0010	0.0020	0.0011	14	< 0.00020	0.025	0.25	0.00031	0.0078	< 0.10	0.00057	4.1	< 0.00010	0.73	< 0.00020	< 0.0010	< 0.0010	0.018	< 0.0010	0.0033
	15-Jul-2019		0.0038	< 0.00060	0.00046	1.1	< 0.0010	0.35	0.00069	< 0.0010	0.0023	0.0042	2.5	< 0.00020	0.030	0.37	0.00052	0.012	< 0.10	0.00058	4.2	< 0.00010	0.79	< 0.00020	< 0.0010	< 0.0010	0.0089	< 0.0010	0.0059
(Duplicate)	15-Jul-2019		< 0.0030	< 0.00060	0.00042	1.1	< 0.0010	0.35	0.00067	< 0.0010	0.0021	0.0029	2.5	< 0.00020	0.030	0.38	0.00044	0.012	< 0.10	0.00061	4.2	< 0.00010	0.80	< 0.00020	< 0.0010	< 0.0010	0.0089	< 0.0010	0.0043
C36-10-3-3	05-Aug-2016	**W-CAT-1**	0.0045	< 0.00060	0.0051	1.3	< 0.0010	0.082	< 0.000020	< 0.0010	0.0014	0.00043	8.5	< 0.00020	0.043	0.36	0.00059	0.0060	< 0.10	0.00070	7.4	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.0040	0.0019	0.0066
	12-Aug-2017		0.0063	< 0.00060	0.0051	2.0	< 0.0010	0.091	< 0.000020	< 0.0010	0.00094	0.00032	16	< 0.00020	0.038	0.27	0.00032	0.0016	0.62	0.00098	7.9	< 0.00010	1.2	< 0.00020	< 0.0010	0.0015	0.0013	0.0022	0.0062
	12-Jul-2018		0.57	< 0.00060	0.0040	1.4	< 0.0010	0.074	0.00022	0.0011	0.0018	0.0051	12	0.0038	0.036	0.33	0.00031	0.0066	0.45	0.00091	7.2	< 0.00010	1.1	< 0.00020	< 0.0010	0.0040	0.0061	0.0046	0.022
	15-Jul-2019		< 0.0030	< 0.00060	0.0024	0.59	< 0.0010	0.064	0.000081	< 0.0010	0.0018	0.0016	0.090	< 0.00020	0.037	0.18	0.00072	0.0083	< 0.10	0.00069	5.0	< 0.00010	0.99	< 0.00020	< 0.0010	< 0.0010	0.015	0.0015	0.0044
Mainland East - C-36X Well Site - Surface Water																													
C36 SW01	05-Aug-2016	**W-CAT-6**	---	---	---	---	---	---	---	---	---	---	0.75	---	---	0.60	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Aug-2017		---	---	---	---	---	---	---	---	---	---	0.38	---	---	0.63	---	---	---	---	---	---	---	---	---	---	---	---	---
Mainland East - B-38X Well Site - Surface Water																													
B38 03-38-5	04-Aug-2016	**W-CAT-1**	0.0036	< 0.00060	0.0086	2.5	< 0.0010	0.098	< 0.000020	< 0.0010	0.0017	0.00050	7.1	< 0.00020	< 0.020	0.37	0.0054	0.0055	< 0.10	0.00046	5.8	< 0.00010	0.90	< 0.00020	< 0.0010	< 0.0010	0.00029	< 0.0010	0.0045
	13-Aug-2017		0.015	< 0.00060	0.014	1.5	< 0.0010	0.11	< 0.000020	< 0.0010	0.0012	0.00021	14	< 0.00020	< 0.020	0.37	0.0043	0.0026	< 0.10	0.00045	5.9	< 0.00010	0.91	< 0.00020	< 0.0010	< 0.0010	0.00093	< 0.0010	0.019
	18-Jul-2019		< 0.0030	< 0.00060	0.014	2.7	< 0.0010	0.10	< 0.000020	< 0.0010	0.0010	0.00057	15	< 0.00020	< 0.020	0.34	0.0028	0.0019	< 0.10	0.00043	5.3	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	0.00018	< 0.0010	0.010
B38 08-2-4	03-Aug-2016	**W-CAT-1**	0.0085	< 0.00060	0.0064	1.6	< 0.0010	0.036	0.000022	< 0.0010	0.014	0.00062	41	0.00063	< 0.020	2.7	0.00089	0.024	< 0.10	0.0013	7.4	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.0032	< 0.0010	0.011
B38-10-1-5	04-Aug-2016	**W-CAT-5**	0.010	< 0.00060	0.081	1.7	< 0.0010	0.076	< 0.000020	0.0011	0.0011	0.00039	25	< 0.00020	< 0.020	0.18	0.0017	0.0026	0.26	0.00077	6.4	< 0.00010	1.0	< 0.00020	< 0.0010	0.0011	< 0.00010	0.0028	< 0.0030
(Duplicate)	04-Aug-2016		0.011	< 0.00060	0.082	1.7	< 0.0010	0.075	< 0.000020	0.0012	0.0011	0.00039	25	0.00025	< 0.020	0.18	0.0016	0.0028	0.26	0.00084	6.5	< 0.00010	1.0	< 0.00020	< 0.0010	0.0014	0.00010	0.0030	0.0063
	18-Aug-2017		0.010	< 0.00060	0.068	1.8	< 0.0010	0.074	< 0.000020	0.0012	0.0036	0.0013	28	< 0.00020	< 0.020	0.47	0.0023	0.010	0.31	0.00096	6.1	< 0.00010	1.2	< 0.00020	< 0.0010	0.0015	0.00097	0.0033	0.0093
	12-Jul-2018		0.012	< 0.00060	0.049	1.4	< 0.0010	0.074	< 0.000020	0.0012	0.0036	0.00042	30	< 0.00020	< 0.020	1.0	0.0014	0.0094	0.28	0.00080	6.2	< 0.00010	1.1	< 0.00020	< 0.0010	0.0013	0.00067	0.0028	< 0.0030
	13-Jul-2019		0.015	< 0.00060	0.075	1.8	< 0.0010	0.062	< 0.000020	0.0012	0.0033	0.00067	30	< 0.00020	< 0.020	0.72	0.0014	0.0087	0.68	0.00061	5.7	< 0.00010	1.1	< 0.00020	< 0.0010	0.0018	0.00082	0.0037	0.0045
B38-10-2-5	04-Aug-2016	**W-CAT-5**	0.010	< 0.00060	0.019	1.7	< 0.0010	0.091	0.000025	0.0013	0.0014	0.00043	13	0.00024	< 0.020	0.16	0.00063	0.0038	0.16	0.00075	8.6	< 0.00010	1.2	< 0.00020	< 0.0010	0.0021	0.00013	0.0032	0.0095
(Duplicate)	04-Aug-2016		0.010	< 0.00060	0.019	1.7	< 0.0010	0.090	0.000026	0.0014	0.0014	0.00066	13	0.00023	< 0.020	0.16	0.00064	0.0040	0.15	0.00079	8.6	< 0.00010	1.1	< 0.00020	< 0.0010	0.0030	0.00012	0.0033	0.014
	18-Aug-2017		0.0079	< 0.00060	0.015	1.6	< 0.0010	0.090	< 0.000020	0.0012	0.00099	0.00085	13	< 0.00020	< 0.020	0.12	0.00037	0.0023	0.70	0.00081	7.7	< 0.00010	1.2	< 0.00020	< 0.0010	0.0015	< 0.00010	0.0030	0.0093
(Duplicate)	18-Aug-2017		0.0076	< 0.00060	0.015	1.7	< 0.0010	0.088	< 0.000020	0.0012	0.00094	< 0.00020	13	< 0.00020	< 0.020	0.12	0.00040	0.0023	0.67	0.00095	7.8	< 0.00010	1.2	< 0.00020	< 0.0010	0.0016	< 0.00010	0.0031	0.0075
	12-Jul-2018		0.0084	< 0.00060	0.014	1.6	< 0.0010	0.084	< 0.000020	0.0011	0.0010	0.00066	13	< 0.00020	< 0.020	0.18	0.00045	0.0026	0.47	0.00056	7.5	< 0.00010	1.1	< 0.00020	< 0.0010	0.0018	0.00014	0.0030	0.0057
(Duplicate)	12-Jul-2018		0.0082	< 0.00060	0.015	1.7	< 0.0010	0.087	< 0.000020	0.0011	0.0011	0.00048	14	< 0.00020	< 0.020	0.20	0.00046	0.0027	0.38	0.00065	8.0	< 0.00010	1.2	< 0.00020	< 0.0010	0.0024	0.00013	0.0033	0.0034
	14-Jul-2019		0.0091	< 0.00060	0.016	1.9	< 0.0010	0.078	< 0.000020	0.0014	0.0014	0.00045	16	< 0.00020	< 0.020	0.26	0.00061	0.0029	0.78	0.00078	8.1	< 0.00010	1.2	< 0.00020	< 0.0010	0.0024	0.00023	0.0033	0.0060
(Duplicate)	14-Jul-2019		0.0088	< 0.00060	0.015	1.9	< 0.0010	0.080	< 0.000020	0.0013	0.0013	0.00079	16	< 0.00020	< 0.020	0.26	0.00059	0.0029	0.78	0.00068	8.1	< 0.00010	1.2	< 0.00020	< 0.0010	0.0018	0.00024	0.0033	0.0061
B38-16-1-3	12-Aug-2017	**W-CAT-5**	0.011	< 0.00060	0.0080	0.81	< 0.0010	0.061	0.000039	< 0.0010	0.0089	0.0018	19	0.00025	< 0.020	2.6	0.0026	0.013	< 0.10	0.00049	8.8	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.0018	0.0010	0.012
	13-Jul-2018		0.012	< 0.00060	0.012	1.3	< 0.0010	0.044	0.000034	< 0.0010	0.0048	0.0019	29	0.00025	< 0.020	2.2	0.0014	0.0098	< 0.10	0.00046	7.7	< 0.00010	1.2	< 0.00020	< 0.0010	0.0011	0.0024	0.0026	0.0074
	13-Jul-2019		0.014	< 0.00060	0.0096	1.4	< 0.0010	0.036	0.000030	0.0012	0.0041	0.0035	25	0.00027	< 0.020	1.7	0.0011	0.0082	< 0.10	0.00030	7.6	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.0017	0.0021	0.055

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
Mainland East - B-38X Remediation Systems - Inlets																													
B38-N-INLET	06-Jul-2016	**W-CAT-5**	0.017	< 0.00060	0.0086	0.28	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.00071	< 0.00020	82	0.00050	< 0.020	1.3	0.024	0.020	0.16	0.0017	7.2	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	0.013	0.0040	0.010
	03-Sep-2019		0.015	< 0.00060	0.0097	0.56	< 0.0010	0.037	< 0.000020	< 0.0010	< 0.00030	0.00044	60	< 0.00020	< 0.020	0.61	0.010	0.0036	0.16	0.00097	6.9	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	0.0087	0.0038	0.0091
FTA-N-INLET	06-Jul-2016	**W-CAT-5**	0.0084	< 0.00060	0.0049	0.61	< 0.0010	0.038	< 0.000020	< 0.0010	0.00043	< 0.00020	56	< 0.00020	< 0.020	1.3	0.014	0.0062	0.11	0.0015	6.1	< 0.00010	1.7	< 0.00020	< 0.0010	< 0.0010	0.032	0.0029	< 0.0030
	03-Sep-2019		0.0055	< 0.00060	0.0051	0.75	< 0.0010	0.051	< 0.000020	< 0.0010	0.00044	0.00030	43	< 0.00020	< 0.020	0.72	0.0084	0.0029	< 0.10	0.00086	6.1	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.016	0.0015	0.0053
LT7-Inlet	06-Jul-2016	**W-CAT-5**	< 0.0030	< 0.00060	0.0079	0.75	< 0.0010	0.084	< 0.000020	< 0.0010	< 0.00030	< 0.00020	18	0.0015	< 0.020	0.68	0.012	0.0035	< 0.10	0.0014	5.8	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	0.014	< 0.0010	< 0.0030
	03-Sep-2019		< 0.0030	< 0.00060	0.0041	1.1	< 0.0010	0.10	< 0.000020	< 0.0010	< 0.00030	0.00027	17	< 0.00020	< 0.020	0.48	0.00086	0.00081	0.16	0.00050	6.0	< 0.00010	1.2	< 0.00020	< 0.0010	< 0.0010	0.00095	< 0.0010	0.0069
Mainland East - Fire Training Area - Surficial Sediment																													
FTA 99-3-4	04-Aug-2016	**W-CAT-1**	0.019	< 0.00060	0.0066	0.75	< 0.0010	0.036	0.00028	< 0.0010	0.0041	0.00067	34	0.00031	< 0.020	2.6	0.00038	0.011	< 0.10	0.0012	8.1	< 0.00010	0.96	< 0.00020	< 0.0010	< 0.0010	0.0026	0.0016	0.011
(Duplicate)	04-Aug-2016		0.019	< 0.00060	0.0066	0.76	< 0.0010	0.037	0.00028	< 0.0010	0.0040	0.00050	34	0.00031	< 0.020	2.7	0.00031	0.011	< 0.10	0.0012	8.2	< 0.00010	0.97	< 0.00020	< 0.0010	< 0.0010	0.0027	0.0015	0.0071
	10-Sep-2016		0.0048	< 0.00060	0.0026	1.1	< 0.0010	0.047	0.000089	< 0.0010	0.0016	< 0.00020	7.2	< 0.00020	< 0.020	2.6	0.00027	0.0052	< 0.10	0.0011	8.0	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.0017	< 0.0010	< 0.0030
	17-Aug-2017		0.030	< 0.00060	0.014	1.3	< 0.0010	0.045	< 0.000020	< 0.0010	0.0018	0.00074	54	0.00036	< 0.020	2.4	0.00035	0.0053	< 0.10	0.0020	7.1	< 0.00010	1.2	< 0.00020	< 0.0010	0.0011	0.0023	0.0017	0.0077
Reduced Crude Flare Pit - Surficial Sediments																													
RCF 03-1-5	03-Aug-2016	**W-CAT-1**	0.0041	< 0.00060	0.00055	0.049	< 0.0010	0.086	< 0.000020	< 0.0010	0.00065	0.00039	0.38	< 0.00020	< 0.020	0.54	0.00027	0.0069	< 0.10	0.00089	3.4	< 0.00010	0.46	< 0.00020	< 0.0010	< 0.0010	0.0060	< 0.0010	0.0053
(Duplicate)	03-Aug-2016		0.0038	< 0.00060	0.00043	0.063	< 0.0010	0.060	< 0.000020	< 0.0010	0.00065	0.00021	< 0.060	< 0.00020	< 0.020	0.11	0.00029	0.0065	< 0.10	0.0016	5.1	< 0.00010	0.73	< 0.00020	< 0.0010	< 0.0010	0.0058	< 0.0010	< 0.0030
	21-Aug-2017		0.026	< 0.00060	0.00089	0.064	< 0.0010	0.096	0.00011	< 0.0010	0.00082	0.0012	0.27	< 0.00020	0.026	0.62	0.00033	0.0080	< 0.10	0.00027	3.9	< 0.00010	0.73	< 0.00020	< 0.0010	< 0.0010	0.0094	< 0.0010	0.011
(Duplicate)	21-Aug-2017		0.0044	< 0.00060	0.00057	0.057	< 0.0010	0.094	0.000081	< 0.0010	0.00078	0.0014	0.11	< 0.00020	0.027	0.62	0.00029	0.0081	< 0.10	0.00022	3.9	< 0.00010	0.73	< 0.00020	< 0.0010	< 0.0010	0.0089	< 0.0010	0.011
	21-Jul-2018		0.012	< 0.00060	0.00045	0.053	< 0.0010	0.091	0.000031	< 0.0010	0.00064	0.00097	0.23	< 0.00020	0.029	0.26	0.00033	0.0079	< 0.10	0.00022	3.7	< 0.00010	0.72	< 0.00020	< 0.0010	< 0.0010	0.014	< 0.0010	0.0057
(Duplicate)	21-Jul-2018		< 0.0030	0.00083	0.0057	0.050	< 0.0010	0.090	0.0016	< 0.0010	0.00082	0.0011	0.21	0.00028	0.028	0.26	0.00076	0.0072	< 0.10	0.00023	3.7	0.00017	0.74	< 0.00020	0.0011	0.036	0.014	< 0.0010	0.0062
	12-Jul-2019		0.0065	< 0.00060	0.00039	0.048	< 0.0010	0.076	< 0.000020	< 0.0010	0.00053	0.00076	0.35	< 0.00020	0.023	0.21	0.00026	0.0047	< 0.10	< 0.00020	3.4	< 0.00010	0.65	< 0.00020	< 0.0010	< 0.0010	0.015	< 0.0010	0.0082
RCF 98-3-4	03-Aug-2016	**W-CAT-1**	0.0058	< 0.00060	0.00058	0.064	< 0.0010	0.061	0.000051	< 0.0010	0.00062	0.0019	< 0.060	< 0.00020	< 0.020	0.11	0.00081	0.0087	< 0.10	0.00025	5.2	< 0.00010	0.73	< 0.00020	< 0.0010	< 0.0010	0.0089	< 0.0010	0.015
	21-Aug-2017		0.0048	< 0.00060	0.0033	0.056	< 0.0010	0.043	0.000024	< 0.0010	0.0015	0.0013	6.1	< 0.00020	< 0.020	0.17	0.00045	0.0044	< 0.10	0.00036	5.2	< 0.00010	0.58	< 0.00020	0.0018	< 0.0010	0.0088	< 0.0010	0.0069
	21-Jul-2018		< 0.0030	< 0.00060	0.00068	0.057	< 0.0010	0.042	0.000048	< 0.0010	0.0045	0.0011	0.55	< 0.00020	< 0.020	0.91	0.00043	0.0050	< 0.10	< 0.00020	4.8	< 0.00010	0.61	< 0.00020	< 0.0010	< 0.0010	0.012	< 0.0010	0.011
	12-Jul-2019		0.0081	< 0.00060	0.0011	0.056	< 0.0010	0.036	< 0.000020	< 0.0010	0.0017	0.00071	2.2	< 0.00020	0.021	0.17	0.00044	0.0044	< 0.10	< 0.00020	4.5	< 0.00010	0.71	< 0.00020	< 0.0010	< 0.0010	0.013	< 0.0010	0.0058
(Duplicate)	12-Jul-2019		0.010	< 0.00060	0.0013	0.051	< 0.0010	0.035	< 0.000020	< 0.0010	0.0017	0.00075	2.2	< 0.00020	< 0.020	0.17	0.00036	0.0041	< 0.10	< 0.00020	4.4	< 0.00010	0.71	< 0.00020	< 0.0010	< 0.0010	0.013	< 0.0010	0.074
Mainland East - Mainland Tank Farm - Surficial Sediment																													
MTF 98-4-5	06-Aug-2016	**W-CAT-1**	0.0037	< 0.00060	0.0026	2.7	< 0.0010	0.16	< 0.000020	< 0.0010	< 0.00030	0.00034	17	< 0.00020	< 0.020	0.31	0.00049	0.0014	< 0.10	0.00033	6.6	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0031
(Duplicate)	06-Aug-2016		0.0038	< 0.00060	0.0026	2.7	< 0.0010	0.16	< 0.000020	< 0.0010	< 0.00030	0.00027	17	< 0.00020	< 0.020	0.31	0.00049	0.00099	< 0.10	0.00030	6.5	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030
	17-Aug-2017		< 0.0030	< 0.00060	0.0013	1.9	< 0.0010	0.16	< 0.000020	< 0.0010	< 0.00030	< 0.00020	12	< 0.00020	< 0.020	0.35	0.00038	0.00082	< 0.10	0.00034	6.2	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0056
(Duplicate)	17-Aug-2017		< 0.0030	< 0.00060	0.0013	1.9	< 0.0010	0.16	< 0.000020	< 0.0010	< 0.00030	0.00047	12	< 0.00020	< 0.020	0.34	0.00036	0.00096	< 0.10	0.00043	6.2	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0063
MTF 98-5-4	06-Aug-2016	**W-CAT-1**	0.0045	< 0.00060	0.013	0.37	< 0.0010	0.053	< 0.000020	< 0.0010	0.00041	< 0.00020	20	< 0.00020	< 0.020	5.9	0.0021	0.0032	< 0.10	0.00048	6.7	< 0.00010	0.60	< 0.00020	< 0.0010	< 0.0010	0.00058	< 0.0010	< 0.0030
	17-Aug-2017		0.076	< 0.00060	0.011	0.40	< 0.0010	0.029	< 0.000020	< 0.0010	0.0019	0.00046	19	0.00029	< 0.020	3.0	0.0086	0.0052	< 0.10	0.00046	4.6	< 0.00010	0.52	< 0.00020	< 0.0010	0.0058	0.0047	0.0022	0.0061
	16-Jul-2018		0.062	< 0.00060	0.013	0.33	< 0.0010	0.039	< 0.000020	< 0.0010	0.0013	0.00073	21	0.00039	< 0.020	4.5	0.0020	0.0028	< 0.10	0.00059	5.4	< 0.00010	0.54	< 0.00020	< 0.0010	0.0015	0.0010	< 0.0010	0.0047
	19-Jun-2019		0.0079	< 0.00060	0.0033	0.36	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.0022	0.00082	17	< 0.00020	< 0.020	3.6	0.0070	0.0075	< 0.10	0.00049	4.0	< 0.00010	0.42	< 0.00020	< 0.0010	< 0.0010	0.0026	< 0.0010	< 0.0030
TF 02-10-5	06-Aug-2016	**W-CAT-1**	0.0043	< 0.00060	0.012	0.83	< 0.0010	0.033	0.000034	< 0.0010	0.0047	0.0010	39	0.0036	< 0.020	2.9	0.0035	0.0083	< 0.10	0.00090	3.6	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.0034	< 0.0010	0.011
	17-Aug-2017		0.0040	< 0.00060	0.010	0.87	< 0.0010	0.083	0.000028	< 0.0010	0.010	0.00069	22	0.010	< 0.020	4.0	0.00098	0.021	< 0.10	0.0023	4.4	< 0.00010	1.7	< 0.00020	< 0.0010	< 0.0010	0.0096	< 0.0010	0.0060
	16-Jul-2018		1.9	0.00067	0.018	1.0	< 0.0010	0.047	0.00030	0.0018	0.012	0.0040	59	0.017	< 0.020	4.4	0.00034	0.029	0.30	0.0014	5.5	< 0.00010	1.6	< 0.00020	< 0.0010	0.010	0.0026	0.0069	0.067
	19-Jun-2019		0.0032	< 0.00060	0.0032	0.61	< 0.0010	0.14	0.000073	< 0.0010	0.0063	0.0015	0.30	0.0062	< 0.020	3.2	0.00036	0.012	< 0.10	0.0013	3.5	< 0.00010	0.93	< 0.00020	< 0.0010	< 0.0010	0.0038	< 0.0010	0.012
TF 02-7-3	17-Aug-2017	**W-CAT-1**	0.0067	0.0012	0.018	2.8	< 0.0010	0.057	< 0.000020	< 0.0010	0.0090	0.00053	45	0.019	< 0.020	0.87	0.0030	0.024	< 0.10	0.0072	6.3	< 0.00010	1.8	< 0.00020	< 0.0010	< 0.0010	0.010	< 0.0010	0.0091
	16-Jul-2018		0.0085	0.0010	0.024	2.8	< 0.0010	0.051	< 0.000020	< 0.0010	0.0095	0.00097	76	0.010	< 0.020	0.82	0.0039	0.018	< 0.10	0.0066	6.7	< 0.00010	2.0	< 0.00020	< 0.0010	< 0.0010	0.0028	0.0014	0.0099
	18-Jun-2019		0.0051	0.00098	0.016	2.9	< 0.0010	0.045	0.000025	< 0.0010	0.0070	0.0015	35	0.023	< 0.020	0.66	0.0022	0.020	< 0.10	0.0059	6.5	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0048	< 0.0010	0.013
TF 02-9-3	17-Aug-2017	**W-CAT-1**	0.058	< 0.00060	0.014	2.0	< 0.0010	0.14	< 0.000020	< 0.0010	0.00072	0.00037	25	0.00054	< 0.020	1.0	0.0040	0.0021	< 0.10	0.0013	6.7	< 0.00010	1.2	< 0.00020	< 0.0010	0.0012	0.0010	< 0.0010	0.0067
	16-Jul-2018		0.018	< 0.00060	0.014	1.9	< 0.0010	0.12	< 0.000020	< 0.0010	0.00068	0.00061	24	< 0.00020	< 0.020	0.93	0.0047	0.0017	< 0.10	0.00082	6.2	< 0.00010	1.2	< 0.00020	< 0.0010	< 0.0010	0.00073	< 0.0010	0.0036
	18-Jun-2019		0.019	< 0.00060	0.024	1.4	< 0.0010	0.044	< 0.000020	< 0.0010	0.00088	0.00083	28	0.00043	< 0.020	2.4	0.014	0.0044	< 0.10	0.00093	5.6	< 0.00010	0.72	< 0.00020	< 0.0010	< 0.0010	0.0040	0.0015	0.0063

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
TF 03-11-4	06-Aug-2016	**W-CAT-1**	0.0037	< 0.00060	0.0056	2.7	< 0.0010	0.21	< 0.000020	< 0.0010	< 0.00030	0.00044	6.5	< 0.00020	< 0.020	0.082	0.00069	0.0014	0.14	0.00037	7.0	< 0.00010	0.69	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0039
	17-Aug-2017		0.011	< 0.00060	0.0067	2.8	< 0.0010	0.19	< 0.000020	< 0.0010	0.00038	0.00039	7.8	< 0.00020	< 0.020	0.12	0.0019	0.00062	0.14	0.00039	6.5	< 0.00010	0.70	< 0.00020	0.0013	0.0024	0.00051	0.0015	0.0039
	16-Jul-2018		0.0035	< 0.00060	0.0081	2.8	< 0.0010	0.20	< 0.000020	< 0.0010	0.00043	0.0011	8.2	< 0.00020	< 0.020	0.12	0.0021	0.0011	0.22	0.00047	6.3	< 0.00010	0.72	< 0.00020	< 0.0010	< 0.0010	0.00040	< 0.0010	0.0060
	19-Jun-2019		0.0032	< 0.00060	0.0099	2.9	< 0.0010	0.18	< 0.000020	< 0.0010	0.00038	0.00052	9.4	< 0.00020	0.021	0.11	0.0017	0.0015	0.19	0.00039	6.3	< 0.00010	0.66	< 0.00020	< 0.0010	< 0.0010	0.00012	< 0.0010	0.0035
Mainland East - B-42X Well Site - Surficial Sediment																													
B42-17-1-5	15-Oct-2017	**W-CAT-1**	---	---	---	---	---	---	---	---	---	---	0.53	---	---	0.086	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2018		< 0.0030	< 0.00060	0.021	4.8	< 0.0010	0.17	< 0.000020	< 0.0010	0.0013	0.00050	2.7	< 0.00020	< 0.020	0.15	0.012	0.0041	< 0.10	0.00040	4.1	< 0.00010	1.9	< 0.00020	< 0.0010	< 0.0010	0.00047	< 0.0010	< 0.0030
	15-Jul-2019		< 0.0030	< 0.00060	0.021	4.8	< 0.0010	0.18	< 0.000020	< 0.0010	0.00098	0.0027	3.1	< 0.00020	< 0.020	0.12	0.015	0.0025	< 0.10	0.00040	4.1	< 0.00010	2.0	< 0.00020	< 0.0010	< 0.0010	0.00029	< 0.0010	0.0043
B42-17-2-4	15-Oct-2017	**W-CAT-1**	---	---	---	---	---	---	---	---	---	---	0.50	---	---	0.19	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2018		0.0067	< 0.00060	0.042	0.91	< 0.0010	0.13	0.00024	< 0.0010	0.0022	0.00056	3.0	< 0.00020	< 0.020	0.42	0.014	0.0054	< 0.10	0.00051	4.7	< 0.00010	0.67	< 0.00020	< 0.0010	0.0047	0.00083	0.0021	0.0034
	14-Jul-2019		0.0056	< 0.00060	0.079	1.4	< 0.0010	0.11	< 0.000020	< 0.0010	0.0014	0.0017	6.2	< 0.00020	< 0.020	0.38	0.011	0.0045	< 0.10	0.00053	4.7	< 0.00010	0.90	< 0.00020	< 0.0010	< 0.0010	0.00036	0.0019	0.0044
B42-17-3-4	15-Oct-2017	**W-CAT-1**	---	---	---	---	---	---	---	---	---	---	2.2	---	---	0.27	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2018		0.0079	< 0.00060	0.057	1.1	< 0.0010	0.11	0.000029	< 0.0010	0.0012	0.00041	3.6	< 0.00020	< 0.020	0.13	0.040	0.0032	< 0.10	0.00049	3.2	< 0.00010	0.75	< 0.00020	< 0.0010	0.0011	0.00059	0.0012	< 0.0030
Mainland East - Former Refinery - Surficial Sediments																													
NWR 93-10-6	15-Aug-2016	**W-CAT-4**	0.026	0.00079	0.030	0.99	< 0.0010	0.047	0.000034	< 0.0010	0.00054	0.0011	24	0.00034	< 0.020	0.53	0.021	0.0059	< 0.10	0.0013	6.3	< 0.00010	0.90	< 0.00020	< 0.0010	< 0.0010	0.0033	0.0037	0.0095
RB-OBS-46	15-Aug-2016	**W-CAT-4**	0.091	0.00073	0.066	3.2	< 0.0010	0.025	0.000035	0.0046	0.0086	0.00083	120	0.0041	< 0.020	1.3	0.0054	0.022	< 0.10	0.0024	9.5	< 0.00010	0.61	< 0.00020	< 0.0010	0.0044	0.00023	0.016	0.019
	11-Apr-2017		---	---	---	---	---	---	---	---	---	---	0.63	---	---	1.5	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-May-2017		---	---	---	---	---	---	---	---	---	---	120	---	---	1.3	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jun-2017		---	---	---	---	---	---	---	---	---	---	110	---	---	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		---	---	---	---	---	---	---	---	---	---	28	---	---	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	120	---	---	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Sep-2017		---	---	---	---	---	---	---	---	---	---	130	---	---	1.3	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	110	---	---	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		---	---	---	---	---	---	---	---	---	---	23	---	---	1.4	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Oct-2019		0.24	0.00066	0.061	3.3	< 0.0010	0.027	0.000047	0.0051	0.0085	0.0012	120	0.0046	< 0.020	1.4	0.0042	0.016	< 0.10	0.0014	9.9	< 0.00010	0.57	< 0.00020	< 0.0010	0.0062	0.00039	0.016	0.0082
RB-OBS-48	15-Aug-2016	**W-CAT-4**	0.028	< 0.00060	0.0065	0.11	< 0.0010	0.035	0.000023	< 0.0010	0.0022	0.00076	19	< 0.00020	< 0.020	1.5	0.0015	0.0077	< 0.10	0.0017	5.4	< 0.00010	0.61	< 0.00020	< 0.0010	< 0.0010	0.0017	0.0018	0.0079
RB-OBS-47	15-Aug-2016	**W-CAT-4**	0.019	< 0.00060	0.013	0.47	< 0.0010	0.036	0.000053	< 0.0010	0.0088	0.0011	23	0.0020	< 0.020	3.3	0.0042	0.025	< 0.10	0.0022	5.4	< 0.00010	0.97	< 0.00020	< 0.0010	< 0.0010	0.0046	0.0024	0.012
	10-May-2017		---	---	---	---	---	---	---	---	---	---	11	---	---	1.6	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		---	---	---	---	---	---	---	---	---	---	3.0	---	---	7.5	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	15-Jul-2017		---	---	---	---	---	---	---	---	---	---	11	---	---	7.6	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	49	---	---	4.2	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Sep-2017		---	---	---	---	---	---	---	---	---	---	61	---	---	5.7	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	64	---	---	4.6	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-13-3-2.4	15-Aug-2016	**W-CAT-4**	0.0088	< 0.00060	0.013	0.91	< 0.0010	0.56	0.000062	< 0.0010	0.0056	0.0010	9.5	< 0.00020	0.057	1.2	0.0053	0.018	< 0.10	0.00061	6.1	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	0.0053	< 0.0010	4.0 [#6]
RB-13-6-2.4	15-Aug-2016	**W-CAT-4**	0.013	< 0.00060	0.017	0.66	< 0.0010	0.30	0.000036	< 0.0010	0.0057	0.00064	12	0.00023	0.083	0.80	0.013	0.011	< 0.10	0.00080	8.1	< 0.00010	0.59	< 0.00020	< 0.0010	< 0.0010	0.0049	0.0015	2.3 [#6]
RB-MW17-01	16-Jun-2017	**W-CAT-4**	---	---	---	---	---	---	---	---	---	---	66	---	---	2.6	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		---	---	---	---	---	---	---	---	---	---	0.50	---	---	2.4	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	89	---	---	2.6	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		---	---	---	---	---	---	---	---	---	---	95	---	---	2.5	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	96	---	---	2.3	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		---	---	---	---	---	---	---	---	---	---	33	---	---	2.3	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Oct-2019		0.012	< 0.00060	0.014	1.8	< 0.0010	0.026	0.000038	0.0015	0.0022	0.0031	32	0.00046	< 0.020	1.6	0.0020	0.0074	< 0.10	0.00046	7.1	< 0.00010	0.84	< 0.00020	< 0.0010	< 0.0010	0.0011	0.0016	0.017

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
RB-MW17-02	16-Jun-2017	**W-CAT-4**	---	---	---	---	---	---	---	---	---	---	11	---	---	2.3	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		---	---	---	---	---	---	---	---	---	---	1.2	---	---	2.4	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	20	---	---	2.1	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		---	---	---	---	---	---	---	---	---	---	**28**	---	---	2.2	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	**27**	---	---	2.1	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		---	---	---	---	---	---	---	---	---	---	23	---	---	2.3	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Oct-2019		0.015	0.0020	**0.22**	1.3	< 0.0010	0.065	0.000049	< 0.0010	0.0029	0.00053	19	0.0013	< 0.020	1.0	0.00087	0.0077	< 0.10	0.00059	4.1	< 0.00010	0.62	< 0.00020	< 0.0010	< 0.0010	0.00084	0.0027	0.0095
RB-MW17-03	16-Jun-2017	**W-CAT-4**	---	---	---	---	---	---	---	---	---	---	7.9	---	---	1.7	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2017		---	---	---	---	---	---	---	---	---	---	0.92	---	---	1.4	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	24	---	---	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		---	---	---	---	---	---	---	---	---	---	**26**	---	---	1.2	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	**29**	---	---	0.80	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		---	---	---	---	---	---	---	---	---	---	**29**	---	---	1.2	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Oct-2019		0.030	0.0014	**0.14**	0.52	< 0.0010	0.025	0.000023	0.0010	0.0013	0.0012	7.8	0.0021	< 0.020	0.40	0.00096	0.0056	< 0.10	0.00072	2.9	< 0.00010	0.36	< 0.00020	< 0.0010	< 0.0010	0.00058	0.0037	0.0085
RB-MW17-04	15-Jun-2017	**W-CAT-4**	---	---	---	---	---	---	---	---	---	---	2.6	---	---	1.2	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		---	---	---	---	---	---	---	---	---	---	0.30	---	---	0.97	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	15-Jul-2017		---	---	---	---	---	---	---	---	---	---	0.28	---	---	0.94	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	0.066	---	---	0.23	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		---	---	---	---	---	---	---	---	---	---	5.8	---	---	0.50	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	14-Sep-2017		---	---	---	---	---	---	---	---	---	---	5.8	---	---	0.50	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	8.5	---	---	0.52	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		---	---	---	---	---	---	---	---	---	---	8.8	---	---	0.92	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-05	15-Jul-2017	**W-CAT-4**	---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	0.27	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	0.93	---	---	0.093	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		---	---	---	---	---	---	---	---	---	---	18	---	---	1.2	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-06	16-Jun-2017	**W-CAT-4**	---	---	---	---	---	---	---	---	---	---	0.16	---	---	0.90	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		---	---	---	---	---	---	---	---	---	---	0.19	---	---	1.8	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	**32**	---	---	2.4	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		---	---	---	---	---	---	---	---	---	---	**78**	---	---	1.9	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	**61**	---	---	1.7	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		---	---	---	---	---	---	---	---	---	---	**76**	---	---	2.2	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-07	16-Jun-2017	**W-CAT-4**	---	---	---	---	---	---	---	---	---	---	11	---	---	2.3	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		---	---	---	---	---	---	---	---	---	---	0.76	---	---	2.7	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	0.077	---	---	1.2	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		---	---	---	---	---	---	---	---	---	---	0.077	---	---	1.2	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	6.3	---	---	1.6	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		---	---	---	---	---	---	---	---	---	---	19	---	---	1.8	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-08	16-Jun-2017	**W-CAT-4**	---	---	---	---	---	---	---	---	---	---	9.7	---	---	2.4	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		---	---	---	---	---	---	---	---	---	---	1.9	---	---	2.8	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	23	---	---	2.7	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	23	---	---	2.7	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		---	---	---	---	---	---	---	---	---	---	**26**	---	---	2.9	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	19	---	---	2.6	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		---	---	---	---	---	---	---	---	---	---	**26**	---	---	2.7	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Oct-2019		0.0094	< 0.00060	0.016	**2.3**	< 0.0010	0.090	0.000062	< 0.0010	0.0012	0.0030	7.4	0.00030	< 0.020	0.86	0.00069	0.0048	< 0.10	0.00034	2.7	< 0.00010	0.78	< 0.00020	< 0.0010	< 0.0010	0.00035	< 0.0010	0.014

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
RB-MW17-09	16-Jun-2017	**W-CAT-4**	---	---	---	---	---	---	---	---	---	---	20	---	---	3.3	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Jun-2017		---	---	---	---	---	---	---	---	---	---	20	---	---	3.3	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		---	---	---	---	---	---	---	---	---	---	1.7	---	---	4.1	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	22	---	---	3.6	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		---	---	---	---	---	---	---	---	---	---	27	---	---	4.0	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	17	---	---	2.5	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		---	---	---	---	---	---	---	---	---	---	40	---	---	3.3	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Oct-2019		0.028	< 0.00060	0.093	5.7 [#2]	< 0.0010	0.13	0.00018	< 0.0010	0.0025	0.0014	50	0.00070	< 0.020	2.9	0.00067	0.0059	< 0.10	0.00074	4.9	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.00031	0.0024	0.020
RB-MW17-10	23-Nov-2017	**W-CAT-4**	---	---	---	---	---	---	---	---	---	---	28	---	---	2.4	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Oct-2019		0.020	< 0.00060	0.022	3.7	< 0.0010	0.18	< 0.000020	< 0.0010	0.0015	0.00067	22	0.00034	< 0.020	1.7	0.00092	0.0096	< 0.10	0.00054	5.0	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	0.00021	0.0025	0.0099
RB-MW17-11	24-Jun-2018	**W-CAT-4**	---	---	---	---	---	---	---	---	---	---	4.2	---	---	1.7	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Oct-2019		0.017	< 0.00060	0.020	0.99	< 0.0010	0.16	0.000041	< 0.0010	0.0017	0.0012	14	0.00059	< 0.020	1.8	0.00099	0.0060	< 0.10	0.00029	5.0	< 0.00010	0.69	< 0.00020	< 0.0010	< 0.0010	0.00036	0.0016	0.0073
RB-RW-08	15-Aug-2016	**W-CAT-4**	0.0093	< 0.00060	0.086	2.5	< 0.0010	0.40	< 0.000020	< 0.0010	0.00061	0.00059	10	0.00061	0.021	1.5	0.0012	0.0067	< 0.10	0.00096	3.1	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.0020	< 0.0010	0.037
	15-Mar-2017		---	---	---	---	---	---	---	---	---	---	4.1	---	---	1.2	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Apr-2017		---	---	---	---	---	---	---	---	---	---	15	---	---	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	11-Apr-2017		---	---	---	---	---	---	---	---	---	---	14	---	---	0.96	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-May-2017		---	---	---	---	---	---	---	---	---	---	0.34	---	---	0.23	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	10-May-2017		---	---	---	---	---	---	---	---	---	---	0.32	---	---	0.23	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2017		---	---	---	---	---	---	---	---	---	---	1.0	---	---	2.8	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	18	---	---	3.3	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	18	---	---	3.3	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		---	---	---	---	---	---	---	---	---	---	20	---	---	2.7	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	14-Sep-2017		---	---	---	---	---	---	---	---	---	---	21	---	---	2.7	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	75	---	---	3.3	---	---	---	---	---	---	---	---	---	---	---	---	---
	22-Nov-2017		---	---	---	---	---	---	---	---	---	---	74	---	---	4.9	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Oct-2019		< 0.0030	< 0.00060	0.015	3.3	< 0.0010	0.54	0.000022	< 0.0010	< 0.00030	0.0029	0.39	0.0015	0.035	0.59	0.00046	0.0019	< 0.10	0.00056	3.2	< 0.00010	1.3	< 0.00020	0.0012	< 0.0010	0.00039	< 0.0010	0.0097
RB-RW-09	15-Aug-2016	**W-CAT-4**	0.016	0.00080	0.021	1.8	< 0.0010	0.036	0.000081	0.0012	0.0039	0.0012	61	0.0018	< 0.020	1.3	0.0016	0.014	< 0.10	0.0048	7.0	< 0.00010	1.4	< 0.00020	< 0.0010	0.0015	0.00024	0.0041	0.027
	15-Mar-2017		---	---	---	---	---	---	---	---	---	---	23	---	---	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Apr-2017		---	---	---	---	---	---	---	---	---	---	43	---	---	0.92	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-May-2017		---	---	---	---	---	---	---	---	---	---	5.2	---	---	0.56	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jun-2017		---	---	---	---	---	---	---	---	---	---	0.10	---	---	0.61	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2017		---	---	---	---	---	---	---	---	---	---	1.2	---	---	1.4	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	52	---	---	1.4	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		---	---	---	---	---	---	---	---	---	---	61	---	---	1.5	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	62	---	---	1.4	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		---	---	---	---	---	---	---	---	---	---	56	---	---	1.5	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Oct-2019		0.013	< 0.00060	0.032	1.7	< 0.0010	0.039	< 0.000020	0.0016	0.0019	0.0014	53	0.0018	< 0.020	1.0	0.00099	0.0082	< 0.10	0.0032	7.5	< 0.00010	1.4	< 0.00020	< 0.0010	0.0013	0.00043	0.0043	0.0058
RB-RW-12	15-Aug-2016	**W-CAT-4**	0.021	< 0.00060	0.015	1.1	< 0.0010	0.030	0.000070	0.0013	0.0036	0.00058	22	0.00062	< 0.020	1.7	0.0047	0.013	< 0.10	0.0014	6.7	< 0.00010	0.63	< 0.00020	< 0.0010	< 0.0010	0.00087	0.0025	0.035
RB-RW-13	15-Mar-2017	**W-CAT-4**	---	---	---	---	---	---	---	---	---	---	11	---	---	2.2	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Apr-2017		---	---	---	---	---	---	---	---	---	---	6.8	---	---	1.6	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-May-2017		---	---	---	---	---	---	---	---	---	---	4.0	---	---	0.90	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jun-2017		---	---	---	---	---	---	---	---	---	---	0.32	---	---	0.56	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	15-Jun-2017		---	---	---	---	---	---	---	---	---	---	0.34	---	---	0.56	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2017		---	---	---	---	---	---	---	---	---	---	0.096	---	---	2.2	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	0.76	---	---	4.1	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Sep-2017		---	---	---	---	---	---	---	---	---	---	0.35	---	---	5.7	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	12	---	---	3.6	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		---	---	---	---	---	---	---	---	---	---	6.9	---	---	3.3	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 6A

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
RB-RW-13 (cont.)	03-Oct-2019		0.0057	< 0.00060	0.033	0.84	< 0.0010	0.062	0.00021	< 0.0010	0.00057	0.0019	4.9	0.0017	< 0.020	2.5	0.00047	0.0034	< 0.10	0.00058	4.7	< 0.00010	0.68	< 0.00020	< 0.0010	< 0.0010	0.0024	< 0.0010	0.025
(Duplicate)	03-Oct-2019		0.0049	< 0.00060	0.034	0.83	< 0.0010	0.060	0.000085	< 0.0010	0.00052	0.00082	4.7	0.0013	< 0.020	2.5	0.00047	0.0034	< 0.10	0.00058	4.7	< 0.00010	0.67	< 0.00020	< 0.0010	< 0.0010	0.0025	< 0.0010	0.015
RB-RW-4	15-Aug-2016	**W-CAT-4**	0.012	0.00082	0.039	0.54	< 0.0010	0.034	< 0.000020	< 0.0010	0.0039	< 0.00020	20	0.00085	< 0.020	3.8	0.00091	0.0075	< 0.10	0.0019	5.9	< 0.00010	0.99	< 0.00020	< 0.0010	< 0.0010	0.0014	0.0015	0.0064
RB-RW-5	02-Nov-2016	**W-CAT-4**	< 0.0030	< 0.00060	0.00080	0.13	< 0.0010	0.11	< 0.000020	< 0.0010	< 0.00030	< 0.00020	16	< 0.00020	< 0.020	9.9	0.00069	< 0.00050	1.7	0.0013	3.7	< 0.00010	0.52	< 0.00020	< 0.0010	< 0.0010	0.00072	< 0.0010	< 0.0030
	15-Mar-2017		---	---	---	---	---	---	---	---	---	---	0.87	---	---	6.6	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Apr-2017		---	---	---	---	---	---	---	---	---	---	6.5	---	---	5.6	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-May-2017		---	---	---	---	---	---	---	---	---	---	12	---	---	1.9	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Jun-2017		---	---	---	---	---	---	---	---	---	---	0.91	---	---	0.16	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		---	---	---	---	---	---	---	---	---	---	0.075	---	---	0.75	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		---	---	---	---	---	---	---	---	---	---	46	---	---	1.8	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Sep-2017		---	---	---	---	---	---	---	---	---	---	2.8	---	---	2.2	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	26	---	---	3.6	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		---	---	---	---	---	---	---	---	---	---	39	---	---	6.4	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Oct-2019		0.0040	< 0.00060	0.035	0.53	< 0.0010	0.098	0.00016	< 0.0010	0.0012	0.0014	5.8	0.00084	< 0.020	8.4	0.00025	0.0016	< 0.10	0.00035	3.3	< 0.00010	0.61	< 0.00020	< 0.0010	< 0.0010	0.0027	< 0.0010	0.016
RB-RW-6	15-Aug-2016	**W-CAT-4**	0.0071	< 0.00060	0.0045	0.22	< 0.0010	0.23	< 0.000020	< 0.0010	0.0013	0.0011	2.8	0.00066	< 0.020	2.0	0.0011	0.0039	< 0.10	0.0017	4.3	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	0.0043	< 0.0010	0.015
Mainland East - Former Refinery - Bedrock																													
NWR 09-2-26	12-Mar-2016	**W-CAT-3**	0.016	0.00066	0.0081	0.70	< 0.0010	0.11	0.00047	< 0.0010	0.0026	< 0.00020	2.6	< 0.00020	0.038	0.71	0.0025	0.0064	< 0.10	0.0039	6.3	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	0.015	0.0023	0.0088
	05-Aug-2016		0.013	0.00062	0.0078	0.66	< 0.0010	0.28	< 0.000020	< 0.0010	0.0020	0.00021	1.7	< 0.00020	0.086	0.40	0.0024	0.0047	< 0.10	0.0014	5.7	< 0.00010	1.0	< 0.00020	< 0.0010	0.0012	0.0079	0.0031	0.0052
(Duplicate)	05-Aug-2016		0.012	< 0.00060	0.0074	0.54	< 0.0010	0.27	< 0.000020	< 0.0010	0.0018	< 0.00020	1.7	< 0.00020	0.089	0.40	0.0023	0.0043	< 0.10	0.0011	5.6	< 0.00010	0.99	< 0.00020	< 0.0010	0.0015	0.0073	0.0029	< 0.0030
	03-Nov-2016		0.0054	< 0.00060	0.00081	0.25	< 0.0010	0.042	0.000031	< 0.0010	< 0.00030	0.0017	2.2	< 0.00020	< 0.020	0.47	0.0036	0.0029	< 0.10	0.00034	5.6	< 0.00010	0.86	< 0.00020	< 0.0010	< 0.0010	0.26	< 0.0010	0.0051
(Duplicate)	03-Nov-2016		0.0047	< 0.00060	0.00029	0.33	< 0.0010	0.047	< 0.000020	< 0.0010	< 0.00030	< 0.00020	2.2	0.00031	< 0.020	0.47	0.0017	0.00055	< 0.10	< 0.00020	5.8	< 0.00010	0.88	< 0.00020	< 0.0010	< 0.0010	0.00033	< 0.0010	0.60
	13-Aug-2017		0.0077	< 0.00060	0.0040	21	< 0.0010	1.2	< 0.000020	< 0.0010	< 0.00030	0.0013	2.8	< 0.00020	0.37	0.21	0.00079	0.00070	< 1.0	0.00045	4.6	< 0.00010	3.3	< 0.00020	< 0.0010	0.0039	0.00070	0.0053	0.0075
(Duplicate)	13-Aug-2017		0.0056	< 0.00060	0.0039	21	< 0.0010	1.2	< 0.000020	0.0016	< 0.00030	0.0012	2.7	< 0.00020	0.31	0.21	0.00085	0.0010	< 1.0	0.00061	4.4	< 0.00010	3.3	< 0.00020	< 0.0010	0.0031	0.00069	0.0054	0.0040
	20-Jul-2018		0.012	< 0.00060	0.0043	17	< 0.0010	1.1	< 0.000020	< 0.0010	< 0.00030	0.0011	0.70	< 0.00020	0.37	0.18	0.00069	0.00091	2.3	0.00055	3.9	< 0.00010	2.7	< 0.00020	< 0.0010	0.0018	0.00048	0.0055	0.0075
(Duplicate)	20-Jul-2018		0.0045	< 0.00060	0.0046	13	< 0.0010	0.97	< 0.000020	< 0.0010	< 0.00030	0.0012	1.1	< 0.00020	0.29	0.23	0.00090	0.0016	< 1.0	0.00083	4.1	< 0.00010	2.1	< 0.00020	< 0.0010	0.0018	0.0016	0.0052	0.0093
	15-Jul-2019		0.012	0.0012	0.0060	1.3	< 0.0010	0.21	< 0.000020	< 0.0010	0.0022	0.00052	0.47	< 0.00020	0.068	0.47	0.0061	0.0075	< 0.10	0.00077	5.0	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	0.0066	0.0015	0.012
(Duplicate)	15-Jul-2019		0.0090	0.0013	0.0063	1.3	< 0.0010	0.21	< 0.000020	< 0.0010	0.0024	0.00040	0.46	< 0.00020	0.068	0.47	0.0062	0.0072	< 0.10	0.00088	5.0	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	0.0067	0.0014	< 0.0030
NWR 09-4-5	05-Aug-2016	**W-CAT-3**	0.035	0.00089	0.088	0.96	< 0.0010	0.13	0.000024	0.0012	0.0039	0.00060	58	0.0011	< 0.020	8.1	0.0011	0.010	< 0.10	0.00098	4.9	< 0.00010	0.93	< 0.00020	< 0.0010	< 0.0010	0.00050	0.0049	0.032
	11-Apr-2017		---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	1.4	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Jun-2017		---	---	---	---	---	---	---	---	---	---	40	---	---	7.5	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		---	---	---	---	---	---	---	---	---	---	40	---	---	9.8	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Aug-2017		0.072	0.00073	0.12	0.80	< 0.0010	0.067	< 0.000020	0.0015	0.0036	0.00048	88	0.0022	< 0.020	7.0	0.00067	0.0061	< 0.10	0.0010	5.0	< 0.00010	0.88	< 0.00020	< 0.0010	0.0013	0.00019	0.0043	0.0091
	14-Sep-2017		---	---	---	---	---	---	---	---	---	---	68	---	---	7.4	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		---	---	---	---	---	---	---	---	---	---	39	---	---	3.6	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		---	---	---	---	---	---	---	---	---	---	28	---	---	3.0	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR 09-5-19	12-Mar-2016	**W-CAT-3**	0.0053	< 0.00060	0.045	6.3 [#2]	< 0.0010	1.4	< 0.000020	< 0.0010	0.00066	< 0.00020	3.9	< 0.00020	0.15	0.22	0.00024	0.0026	< 0.10	0.0012	4.6	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.00023	0.0020	0.012
	05-Aug-2016		0.0052	< 0.00060	0.022	6.3 [#2]	< 0.0010	0.74	< 0.000020	< 0.0010	0.00033	0.00091	1.8	< 0.00020	0.069	0.27	< 0.00020	0.0016	< 0.10	0.00044	4.5	< 0.00010	1.5	< 0.00020	< 0.0010	< 0.0010	0.00013	0.0017	0.0058
	13-Aug-2017		0.0036	< 0.00060	0.061	4.7	< 0.0010	1.1	< 0.000020	< 0.0010	0.00046	0.00051	2.4	< 0.00020	0.10	0.21	< 0.00020	0.0013	< 0.10	0.00031	4.6	< 0.00010	0.88	< 0.00020	< 0.0010	< 0.0010	0.00024	0.0017	0.0060
	22-Jul-2018		< 0.0030	< 0.00060	0.065	7.3	< 0.0010	1.5	< 0.000020	< 0.0010	0.00047	0.00051	4.0	< 0.00020	< 0.20	0.19	0.00027	0.0013	< 1.0	0.00045	4.4	< 0.00010	1.1	< 0.00020	< 0.0010	0.0013	0.00025	0.0023	< 0.0030
	15-Jul-2019		< 0.0030	< 0.00060	0.035	7.5 [#2]	< 0.0010	1.5	< 0.000020	< 0.0010	0.00032	0.0012	3.2	< 0.00020	0.17	0.16	< 0.00020	0.0016	< 0.10	0.00024	4.3	< 0.00010	1.1	< 0.00020	< 0.0010	0.0012	0.00014	0.0022	0.0046
NWR 98-13-21	12-Mar-2016	**W-CAT-3**	0.013	< 0.00060	0.0015	4.2	< 0.0010	0.61	< 0.000020	< 0.0010	< 0.00030	< 0.00020	0.23	< 0.00020	0.047	0.17	< 0.00020	< 0.00050	< 0.10	0.0056	3.8	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	< 0.00010	0.0010	0.0072
	05-Aug-2016		0.0061	< 0.00060	0.0017	4.8	< 0.0010	0.58	< 0.000020	< 0.0010	< 0.00030	0.00058	0.12	< 0.00020	0.047	0.17	< 0.00020	< 0.00050	< 0.10	0.020	3.8	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0033
(Duplicate)	05-Aug-2016		0.0065	< 0.00060	0.0016	4.8	< 0.0010	0.58	< 0.000020	< 0.0010	< 0.00030	0.00063	0.11	< 0.00020	0.048	0.17	< 0.00020	0.00063	< 0.10	0.018	3.9	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0059
	02-Nov-2016		0.0062	< 0.00060	0.0025	4.7	< 0.0010	0.46	< 0.000020	< 0.0010	< 0.00030	< 0.00020	0.071	< 0.00020	0.025	0.19	0.0011	< 0.00050	< 0.10	0.00033	3.6	< 0.00010	2.2	< 0.00020	< 0.0010	< 0.0010	0.00075	< 0.0010	< 0.0030
	15-Aug-2017		0.0051	< 0.00060	0.0013	6.5 [#2]	< 0.0010	0.50	< 0.000020	< 0.0010	< 0.00030	0.00057	0.15	< 0.00020	0.043	0.20	< 0.00020	0.00052	< 0.10	0.0072	3.7	< 0.00010	1.9	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030
	20-Jul-2018		0.0035	< 0.00060	0.00095	8.3 [#2]	< 0.0010	0.43	< 0.000020	< 0.0010	< 0.00030	0.00063	0.10	< 0.00020	0.036	0.22	< 0.00020	0.00059	< 0.10	0.0049	3.6	< 0.00010	2.0	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0031
(Duplicate)	20-Jul-2018		0.0054	< 0.00060	0.0012	8.1 [#2]	< 0.0010	0.44	< 0.000020	< 0.0010	< 0.00030	0.00052	0.13	< 0.00020	0.038	0.22	< 0.00020	0.00053	< 0.10	0.0070	3.6	< 0.00010	2.0	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030

Advisian
Worley Group

Table 6A

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
NWR 98-13-21 (cont.)	15-Jul-2019		0.0063	< 0.00060	0.00089	8.8 #2	< 0.0010	0.57	< 0.000020	< 0.0010	< 0.00030	0.00083	0.24	< 0.00020	0.076	0.20	< 0.00020	0.00051	< 0.10	0.0016	3.7	< 0.00010	2.5	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0031
(Duplicate)	15-Jul-2019		0.0067	< 0.00060	0.00076	8.7 #2	< 0.0010	0.57	< 0.000020	< 0.0010	< 0.00030	0.00086	0.24	< 0.00020	0.076	0.21	< 0.00020	0.00081	< 0.10	0.0015	3.7	< 0.00010	2.5	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0038
P100	14-Mar-2016	**W-CAT-3**	---	---	---	---	---	---	---	---	---	---	0.32	---	---	0.17	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2016		< 0.0030	< 0.00060	0.0025	6.6 #2	< 0.0010	0.73	< 0.000020	< 0.0010	< 0.00030	0.00071	0.41	< 0.00020	0.057	0.22	< 0.00020	0.0043	< 0.10	0.013	3.6	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0059
	02-Nov-2016		0.0077	< 0.00060	0.00068	6.7 #2	< 0.0010	0.65	0.000027	< 0.0010	< 0.00030	0.0046	0.36	< 0.00020	0.047	0.21	0.0044	0.0075	< 0.10	0.00032	3.6	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.14	< 0.0010	0.0076
	03-Sep-2019		0.015	< 0.00060	0.0018	7.2 #2	< 0.0010	0.64	< 0.000020	< 0.0010	< 0.00030	0.00070	0.44	< 0.00020	0.066	0.25	< 0.00020	0.00061	< 0.10	0.0048	3.4	< 0.00010	1.5	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0089
P200	14-Mar-2016	**W-CAT-3**	---	---	---	---	---	---	---	---	---	---	0.34	---	---	0.23	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2016		< 0.0030	< 0.00060	0.0021	7.7 #2	< 0.0010	0.57	< 0.000020	< 0.0010	< 0.00030	0.00080	0.16	< 0.00020	0.048	0.22	< 0.00020	0.0044	< 0.10	0.029	4.0	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0076
	02-Nov-2016		0.014	< 0.00060	0.0020	7.4 #2	< 0.0010	0.56	< 0.000020	< 0.0010	< 0.00030	0.00084	0.22	< 0.00020	0.041	0.21	< 0.00020	0.0028	< 0.10	0.0075	3.7	< 0.00010	1.5	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0079
(Duplicate)	02-Nov-2016		0.0054	< 0.00060	0.0018	7.6 #2	< 0.0010	0.55	< 0.000020	< 0.0010	< 0.00030	0.00051	0.22	< 0.00020	0.038	0.21	< 0.00020	0.00099	< 0.10	0.0080	3.7	< 0.00010	1.5	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030
	03-Sep-2019		< 0.0030	< 0.00060	0.0011	8.9 #2	< 0.0010	0.55	< 0.000020	< 0.0010	< 0.00030	0.00074	0.31	< 0.00020	0.046	0.26	< 0.00020	0.00067	< 0.10	0.0063	3.5	< 0.00010	1.9	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0043
P700	14-Mar-2016	**W-CAT-3**	---	---	---	---	---	---	---	---	---	---	0.43	---	---	0.23	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2016		< 0.0030	< 0.00060	0.0023	3.8	< 0.0010	1.3	< 0.000020	< 0.0010	< 0.00030	0.00032	0.23	< 0.00020	0.11	0.18	< 0.00020	0.0043	< 0.10	0.015	3.1	< 0.00010	0.75	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0067
	02-Nov-2016		0.0081	< 0.00060	0.0023	4.1	< 0.0010	1.2	< 0.000020	< 0.0010	< 0.00030	0.00050	0.32	< 0.00020	0.092	0.18	< 0.00020	0.0018	< 0.10	0.0029	3.1	< 0.00010	0.80	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0044
	03-Sep-2019		< 0.0030	< 0.00060	0.0012	3.6	< 0.0010	1.2	< 0.000020	< 0.0010	< 0.00030	0.00040	0.26	< 0.00020	0.12	0.16	< 0.00020	0.0011	0.34	0.0028	2.9	< 0.00010	0.69	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030
C-27X Sump - Surficial Sediment																													
C27-16-2-3	03-Aug-2016	**W-CAT-1**	0.0078	< 0.00060	0.0013	0.053	< 0.0010	0.14	0.00027	< 0.0010	0.0015	0.019	< 0.060	< 0.00020	0.089	1.2	0.0016	0.014	0.11	0.0038	6.3	< 0.00010	0.56	< 0.00020	0.0039	< 0.0010	0.036	< 0.0010	0.023
(Duplicate)	03-Aug-2016		0.0074	< 0.00060	0.0013	0.054	< 0.0010	0.14	0.00024	< 0.0010	0.0022	0.019	< 0.060	< 0.00020	0.088	1.2	0.0015	0.016	0.10	0.0040	6.3	< 0.00010	0.56	< 0.00020	0.0039	< 0.0010	0.037	< 0.0010	0.029
	15-Aug-2017		0.012	< 0.00060	0.00094	0.12	< 0.0010	0.12	0.00023	< 0.0010	0.0017	0.0058	< 0.060	0.00030	0.12	0.87	0.00081	0.011	< 0.10	0.00048	7.3	< 0.00010	0.60	< 0.00020	< 0.0010	< 0.0010	0.024	< 0.0010	0.014
(Duplicate)	15-Aug-2017		0.012	< 0.00060	0.00098	0.12	< 0.0010	0.11	0.00024	< 0.0010	0.0017	0.0057	< 0.060	0.00028	0.12	0.87	0.00084	0.011	< 0.10	0.00048	7.1	< 0.00010	0.60	< 0.00020	< 0.0010	< 0.0010	0.025	< 0.0010	0.013
	13-Jul-2018		0.0079	< 0.00060	0.00075	0.087	< 0.0010	0.16	0.00018	< 0.0010	< 0.00030	0.0042	0.084	< 0.00020	0.087	0.27	0.00048	0.011	< 0.10	0.00038	6.0	< 0.00010	0.75	< 0.00020	< 0.0010	< 0.0010	0.021	< 0.0010	0.010
(Duplicate)	13-Jul-2018		0.060	< 0.00060	0.00073	0.090	< 0.0010	0.16	0.00017	< 0.0010	< 0.00030	0.0043	0.12	< 0.00020	0.086	0.26	0.00046	0.011	< 0.10	0.00039	5.7	< 0.00010	0.76	< 0.00020	< 0.0010	0.0029	0.022	< 0.0010	0.0094
	11-Jul-2019		0.0034	< 0.00060	0.00065	0.076 #1	< 0.0010	0.19	0.00012	< 0.0010	< 0.00030	0.0039	< 0.060	< 0.00020	0.080	0.089	0.00042	0.0090	< 0.10	0.00046	5.3 #1	< 0.00010	0.73	< 0.00020	< 0.0010	< 0.0010	0.021	< 0.0010	0.020
(Duplicate)	11-Jul-2019		0.0032	< 0.00060	0.00075	0.073	< 0.0010	0.19	0.00014	< 0.0010	< 0.00030	0.0035	< 0.060	< 0.00020	0.080	0.090	0.00043	0.0088	< 0.10	0.00042	5.3	< 0.00010	0.74	< 0.00020	< 0.0010	< 0.0010	0.021	< 0.0010	0.018
C27-16-4-3	03-Aug-2016	**W-CAT-1**	0.0032	< 0.00060	0.0013	0.064	< 0.0010	0.23	0.00011	< 0.0010	0.0043	0.0017	< 0.060	< 0.00020	0.080	1.8	0.0011	0.013	< 0.10	0.00027	5.5	< 0.00010	0.80	< 0.00020	0.0010	< 0.0010	0.016	< 0.0010	0.014
	13-Aug-2017		0.0034	< 0.00060	0.00099	0.059	< 0.0010	0.28	0.00012	< 0.0010	0.0036	0.0016	0.13	< 0.00020	0.089	1.1	0.00072	0.016	< 0.10	0.00023	4.9	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	0.020	< 0.0010	0.0088
	13-Jul-2018		0.0055	< 0.00060	0.00032	0.077	< 0.0010	0.17	0.00014	< 0.0010	0.00081	0.0017	< 0.060	< 0.00020	0.063	0.43	0.00069	0.0058	< 0.10	< 0.00020	4.4	< 0.00010	0.71	< 0.00020	< 0.0010	0.0010	0.017	< 0.0010	0.0060
	11-Jul-2019		0.0067	< 0.00060	0.00042	0.082	< 0.0010	0.087	0.000099	< 0.0010	0.0014	0.0025	0.37	< 0.00020	0.14	0.62	0.00085	0.0080	< 0.10	< 0.00020	7.1	< 0.00010	0.62	< 0.00020	< 0.0010	< 0.0010	0.024	< 0.0010	0.0089
Cemetery Sump - Surficial Sediment																													
CEM 08-2-5	03-Aug-2016	**W-CAT-1**	0.0035	< 0.00060	0.0014	< 0.10	< 0.0010	< 0.20	0.0027	< 0.0010	0.021	0.0030	9.8	< 0.00020	< 0.20	8.5	< 0.00020	0.039	< 1.0	0.00088	4.3	< 0.00010	6.0	0.00020	< 0.0010	< 0.0010	0.029	< 0.0010	0.027
CEM 08-4-5	03-Aug-2016	**W-CAT-1**	0.0062	< 0.00060	0.00054	0.022	< 0.0010	0.075	0.00024	< 0.0010	0.00092	0.013	0.12	< 0.00020	0.048	0.27	0.00024	0.015	< 0.10	0.00087	4.4	< 0.00010	1.9	< 0.00020	< 0.0010	< 0.0010	0.028	< 0.0010	0.022
CEM 09-3-2	03-Aug-2016	**W-CAT-1**	0.035	< 0.00060	0.0016	0.045	< 0.0010	0.053	0.000041	< 0.0010	0.0042	0.0012	3.3	0.00029	< 0.020	2.3	0.0018	0.0078	0.13	0.00082	3.3	< 0.00010	1.5	< 0.00020	< 0.0010	0.0022	0.028	0.0017	0.0069
(Duplicate)	03-Aug-2016		0.034	< 0.00060	0.0015	0.045	< 0.0010	0.051	0.000046	< 0.0010	0.0040	0.0014	3.3	0.00028	< 0.020	2.4	0.0019	0.0079	0.13	0.00060	3.4	< 0.00010	1.5	< 0.00020	< 0.0010	0.0012	0.028	0.0016	0.011
Mainland Sumps - Surficial Sediment																													
MLS 09-1-3	03-Aug-2016	**W-CAT-1**	0.0040	< 0.00060	0.00020	0.038	< 0.0010	0.70	0.00025	< 0.0010	< 0.00030	0.00067	< 0.060	< 0.00020	0.12	0.49	0.00039	0.0086	< 0.10	< 0.00020	4.2	< 0.00010	3.4	< 0.00020	< 0.0010	< 0.0010	0.0088	< 0.0010	0.013
	16-Aug-2017		0.58	< 0.00060	0.0015	0.051	< 0.0010	0.42	0.00027	0.0012	0.0010	0.0032	1.6	0.0021	0.075	0.34	0.00027	0.0082	< 0.10	0.00022	5.7	< 0.00010	2.1	< 0.00020	< 0.0010	0.0042	0.0089	0.0031	0.016
(Duplicate)	16-Aug-2017		0.51	< 0.00060	0.0015	0.049	< 0.0010	0.42	0.00026	0.0011	0.00091	0.0023	1.4	0.0017	0.074	0.33	0.00034	0.0076	< 0.10	0.00021	5.5	< 0.00010	2.1	< 0.00020	< 0.0010	0.0036	0.0089	0.0028	0.015
	19-Jul-2018		1.5	< 0.00060	0.0039	0.057	< 0.0010	0.58	0.00036	0.0029	0.0027	0.0084	4.0	0.0078	0.13	0.31	0.00023	0.012	0.34	< 0.00020	5.6	0.00016	3.3	< 0.00020	< 0.0010	0.020	0.0096	0.0071	0.035
	18-Jul-2019		< 0.0030	< 0.00060	0.00029	0.040	< 0.0010	0.59	0.00026	< 0.0010	< 0.00030	0.0014	0.15	< 0.00020	0.14	0.18	0.00051	0.0075	< 0.10	< 0.00020	3.5	< 0.00010	3.8	< 0.00020	< 0.0010	< 0.0010	0.0077	< 0.0010	0.0065
(Duplicate)	18-Jul-2019		< 0.0030	< 0.00060	0.00028	0.040	< 0.0010	0.59	0.00028	< 0.0010	< 0.00030	0.00069	0.14	< 0.00020	0.14	0.18	0.00054	0.0072	< 0.10	< 0.00020	3.5	< 0.00010	3.8	< 0.00020	< 0.0010	< 0.0010	0.0076	< 0.0010	0.0057
MLS 09-2-3	03-Aug-2016	**W-CAT-1**	0.0044	< 0.00060	0.00053	0.14	< 0.0010	0.69	0.000094	< 0.0010	0.0018	0.0010	< 0.060	< 0.00020	0.081	0.38	0.0018	0.0075	< 0.10	< 0.00020	6.9	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.014	< 0.0010	0.035
	16-Aug-2017		0.012	< 0.00060	0.00051	0.14	< 0.0010	0.51	0.000072	< 0.0010	< 0.00030	0.0028	< 0.060	0.00023	0.061	0.0095	0.0023	0.0038	< 0.10	0.00020	6.2	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.019	0.0011	0.024
MLS 09-15-3	19-Jul-2018	**W-CAT-1**	0.10	< 0.00060	0.00035	0.058	< 0.0010	0.30	0.00015	< 0.0010	< 0.00030	0.0027	0.20	0.00051	0.032	0.019	0.00033	0.0032	< 0.10	0.00032	4.7	< 0.00010	1.6	< 0.00020	< 0.0010	0.0035	0.011	< 0.0010	0.018
	18-Jul-2019		< 0.0030	< 0.00060	0.00033	0.057	< 0.0010	0.27	0.00011	< 0.0010	< 0.00030	0.0014	0.082	< 0.00020	0.028	0.0041	0.00062	0.0028	< 0.10	0.00032	4.7	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.010	< 0.0010	0.011

Advisian
Worley Group

Table 6A

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS-13-2-3	03-Aug-2016	**W-CAT-1**	0.0083	< 0.00060	0.0011	0.025	< 0.0010	0.38	0.000077	< 0.0010	0.00079	0.0041	< 0.060	< 0.00020	0.021	0.12	0.0052	0.0075	< 0.10	0.00044	3.9	< 0.00010	0.59	< 0.00020	0.0013	< 0.0010	0.015	< 0.0010	0.011
	16-Aug-2017		0.0086	< 0.00060	0.00074	0.027	< 0.0010	0.41	0.00011	< 0.0010	0.00035	0.0089	< 0.060	< 0.00020	< 0.020	0.031	0.0043	0.0060	< 0.10	0.00028	3.3	< 0.00010	0.59	< 0.00020	< 0.0010	< 0.0010	0.011	0.0018	0.0095
	19-Jul-2018		0.0057	< 0.00060	0.00059	0.023	< 0.0010	0.25	< 0.000020	< 0.0010	< 0.00030	0.0062	< 0.060	< 0.00020	< 0.020	0.012	0.0036	0.0037	< 0.10	0.00076	3.3	< 0.00010	0.43	< 0.00020	< 0.0010	< 0.0010	0.0089	< 0.0010	0.0088
	18-Jul-2019		0.0053	< 0.00060	0.00058	0.024	< 0.0010	0.23	0.000031	< 0.0010	< 0.00030	0.0048	< 0.060	< 0.00020	< 0.020	0.0045	0.0035	0.0033	< 0.10	0.0011	3.2	< 0.00010	0.60	< 0.00020	< 0.0010	< 0.0010	0.0094	< 0.0010	0.013
MLS-14-5-4	03-Aug-2016	**W-CAT-1**	0.0042	< 0.00060	0.00060	0.078	< 0.0010	0.25	< 0.000020	< 0.0010	0.0014	< 0.00020	0.16	< 0.00020	< 0.020	0.76	0.00070	0.0026	< 0.10	< 0.00020	2.3	< 0.00010	0.38	< 0.00020	< 0.0010	< 0.0010	0.0034	< 0.0010	0.0083
	16-Aug-2017		0.0036	< 0.00060	0.00061	0.098	< 0.0010	0.25	< 0.000020	< 0.0010	0.0023	0.0013	0.82	< 0.00020	< 0.020	1.4	0.00063	0.0036	< 0.10	< 0.00020	2.9	< 0.00010	0.45	< 0.00020	< 0.0010	< 0.0010	0.0034	0.0013	0.039
	19-Jul-2018		< 0.0030	< 0.00060	0.00072	0.11	< 0.0010	0.28	< 0.000020	< 0.0010	0.0027	0.00056	1.0	< 0.00020	< 0.020	1.6	0.00083	0.0043	< 0.10	< 0.00020	3.1	< 0.00010	0.55	< 0.00020	< 0.0010	< 0.0010	0.0044	< 0.0010	0.0080
	18-Jul-2019		0.0047	< 0.00060	0.00070	0.15	< 0.0010	0.26	< 0.000020	< 0.0010	0.0022	0.0019	0.46	0.00028	< 0.020	1.5	0.00089	0.0043	< 0.10	< 0.00020	2.9	< 0.00010	0.54	< 0.00020	< 0.0010	< 0.0010	0.0039	< 0.0010	0.013
Mainland Drilling Sump - Surficial Sediment																													
MLS-13-1-3	04-Aug-2016	**W-CAT-3**	0.0056	< 0.00060	0.00049	0.083	< 0.0010	0.22	0.00023	< 0.0010	0.0046	0.0022	0.19	< 0.00020	< 0.020	0.82	0.010	0.015	< 0.10	0.00036	5.3	< 0.00010	1.7	< 0.00020	< 0.0010	< 0.0010	0.014	< 0.0010	0.0083
	16-Aug-2017		0.0068	0.00075	0.00050	0.11	< 0.0010	0.23	0.00024	0.0010	< 0.00030	0.0064	< 0.060	< 0.00020	< 0.020	0.033	0.0063	0.012	< 0.10	0.00035	4.7	< 0.00010	1.2	< 0.00020	< 0.0010	< 0.0010	0.027	< 0.0010	0.011
	19-Jul-2018		0.0033	0.00097	0.00039	0.087	< 0.0010	0.29	0.00019	0.0011	< 0.00030	0.0058	< 0.060	< 0.00020	< 0.020	0.031	0.0050	0.014	< 0.10	0.00051	4.2	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	0.027	< 0.0010	0.0075
	13-Jul-2019		0.0087	< 0.00060	0.00033	0.11	< 0.0010	0.11	0.00014	< 0.0010	< 0.00030	0.0036	< 0.060	< 0.00020	< 0.020	0.084	0.0019	0.0061	< 0.10	< 0.00020	3.6	< 0.00010	0.75	< 0.00020	< 0.0010	< 0.0010	0.018	< 0.0010	0.0092
Mainland Drilling Sump - Bedrock																													
MLS 08-1-4	04-Aug-2016	**W-CAT-3**	0.025	< 0.00060	0.0010	0.011	< 0.0010	1.8	0.000034	< 0.0010	0.0014	0.00020	0.40	< 0.00020	0.13	0.87	0.00065	0.0093	< 0.10	< 0.00020	3.2	< 0.00010	2.8	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	0.014
	16-Aug-2017		< 0.0030	< 0.00060	0.0020	0.014	< 0.0010	1.9	< 0.000020	< 0.0010	0.00084	< 0.00020	0.77	< 0.00020	0.13	0.48	0.00042	0.0027	< 0.10	0.00037	2.7	< 0.00010	2.1	< 0.00020	< 0.0010	< 0.0010	0.00044	< 0.0010	0.0074
	21-Jul-2018		< 0.0030	< 0.00060	0.0015	0.021	< 0.0010	1.8	< 0.000020	< 0.0010	0.0012	0.00042	0.47	< 0.00020	0.15	0.90	0.00044	0.0045	< 0.10	0.00020	3.0	< 0.00010	2.4	< 0.00020	< 0.0010	< 0.0010	0.00078	< 0.0010	0.013
	13-Jul-2019		0.036	< 0.00060	0.00053	0.011	< 0.0010	1.8	0.000048	< 0.0010	0.0017	0.0014	0.13	< 0.00020	0.12	0.87	0.00033	0.015	< 0.10	< 0.00020	2.5	< 0.00010	3.2	< 0.00020	< 0.0010	< 0.0010	0.0021	< 0.0010	0.015
MLS 08-3-4	04-Aug-2016	**W-CAT-3**	0.0045	< 0.00060	0.00092	0.015	< 0.0010	1.3	0.00015	< 0.0010	0.0023	0.00084	< 0.060	< 0.00020	0.049	1.4	0.0018	0.0075	< 0.10	< 0.00020	4.4	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.0074	< 0.0010	0.0049
(Duplicate)	04-Aug-2016		0.0048	< 0.00060	0.00082	0.015	< 0.0010	1.3	0.00017	< 0.0010	0.0024	0.00083	< 0.060	< 0.00020	0.049	1.4	0.0019	0.0078	< 0.10	< 0.00020	4.4	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.0075	< 0.0010	0.0035
	16-Aug-2017		0.0047	< 0.00060	0.0020	0.56	< 0.0010	2.2	0.000089	< 0.0010	0.0020	0.00049	< 0.60	< 0.00020	< 0.20	0.60	0.0025	0.0037	< 1.0	0.00024	3.6	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.0022	0.0015	0.0046
	19-Jul-2018		0.65	< 0.00060	0.0024	0.22	< 0.0010	1.7	0.00021	0.0011	0.0021	0.0021	0.31	0.00051	0.083	0.81	0.00094	0.0059	< 0.10	< 0.00020	5.2	< 0.00010	1.2	< 0.00020	< 0.0010	0.025	0.0020	0.0025	0.0052
(Duplicate)	19-Jul-2018		1.1	< 0.00060	0.0027	0.21	< 0.0010	1.6	0.00026	0.0015	0.0027	0.0049	0.76	0.0020	0.081	0.84	0.00034	0.0074	0.11	< 0.00020	5.1	< 0.00010	1.1	< 0.00020	< 0.0010	0.027	0.0031	0.0037	0.012
	13-Jul-2019		0.0063	< 0.00060	0.0014	0.035	< 0.0010	1.3	0.00013	< 0.0010	0.0028	0.0016	< 0.060	< 0.00020	0.069	1.1	0.00090	0.010	< 0.10	< 0.00020	3.9	< 0.00010	1.9	< 0.00020	< 0.0010	< 0.0010	0.0071	< 0.0010	0.0049
(Duplicate)	13-Jul-2019		0.0055	< 0.00060	0.0015	0.034	< 0.0010	1.3	0.00014	< 0.0010	0.0028	0.0016	< 0.060	< 0.00020	0.069	1.1	0.00088	0.010	< 0.10	< 0.00020	3.8	< 0.00010	1.8	< 0.00020	< 0.0010	< 0.0010	0.0072	< 0.0010	0.0048
Well Services Sump - Surficial Sediment																													
MLS 09-9-2	04-Aug-2016	**W-CAT-3**	0.0038	< 0.00060	0.0012	0.70	< 0.0010	0.33	0.00018	< 0.0010	0.0026	0.00066	3.5	< 0.00020	0.046	2.9	< 0.00020	0.0077	< 0.10	< 0.00020	5.1	< 0.00010	3.3	< 0.00020	< 0.0010	< 0.0010	0.0035	< 0.0010	0.0049
	16-Aug-2017		0.0031	< 0.00060	0.00072	0.24	< 0.0010	0.14	0.00029	< 0.0010	0.00050	0.0023	0.32	< 0.00020	0.026	0.33	0.00033	0.0046	< 0.10	0.00025	3.5	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0066	< 0.0010	0.0091
	19-Jul-2018		< 0.0030	< 0.00060	0.00071	0.15	< 0.0010	0.15	0.00030	< 0.0010	0.00069	0.0017	1.0	< 0.00020	0.021	1.2	0.00052	0.0034	< 0.10	< 0.00020	3.3	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	0.0061	< 0.0010	0.012
	14-Jul-2019		< 0.0030	< 0.00060	0.0029	0.20	< 0.0010	0.15	0.00013	< 0.0010	0.0017	0.0027	0.15	< 0.00020	< 0.020	2.3	0.00094	0.0040	< 0.10	0.00029	3.6	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.0079	< 0.0010	0.0055
MLS-13-3-3	05-Aug-2016	**W-CAT-3**	0.0034	< 0.00060	< 0.00020	0.16	< 0.0010	0.17	0.000073	< 0.0010	0.00035	0.00056	< 0.060	< 0.00020	< 0.020	0.098	0.00050	0.033	< 0.10	< 0.00020	3.1	< 0.00010	0.54	< 0.00020	< 0.0010	< 0.0010	0.0039	< 0.0010	0.0072
	16-Aug-2017		< 0.0030	< 0.00060	0.00034	0.13	< 0.0010	0.19	0.000054	< 0.0010	< 0.00030	0.00085	< 0.060	< 0.00020	< 0.020	0.024	0.00054	0.0056	< 0.10	< 0.00020	3.3	< 0.00010	0.67	< 0.00020	< 0.0010	< 0.0010	0.0041	0.0010	0.0072
	19-Jul-2018		---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	0.12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Jul-2019		---	---	---	---	---	---	---	---	---	---	0.76	---	---	0.62	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-13-4-3	05-Aug-2016	**W-CAT-3**	0.0072	< 0.00060	0.0034	0.24	< 0.0010	0.15	< 0.000020	< 0.0010	0.0053	0.00040	3.0	< 0.00020	< 0.020	3.5	0.00052	0.0083	< 0.10	< 0.00020	4.4	< 0.00010	0.55	< 0.00020	< 0.0010	< 0.0010	0.0021	< 0.0010	0.0067
	16-Aug-2017		0.0082	< 0.00060	0.0065	0.36	< 0.0010	0.23	< 0.000020	< 0.0010	0.0089	0.00068	8.1	< 0.00020	< 0.020	5.6	0.00034	0.0096	< 0.10	< 0.00020	5.3	< 0.00010	0.90	< 0.00020	< 0.0010	< 0.0010	0.0034	< 0.0010	0.0071
	19-Jul-2018		0.0037	< 0.00060	0.0047	0.26	< 0.0010	0.25	< 0.000020	< 0.0010	0.0033	0.0018	5.1	< 0.00020	< 0.020	2.3	0.00025	0.0039	< 0.10	< 0.00020	4.9	< 0.00010	0.89	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	0.0080
	14-Jul-2019		0.0064	< 0.00060	0.00069	0.42	< 0.0010	0.095	0.000043	< 0.0010	0.0045	0.0022	1.7	< 0.00020	< 0.020	3.5	0.00051	0.0094	< 0.10	0.00023	4.1	< 0.00010	0.59	< 0.00020	< 0.0010	< 0.0010	0.0031	< 0.0010	0.013
Well Services Sump - Bedrock																													
MLS 02-10-8	04-Aug-2016	**W-CAT-3**	0.0040	< 0.00060	0.0035	7.0 [#2]	< 0.0010	1.9	< 0.000020	< 0.0010	0.00037	0.0012	0.79	< 0.00020	0.28	0.094	0.00050	0.0040	< 0.10	< 0.00020	3.3	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0080
	16-Aug-2017		< 0.0030	< 0.00060	0.0037	9.3	< 0.0010	1.8	< 0.000020	< 0.0010	0.00034	0.00088	2.3	< 0.00020	< 0.20	0.11	0.00058	0.00096	< 1.0	< 0.00020	2.9	< 0.00010	1.7	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0078
MLS-10-2-3	04-Aug-2016	**W-CAT-3**	0.0042	< 0.00060	0.0019	0.020	< 0.0010	1.7	< 0.000020	< 0.0010	0.0012	0.00043	0.25	< 0.00020	0.089	0.36	0.00052	0.0062	< 0.10	0.00027	3.2	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	0.0066	< 0.0010	0.0067
	16-Aug-2017		0.0033	< 0.00060	0.0019	0.017	< 0.0010	2.0	< 0.000020	< 0.0010	0.0023	< 0.00020	0.74	< 0.00020	0.086	0.46	0.00029	0.0085	< 0.10	0.0013	2.9	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	0.0075	0.0012	0.0058
	19-Jul-2018		< 0.0030	< 0.00060	0.0017	< 0.010	< 0.0010	2.0	< 0.000020	< 0.0010	0.0026	0.00040	1.5	< 0.00020	0.12	0.60	< 0.00020	0.011	< 0.10	0.00058	2.9	< 0.00010	2.2	< 0.00020	< 0.0010	0.0011	0.0074	< 0.0010	0.0038
	14-Jul-2019		< 0.0030	< 0.00060	0.0017	0.011	< 0.0010	1.4	< 0.000020	< 0.0010	0.0024	0.00079	0.63	< 0.00020	0.083	0.65	< 0.00020	0.0089	< 0.10	0.00042	2.1	< 0.00010	1.8	< 0.00020	< 0.0010	< 0.0010	0.0057	< 0.0010	0.0072

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
Bear Island - Bear Island West Sumps (Sumps 1-5) - Surficial Sediment																													
BI 08-6-4	08-Aug-2016	**W-CAT-2**	0.0098	< 0.00060	0.0020	0.082	< 0.0010	< 0.020	0.000098	< 0.0010	0.012	0.00050	**76**	< 0.00020	0.024	1.1	0.0045	0.014	< 0.10	0.00084	7.1	< 0.00010	2.5	< 0.00020	< 0.0010	< 0.0010	0.0046	0.0015	0.0097
	11-Aug-2017		0.026	< 0.00060	**0.0071**	0.11	< 0.0010	< 0.020	0.000091	0.0012	0.021	0.00096	**56**	< 0.00020	0.022	1.6	0.0071	0.034	< 0.10	**0.0015**	9.1	< 0.00010	2.2	< 0.00020	< 0.0010	0.0022	0.0050	0.0042	0.017
	17-Jul-2018		0.036	< 0.00060	**0.0069**	0.20	< 0.0010	< 0.020	0.000064	0.0012	0.019	0.0015	**66**	0.00020	0.024	1.2	0.0049	0.036	< 0.10	**0.0014**	9.5	< 0.00010	1.7	< 0.00020	< 0.0010	0.0025	0.0013	0.0053	0.023
	17-Jul-2019		0.0071	< 0.00060	0.0019	0.61	< 0.0010	0.032	< 0.000020	< 0.0010	< 0.00030	0.0027	6.6	< 0.00020	< 0.020	0.25	0.00074	0.0015	< 0.10	0.00025	3.2	< 0.00010	0.84	< 0.00020	< 0.0010	< 0.0010	0.00042	< 0.0010	0.0081
BI 08-8-4	15-Jul-2018	**W-CAT-2**	**0.76**	< 0.00060	**0.018**	1.7	< 0.0010	0.057	0.00027	0.0036	0.0037	**0.011**	**58**	0.0048	0.025	0.77	0.0019	0.011	0.28	0.0010	9.5	< 0.00010	2.1	< 0.00020	< 0.0010	0.012	0.0018	0.0073	**0.041**
	17-Jul-2019		0.045	< 0.00060	**0.021**	0.41	< 0.0010	< 0.020	0.000046	0.0014	0.018	0.0027	**68**	0.00030	0.028	1.7	0.0067	0.034	< 0.10	**0.0011**	7.7	< 0.00010	1.7	< 0.00020	< 0.0010	0.0031	0.0035	0.0062	**0.033**
BIS-10-3-DP	08-Aug-2016	**W-CAT-2**	0.022	< 0.00060	0.0023	0.15	< 0.0010	< 0.020	0.000098	< 0.0010	0.0039	0.0022	0.83	< 0.00020	0.027	1.7	0.0036	0.010	< 0.10	0.00049	6.0	< 0.00010	0.59	< 0.00020	< 0.0010	0.0011	0.0062	0.0014	0.0073
	11-Aug-2017		---	---	---	---	---	---	---	---	---	---	0.16	---	---	0.026	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2018		0.012	< 0.00060	0.0012	0.13	< 0.0010	< 0.020	0.00011	< 0.0010	0.0035	0.0037	0.31	< 0.00020	0.031	1.0	0.0028	0.0079	< 0.10	0.00036	3.8	< 0.00010	0.51	< 0.00020	< 0.0010	< 0.0010	0.0034	< 0.0010	0.0068
	17-Jul-2019		0.018	< 0.00060	0.0011	0.13	< 0.0010	< 0.020	0.000079	< 0.0010	0.0018	0.0036	0.22	< 0.00020	0.023	0.52	0.0024	0.0069	< 0.10	0.00031	2.8	< 0.00010	0.46	< 0.00020	< 0.0010	< 0.0010	0.0032	< 0.0010	0.0090
BI-13-5-2	10-Aug-2016	**W-CAT-2**	0.0089	< 0.00060	0.00057	0.087	< 0.0010	< 0.020	0.000099	< 0.0010	0.00066	0.0039	< 0.060	< 0.00020	< 0.020	0.38	0.0022	0.0059	< 0.10	0.00021	3.3	< 0.00010	0.41	< 0.00020	< 0.0010	< 0.0010	0.0023	< 0.0010	0.0049
	18-Jul-2018		0.086	< 0.00060	0.00065	0.062	< 0.0010	< 0.020	0.000069	< 0.0010	< 0.00030	0.0040	0.21	0.00023	< 0.020	0.014	0.0024	0.0045	< 0.10	< 0.00020	2.5	< 0.00010	0.39	< 0.00020	< 0.0010	0.0041	0.0025	< 0.0010	0.0057
BIS-16-1-3	10-Aug-2016	**W-CAT-2**	0.019	< 0.00060	0.0037	0.091	< 0.0010	< 0.020	0.000050	< 0.0010	0.012	0.0020	**49**	< 0.00020	0.044	2.7	0.0027	0.017	< 0.10	0.00064	9.0	< 0.00010	1.4	< 0.00020	0.0010	< 0.0010	0.0077	0.0019	0.016
	10-Aug-2017		0.013	< 0.00060	0.0014	0.14	< 0.0010	0.038	0.00024	< 0.0010	0.0092	0.0013	9.4	< 0.00020	0.025	2.9	0.0013	0.017	< 0.10	0.00042	7.0	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	0.0092	< 0.0010	0.011
(Duplicate)	10-Aug-2017		0.0081	< 0.00060	0.0015	0.15	< 0.0010	0.039	0.00025	< 0.0010	0.0091	0.0014	10	< 0.00020	0.028	2.9	0.0013	0.017	< 0.10	0.00036	7.1	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	0.0090	< 0.0010	0.011
	17-Jul-2018		0.0044	< 0.00060	0.00048	0.11	< 0.0010	0.031	0.00037	< 0.0010	0.0076	0.0034	2.2	< 0.00020	0.026	2.2	0.00097	0.018	< 0.10	0.00029	5.5	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.0086	< 0.0010	0.016
	17-Jul-2019		0.0042	< 0.00060	0.00036	0.061	< 0.0010	0.021	0.00029	< 0.0010	0.0027	0.0045	0.18	< 0.00020	0.058	1.0	0.00068	0.012	< 0.10	< 0.00020	4.4	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	0.011	< 0.0010	0.011
BIS-16-7-5	08-Aug-2016	**W-CAT-2**	0.0077	< 0.00060	0.0038	1.4	< 0.0010	< 0.020	0.000023	< 0.0010	0.0079	0.00057	**50**	< 0.00020	< 0.020	1.5	0.0066	0.0061	< 0.10	0.00083	7.4	< 0.00010	2.4	< 0.00020	0.0020	< 0.0010	0.0076	0.0013	0.011
	11-Aug-2017		0.015	< 0.00060	**0.011**	1.4	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.0053	0.00056	**43**	< 0.00020	< 0.020	1.3	0.0069	0.0026	< 0.10	0.00077	7.1	< 0.00010	2.4	< 0.00020	0.0018	< 0.0010	0.0062	0.0017	0.0035
	15-Jul-2018		0.0084	< 0.00060	**0.011**	1.5	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.0043	0.00059	**51**	< 0.00020	< 0.020	1.2	0.0072	0.0025	< 0.10	0.00085	6.8	< 0.00010	2.4	< 0.00020	< 0.0010	0.0013	0.0052	0.0020	0.0052
BIS-16-8-3	08-Aug-2016	**W-CAT-2**	0.014	0.00066	0.0011	0.056	< 0.0010	0.042	0.00034	< 0.0010	0.023	0.0042	0.29	< 0.00020	0.041	4.8	0.0023	0.034	< 0.10	0.00065	5.6	< 0.00010	1.9	< 0.00020	0.0034	0.0011	0.015	0.0010	**0.032**
	11-Aug-2017		0.019	< 0.00060	0.0016	0.056	< 0.0010	0.023	0.000091	< 0.0010	0.040	0.0019	4.3	< 0.00020	0.14	6.4	0.0016	0.042	< 0.10	0.00082	6.2	< 0.00010	2.0	< 0.00020	0.0011	< 0.0010	0.027	0.0019	0.026
	15-Jul-2018		0.027	< 0.00060	0.0015	0.047	< 0.0010	< 0.020	**0.00092**	< 0.0010	0.034	0.0029	**13**	0.00031	0.056	5.3	0.0020	0.045	< 0.10	0.0010	5.0	< 0.00010	1.9	< 0.00020	< 0.0010	0.0017	0.021	0.0018	0.026
	17-Jul-2019		0.0057	< 0.00060	0.0012	0.023	< 0.0010	< 0.020	0.00012	< 0.0010	0.0092	0.0025	4.7	< 0.00020	0.26	2.0	0.039	0.016	< 0.10	0.00038	7.4	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	0.022	< 0.0010	0.011
BIS-16-10-4	11-Aug-2016	**W-CAT-2**	0.018	< 0.00060	0.0011	0.087	< 0.0010	< 0.020	0.00011	< 0.0010	0.020	0.0022	7.7	< 0.00020	0.074	4.7	0.0051	0.026	< 0.10	0.0010	8.4	< 0.00010	1.5	< 0.00020	< 0.0010	< 0.0010	0.020	0.0011	0.014
	11-Aug-2017		0.011	< 0.00060	0.0011	0.12	< 0.0010	< 0.020	0.00022	< 0.0010	0.0098	0.0049	3.4	< 0.00020	0.13	2.6	0.0045	0.017	< 0.10	0.00048	8.3	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.021	< 0.0010	0.0055
	20-Jul-2018		0.0092	< 0.00060	0.00063	0.14	< 0.0010	< 0.020	0.00016	< 0.0010	0.0057	0.0035	0.96	< 0.00020	0.086	1.4	0.0030	0.011	< 0.10	0.00043	7.1	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	0.011	< 0.0010	0.011
	17-Jul-2019		0.015	< 0.00060	0.0010	0.25	< 0.0010	< 0.020	0.00017	< 0.0010	0.0079	0.0054	9.5	< 0.00020	0.020	2.1	0.043	0.014	< 0.10	0.00051	6.1	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0089	< 0.0010	0.020
BIS-16-11-4	10-Aug-2016	**W-CAT-2**	0.014	< 0.00060	0.0025	0.030	< 0.0010	< 0.020	0.000055	< 0.0010	0.014	0.0014	**53**	< 0.00020	0.065	3.9	0.0026	0.022	< 0.10	0.00088	7.2	< 0.00010	1.9	< 0.00020	< 0.0010	< 0.0010	0.017	0.0013	0.016
	11-Aug-2017		0.012	< 0.00060	0.0021	0.024	< 0.0010	< 0.020	0.000057	< 0.0010	0.012	0.0016	**72**	< 0.00020	0.024	3.4	0.0038	0.019	< 0.10	**0.0011**	7.1	< 0.00010	2.2	< 0.00020	0.0019	< 0.0010	0.011	0.0020	0.011
	20-Jul-2018		0.0076	< 0.00060	0.0015	0.025	< 0.0010	< 0.020	0.00020	< 0.0010	0.013	0.0015	**51**	< 0.00020	0.033	3.2	0.0031	0.019	< 0.10	0.00096	6.3	< 0.00010	2.2	< 0.00020	< 0.0010	0.0014	0.012	0.0013	0.013
	17-Jul-2019		0.0050	< 0.00060	0.00085	0.021	< 0.0010	< 0.020	0.00012	< 0.0010	0.015	0.0013	**45**	< 0.00020	0.027	3.8	0.0027	0.019	< 0.10	0.00080	6.2	< 0.00010	2.3	< 0.00020	0.0015	< 0.0010	0.012	< 0.0010	0.013
BIS-16-12-5	08-Aug-2016	**W-CAT-2**	0.0054	< 0.00060	0.0037	0.95	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.012	< 0.00020	**32**	< 0.00020	0.021	3.3	0.0038	0.011	< 0.10	0.00068	7.0	< 0.00010	2.1	< 0.00020	0.0021	< 0.0010	0.0093	< 0.0010	0.014
	11-Aug-2017		0.010	< 0.00060	**0.012**	1.1	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.0013	< 0.00020	**29**	< 0.00020	< 0.020	2.7	0.0030	0.0027	< 0.10	0.00050	7.4	< 0.00010	2.2	< 0.00020	< 0.0010	0.0015	0.0062	0.0022	< 0.0030
	17-Jul-2019		0.0060	< 0.00060	**0.014**	1.3	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00040	**35**	< 0.00020	< 0.020	2.3	0.0023	0.0018	< 0.10	0.00050	7.0	< 0.00010	2.3	< 0.00020	< 0.0010	0.0014	0.0034	0.0020	< 0.0030
Bear Island - Bear Island West Sumps (Sumps 1-5) - Surface Water																													
BI-13-11	10-Aug-2016	**W-CAT-7**	---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	< 0.0040	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2017		---	---	---	---	---	---	---	---	---	---	0.11	---	---	0.45	---	---	---	---	---	---	---	---	---	---	---	---	---
Bear Island - Former Bear Island Battery - Surficial Sediment																													
BI-14-13-3	09-Aug-2016	**W-CAT-2**	0.0041	< 0.00060	**0.0058**	0.46	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.0019	0.00083	**15**	< 0.00020	< 0.020	1.2	0.0035	0.0062	< 0.10	0.00029	6.5	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.00086	< 0.0010	0.020
	11-Aug-2017		0.0041	0.00099	0.0030	0.19	< 0.0010	0.036	0.000023	< 0.0010	0.0012	0.00093	0.62	< 0.00020	0.021	1.3	0.0023	0.0030	< 0.10	< 0.00020	2.9	< 0.00010	0.94	< 0.00020	< 0.0010	< 0.0010	0.0023	0.0019	**1.1**
	15-Jul-2018		0.0062	< 0.00060	0.0040	0.17	< 0.0010	< 0.020	0.000041	< 0.0010	0.0066	0.0011	2.6	< 0.00020	< 0.020	2.8	0.0030	0.0045	< 0.10	0.00026	4.3	< 0.00010	0.65	< 0.00020	< 0.0010	< 0.0010	0.0023	< 0.0010	**0.92**
	16-Jul-2019		0.0033	< 0.00060	0.00082	0.25	< 0.0010	< 0.020	0.000026	< 0.0010	0.0017	0.0037	3.0	< 0.00020	< 0.020	1.6	0.0016	0.0036	< 0.10	0.00020	6.7	< 0.00010	0.91	< 0.00020	< 0.0010	< 0.0010	0.0019	< 0.0010	**0.42**

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BI BT1 09-1-4	08-Aug-2016	**W-CAT-2**	0.0040	< 0.00060	0.00042	0.017	< 0.0010	0.032	**0.00065**	< 0.0010	0.012	0.0036	3.1	< 0.00020	0.049	**6.6**	0.00042	**0.024**	< 0.10	0.00043	5.9	< 0.00010	2.7	< 0.00020	< 0.0010	< 0.0010	0.025	< 0.0010	0.020
	10-Aug-2017		0.0048	< 0.00060	0.00052	0.020	< 0.0010	0.035	**0.00050**	< 0.0010	0.019	0.0044	6.0	< 0.00020	0.038	**8.6**	0.00054	**0.029**	< 0.10	0.00050	6.3	< 0.00010	2.7	< 0.00020	< 0.0010	< 0.0010	0.025	< 0.0010	0.016
	17-Jul-2018		0.0069	< 0.00060	0.00040	0.018	< 0.0010	0.029	0.00041	< 0.0010	0.012	0.0041	7.9	< 0.00020	0.034	5.4	0.00051	**0.028**	< 0.10	0.00047	5.1	< 0.00010	2.4	< 0.00020	< 0.0010	< 0.0010	0.024	< 0.0010	0.017
	16-Jul-2019		0.0054	< 0.00060	0.00065	0.017	< 0.0010	0.022	0.00043	< 0.0010	0.012	0.0040	10	< 0.00020	0.047	**6.6**	0.00052	**0.024**	< 0.10	0.00045	6.0	< 0.00010	2.5	< 0.00020	< 0.0010	< 0.0010	0.027	< 0.0010	0.014
BIBT1-15-1-3.5	08-Aug-2016	**W-CAT-2**	**0.034**	0.0012	**0.019**	**0.63**	< 0.0010	< 0.020	< 0.000020	**0.0026**	0.011	0.00025	**58**	< 0.00020	< 0.020	2.4	0.0060	0.016	0.12	**0.0016**	9.3	< 0.00010	2.1	< 0.00020	0.0017	0.0016	0.013	0.0044	0.0095
	10-Aug-2017		0.015	< 0.00060	**0.011**	**0.63**	< 0.0010	< 0.020	< 0.000020	**0.0012**	0.0068	0.00070	**28**	< 0.00020	0.020	0.81	0.0053	0.015	< 0.10	**0.0014**	8.1	< 0.00010	2.2	< 0.00020	< 0.0010	< 0.0010	0.015	0.0023	0.0061
	17-Jul-2018		0.012	< 0.00060	**0.0091**	**0.54**	< 0.0010	< 0.020	< 0.000020	0.0010	0.0054	0.00061	**22**	< 0.00020	< 0.020	0.56	0.0058	0.014	< 0.10	**0.0012**	6.3	< 0.00010	2.1	< 0.00020	< 0.0010	0.0010	0.010	0.0023	0.0068
	16-Jul-2019		0.019	< 0.00060	**0.014**	**0.85**	< 0.0010	< 0.020	< 0.000020	**0.0014**	0.0049	0.0014	**53**	< 0.00020	< 0.020	0.60	0.0072	0.0095	< 0.10	**0.0012**	7.6	< 0.00010	2.5	< 0.00020	< 0.0010	0.0016	0.0079	0.0046	0.0037
BIBT1-15-2-4	08-Aug-2016	**W-CAT-2**	**0.083**	0.0015	**0.029**	**0.65**	< 0.0010	< 0.020	< 0.000020	**0.0030**	0.016	< 0.00020	**49**	< 0.00020	< 0.020	3.2	0.0046	0.016	< 0.10	**0.0024**	8.6	< 0.00010	1.8	< 0.00020	< 0.0010	0.0039	0.011	0.0079	0.0034
(Duplicate)	08-Aug-2016		**0.090**	0.0016	**0.030**	**0.65**	< 0.0010	< 0.020	< 0.000020	**0.0029**	0.016	< 0.00020	**49**	< 0.00020	< 0.020	3.2	0.0047	0.017	< 0.10	**0.0021**	8.7	< 0.00010	1.8	< 0.00020	< 0.0010	0.0033	0.011	0.0081	0.0052
	10-Aug-2017		**0.032**	0.00063	**0.032**	**0.97**	< 0.0010	< 0.020	< 0.000020	**0.0020**	0.0013	0.00041	**34**	< 0.00020	< 0.020	3.6	0.0036	0.0045	< 0.10	0.00096	8.5	< 0.00010	1.8	< 0.00020	0.0014	0.0022	0.0040	0.0044	0.0056
	17-Jul-2018		0.016	< 0.00060	**0.024**	**0.72**	< 0.0010	< 0.020	< 0.000020	**0.0012**	0.0012	0.00049	**32**	< 0.00020	< 0.020	2.2	0.0018	0.0034	< 0.10	0.00093	7.4	< 0.00010	1.6	< 0.00020	< 0.0010	0.0013	0.0017	0.0024	0.0062
(Duplicate)	17-Jul-2018		0.018	< 0.00060	**0.027**	**0.73**	< 0.0010	< 0.020	< 0.000020	**0.0014**	0.0010	0.00031	**35**	< 0.00020	< 0.020	2.3	0.0018	0.0030	< 0.10	**0.0011**	7.4	< 0.00010	1.6	< 0.00020	< 0.0010	0.0018	0.0017	0.0031	0.0057
	16-Jul-2019		0.025	< 0.00060	**0.021**	**0.65**	< 0.0010	< 0.020	< 0.000020	**0.0012**	0.0014	0.00023	**45**	< 0.00020	< 0.020	2.6	**0.045**	0.0027	< 0.10	0.00079	8.4	< 0.00010	1.5	< 0.00020	< 0.0010	0.0020	0.0015	0.0025	0.0041
(Duplicate)	16-Jul-2019		0.025	< 0.00060	**0.021**	**0.64**	< 0.0010	< 0.020	< 0.000020	**0.0012**	0.0014	0.0014	**45**	< 0.00020	< 0.020	2.6	**0.045**	0.0028	< 0.10	0.00081	8.3	< 0.00010	1.5	< 0.00020	< 0.0010	0.0012	0.0016	0.0025	0.0060
BIBT1-15-4-4	11-Aug-2017	**W-CAT-2**	0.0082	< 0.00060	**0.0021**	**0.29**	< 0.0010	0.028	0.000073	< 0.0010	0.0039	0.0012	1.1	< 0.00020	< 0.020	1.7	0.0027	0.0091	< 0.10	0.00032	3.9	< 0.00010	1.2	< 0.00020	< 0.0010	< 0.0010	0.0063	0.0011	0.0073
	15-Jul-2018		**0.25**	< 0.00060	**0.0022**	0.21	< 0.0010	0.024	0.00013	< 0.0010	0.0023	0.0035	1.9	**0.0012**	< 0.020	0.48	0.00087	0.0067	< 0.10	0.00020	3.8	< 0.00010	0.71	< 0.00020	< 0.0010	0.0025	0.0041	0.0016	0.023
	16-Jul-2019		0.0062	< 0.00060	0.0013	0.12	< 0.0010	0.022	0.000042	< 0.0010	0.0020	0.0022	1.0	< 0.00020	< 0.020	0.51	0.0020	0.0044	< 0.10	< 0.00020	2.6	< 0.00010	0.46	< 0.00020	< 0.0010	< 0.0010	0.0018	< 0.0010	0.014
BIBT1-15-5-3	08-Aug-2016	**W-CAT-2**	0.016	< 0.00060	0.0014	0.18	< 0.0010	< 0.020	0.000071	< 0.0010	0.0040	0.00047	0.66	< 0.00020	< 0.020	1.6	0.0018	0.0071	< 0.10	< 0.00020	3.8	< 0.00010	0.69	< 0.00020	< 0.0010	< 0.0010	0.0032	< 0.0010	0.0090
	11-Aug-2017		0.0040	< 0.00060	0.00023	0.099	< 0.0010	< 0.020	0.00012	< 0.0010	< 0.00030	0.0020	< 0.060	< 0.00020	< 0.020	0.14	0.0026	0.0030	< 0.10	< 0.00020	2.6	< 0.00010	0.34	< 0.00020	< 0.0010	< 0.0010	0.0017	0.0015	0.0090
BIBT1-15-7-4	08-Aug-2016	**W-CAT-2**	0.0049	< 0.00060	0.00051	**0.26**	< 0.0010	0.030	0.00023	< 0.0010	0.018	0.00079	0.075	< 0.00020	< 0.020	5.1	0.0011	**0.025**	< 0.10	0.00026	5.5	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	0.0048	< 0.0010	**0.031**
	11-Aug-2017		0.0076	< 0.00060	0.00056	0.21	< 0.0010	< 0.020	0.00017	< 0.0010	0.0049	0.0015	2.9	< 0.00020	< 0.020	1.3	0.00095	0.0091	< 0.10	< 0.00020	3.2	< 0.00010	0.67	< 0.00020	< 0.0010	< 0.0010	0.0026	0.0013	0.025
	15-Jul-2018		0.012	< 0.00060	**0.0060**	**0.34**	< 0.0010	< 0.020	0.00012	< 0.0010	0.019	0.0031	**48**	< 0.00020	< 0.020	3.8	0.0031	**0.028**	< 0.10	**0.0011**	7.4	< 0.00010	1.3	< 0.00020	< 0.0010	0.0011	0.0033	0.0015	0.029
	16-Jul-2019		0.011	< 0.00060	**0.013**	**0.33**	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.0093	0.0017	**45**	< 0.00020	< 0.020	2.6	0.0056	0.016	< 0.10	0.00078	6.6	< 0.00010	0.93	< 0.00020	< 0.0010	< 0.0010	0.0019	0.0013	0.0074
BIBT1-16-1-3	04-Oct-2016	**W-CAT-2**	0.0077	< 0.00060	**0.0042**	0.16	< 0.0010	0.032	0.00016	< 0.0010	0.021	0.0013	**52**	< 0.00020	< 0.020	3.5	0.0016	**0.038**	< 0.10	0.00029	8.3	< 0.00010	1.5	< 0.00020	< 0.0010	< 0.0010	0.0036	< 0.0010	0.023
	11-Aug-2017		0.0052	< 0.00060	0.00071	**0.33**	< 0.0010	0.028	0.00010	< 0.0010	0.0033	0.0010	5.3	< 0.00020	< 0.020	1.4	0.0035	0.0067	< 0.10	< 0.00020	5.3	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.0038	< 0.0010	**0.037**
	15-Jul-2018		< 0.0030	< 0.00060	**0.0021**	0.14	< 0.0010	0.029	0.000044	< 0.0010	0.0018	0.00086	0.14	< 0.00020	< 0.020	1.1	0.0099	0.0042	< 0.10	0.00020	3.7	< 0.00010	0.48	< 0.00020	< 0.0010	< 0.0010	0.0032	< 0.0010	0.0040
	16-Jul-2019		0.0035	< 0.00060	0.0011	0.14	< 0.0010	**0.041**	0.000066	< 0.0010	0.0016	0.00079	1.0	< 0.00020	< 0.020	0.58	0.0032	0.0047	< 0.10	< 0.00020	3.9	< 0.00010	0.89	< 0.00020	< 0.0010	< 0.0010	0.0048	< 0.0010	0.0067
BIBT1-16-2-3	03-Oct-2016	**W-CAT-2**	0.0064	< 0.00060	**0.010**	0.16	< 0.0010	**0.059**	0.00014	< 0.0010	0.015	0.0012	**15**	< 0.00020	< 0.020	2.0	0.0012	**0.027**	< 0.10	0.00058	8.9	< 0.00010	1.9	< 0.00020	< 0.0010	< 0.0010	0.0042	< 0.0010	0.015
	11-Aug-2017		0.0049	< 0.00060	**0.0022**	**0.26**	< 0.0010	0.034	0.00016	< 0.0010	0.0076	0.00084	**13**	< 0.00020	< 0.020	1.8	0.0025	0.017	< 0.10	0.00025	6.9	< 0.00010	1.8	< 0.00020	< 0.0010	< 0.0010	0.0026	0.0011	**0.031**
	15-Jul-2018		0.0034	< 0.00060	0.0018	0.17	< 0.0010	0.022	0.00012	< 0.0010	0.0034	0.00095	0.53	< 0.00020	< 0.020	0.82	0.0016	0.0060	< 0.10	0.00025	4.2	< 0.00010	0.80	< 0.00020	< 0.0010	< 0.0010	0.0031	< 0.0010	0.013
(Duplicate)	15-Jul-2018		0.0035	< 0.00060	0.0015	0.17	< 0.0010	0.023	0.00012	< 0.0010	0.0037	0.0012	0.72	< 0.00020	< 0.020	0.85	0.0014	0.0063	< 0.10	0.00023	4.3	< 0.00010	0.83	< 0.00020	< 0.0010	< 0.0010	0.0032	< 0.0010	0.014
	16-Jul-2019		0.0085	< 0.00060	0.0020	0.22	< 0.0010	0.022	0.000022	< 0.0010	0.0027	0.00084	2.1	< 0.00020	< 0.020	0.90	0.0017	0.0065	< 0.10	< 0.00020	4.8	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.0048	< 0.0010	0.010
BIBT1-16-3-3	03-Oct-2016	**W-CAT-2**	0.0044	< 0.00060	**0.0050**	0.11	< 0.0010	0.040	< 0.000020	< 0.0010	0.0057	0.00056	0.89	< 0.00020	< 0.020	1.3	0.0039	0.0086	< 0.10	0.00039	4.1	< 0.00010	0.59	< 0.00020	< 0.0010	< 0.0010	0.0045	< 0.0010	0.0090
	11-Aug-2017		< 0.0030	< 0.00060	0.0016	0.084	< 0.0010	0.021	0.000029	< 0.0010	0.0022	0.00056	4.1	< 0.00020	< 0.020	0.99	0.0028	0.0056	< 0.10	< 0.00020	4.0	< 0.00010	0.60	< 0.00020	< 0.0010	< 0.0010	0.0029	< 0.0010	0.0097
	15-Jul-2018		0.0065	< 0.00060	0.00081	0.073	< 0.0010	< 0.020	0.000041	< 0.0010	0.00089	0.0015	< 0.060	< 0.00020	< 0.020	0.39	0.0020	0.0030	< 0.10	0.00027	2.3	< 0.00010	0.28	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030
	16-Jul-2019		0.0083	< 0.00060	**0.0021**	0.13	< 0.0010	0.025	0.000060	< 0.0010	0.0020	0.0010	0.10	< 0.00020	< 0.020	1.1	0.0017	0.0042	< 0.10	< 0.00020	3.5	< 0.00010	0.52	< 0.00020	< 0.0010	< 0.0010	0.0019	< 0.0010	0.0039
Bear Island - Bear Island East Sump (Sump 6) - Surficial Sediment																													
BI 08-2-3	07-Aug-2016	**W-CAT-2**	0.0042	< 0.00060	0.00040	0.028	< 0.0010	0.028	**0.00051**	< 0.0010	0.012	0.0035	0.18	< 0.00020	0.049	3.0	0.00061	**0.024**	< 0.10	0.00035	5.2	< 0.00010	2.0	< 0.00020	< 0.0010	< 0.0010	0.012	< 0.0010	0.020
	15-Aug-2017		0.026	< 0.00060	0.00099	0.033	< 0.0010	< 0.020	0.00035	< 0.0010	0.022	0.0014	**120**	< 0.00020	0.035	3.5	0.00071	**0.043**	< 0.10	0.00099	7.5	< 0.00010	2.3	< 0.00020	< 0.0010	0.0011	0.0087	0.0018	0.020
BI-13-2-4.5	07-Aug-2016	**W-CAT-2**	0.016	< 0.00060	**0.011**	**0.25**	< 0.0010	< 0.020	< 0.000020	**0.0028**	0.0051	< 0.00020	**51**	< 0.00020	< 0.020	0.92	0.0044	0.0077	< 0.10	**0.0013**	6.8	< 0.00010	1.7	< 0.00020	< 0.0010	< 0.0010	0.0012	0.0020	0.0063
	15-Aug-2017		0.018	< 0.00060	**0.0082**	0.19	< 0.0010	< 0.020	< 0.000020	**0.0011**	0.0069	0.00061	**43**	< 0.00020	< 0.020	0.94	0.0048	0.016	< 0.10	**0.0012**	6.6	< 0.00010	1.6	< 0.00020	< 0.0010	0.0013	0.0018	0.0020	0.0047
BIWS-16-1-4	03-Oct-2016	**W-CAT-2**	0.011	< 0.00060	0.0020	0.040	< 0.0010	0.039	0.00015	< 0.0010	0.057	0.0011	**48**	< 0.00020	0.037	4.0	0.0013	**0.070**	< 0.10	0.00086	7.8	< 0.00010	2.0	< 0.00020	< 0.0010	< 0.0010	0.013	< 0.0010	0.027
	15-Aug-2017		0.0056	< 0.00060	**0.0022**	0.019	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.032	0.0014	**69**	< 0.00020	0.021	1.7	0.00068	**0.035**	< 0.10	0.00056	7.2	< 0.00010	1.7	< 0.00020	< 0.0010	< 0.0010	0.0093	< 0.0010	0.020
	18-Jul-2018		0.0037	< 0.00060	**0.0030**	0.019	< 0.0010	0.020	0.000055	< 0.0010	0.032	0.00053	**81**	< 0.00020	0.022	1.7	0.00087	**0.035**	< 0.10	0.00067	6.9	< 0.00010	1.7	< 0.00020	< 0.0010	< 0.0010	0.0074	< 0.0010	0.013
	12-Jul-2019		0.0051	< 0.00060	0.00028	0.011	< 0.0010	< 0.020	0.000021	< 0.0010	0.019	0.0035	2.2	< 0.00020	< 0.020	1.1	0.00047	**0.024**	< 0.10	0.00030	3.5	< 0.00010	1.2	< 0.00020	< 0.0010	< 0.0010	0.0043	< 0.0010	0.026

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
Bear Island - Bear Island East Sump (Sump 6) - Surface Water																													
BIS6-17-SW01	27-Sep-2017	**W-CAT-7**	0.0042	< 0.00060	0.00082	0.17	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.00020	0.082	< 0.00020	< 0.020	0.054	0.00026	0.00083	< 0.10	< 0.00020	0.50	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.00011	0.0013	< 0.0030
BI SW-13-1	11-Aug-2016	**W-CAT-7**	---	---	---	---	---	---	---	---	---	---	0.067	---	---	0.0045	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2017		---	---	---	---	---	---	---	---	---	---	5.4	---	---	2.0	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	0.0077	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2019		---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	0.0050	---	---	---	---	---	---	---	---	---	---	---	---	---
Bear Island - N-42X Well Site - Surficial Sediment																													
BIB 98-2-5	08-Aug-2016	**W-CAT-2**	0.0065	< 0.00060	0.0022	0.075	< 0.0010	< 0.020	0.000086	< 0.0010	0.011	0.00077	100	< 0.00020	< 0.020	1.3	0.0013	0.032	< 0.10	0.00078	7.0	< 0.00010	3.0	< 0.00020	< 0.0010	< 0.0010	0.0042	< 0.0010	0.0087
	10-Aug-2017		0.0094	< 0.00060	0.0022	0.075	< 0.0010	< 0.020	0.000080	< 0.0010	0.0085	0.0016	110	< 0.00020	0.023	1.2	0.0022	0.030	< 0.10	0.00076	7.5	< 0.00010	3.1	< 0.00020	0.0013	< 0.0010	0.0034	< 0.0010	0.0097
	17-Jul-2018		0.042	< 0.00060	0.0035	0.061	< 0.0010	< 0.020	0.000057	< 0.0010	0.0096	0.0028	70	< 0.00020	< 0.020	1.2	0.0011	0.029	< 0.10	0.00065	6.5	< 0.00010	2.9	< 0.00020	< 0.0010	0.0020	0.0030	< 0.0010	0.012
	17-Jul-2019		0.0078	< 0.00060	0.0022	0.064	< 0.0010	< 0.020	0.000046	< 0.0010	0.0068	0.0027	110	0.00029	< 0.020	1.1	0.0019	0.023	< 0.10	0.00061	7.2	< 0.00010	3.0	< 0.00020	< 0.0010	< 0.0010	0.0025	< 0.0010	0.022
BIN42-10-1-5	08-Aug-2016	**W-CAT-2**	0.013	< 0.00060	0.0043	0.035	< 0.0010	< 0.020	0.00014	< 0.0010	0.012	0.00045	21	0.00021	0.034	2.4	0.0011	0.022	< 0.10	0.00057	5.4	< 0.00010	2.1	< 0.00020	< 0.0010	< 0.0010	0.0078	< 0.0010	0.022
(Duplicate)	08-Aug-2016		0.015	< 0.00060	0.0044	0.034	< 0.0010	0.022	0.00013	< 0.0010	0.013	0.00053	21	< 0.00020	0.033	2.4	0.0013	0.023	< 0.10	0.00073	5.4	< 0.00010	2.1	< 0.00020	< 0.0010	< 0.0010	0.0085	< 0.0010	0.020
	10-Aug-2017		0.024	< 0.00060	0.013	0.030	< 0.0010	0.025	0.000050	< 0.0010	0.013	0.0014	39	< 0.00020	0.032	1.9	0.0015	0.022	< 0.10	0.00081	6.1	< 0.00010	2.2	< 0.00020	< 0.0010	< 0.0010	0.0064	0.0012	0.017
(Duplicate)	10-Aug-2017		0.024	< 0.00060	0.013	0.030	< 0.0010	0.021	0.000037	< 0.0010	0.013	0.00099	39	< 0.00020	0.028	1.9	0.0015	0.021	< 0.10	0.00075	6.0	< 0.00010	2.2	< 0.00020	< 0.0010	< 0.0010	0.0064	0.0011	0.013
	17-Jul-2018		0.013	< 0.00060	0.0053	0.034	< 0.0010	0.023	< 0.000020	< 0.0010	0.0075	0.00096	13	< 0.00020	0.040	1.3	0.0014	0.019	< 0.10	0.00071	4.6	< 0.00010	1.8	< 0.00020	< 0.0010	0.0012	0.011	0.0011	0.012
(Duplicate)	17-Jul-2018		0.013	< 0.00060	0.0054	0.035	< 0.0010	0.022	< 0.000020	< 0.0010	0.0078	0.0012	12	< 0.00020	0.039	1.2	0.0013	0.019	< 0.10	0.00070	4.4	< 0.00010	1.8	< 0.00020	< 0.0010	0.0011	0.011	0.0010	0.014
	17-Jul-2019		0.014	< 0.00060	0.0056	0.027	< 0.0010	< 0.020	0.00019	< 0.0010	0.012	0.0026	37	< 0.00020	0.025	1.8	0.0015	0.022	< 0.10	0.00065	5.3	< 0.00010	2.1	< 0.00020	< 0.0010	< 0.0010	0.0067	< 0.0010	0.022
Bear Island - N-42X Well Site - Surface Water																													
BIN42 SW01	08-Aug-2016	**W-CAT-7**	---	---	---	---	---	---	---	---	---	---	0.065	---	---	< 0.0040	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-Aug-2017		---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	0.0072	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Jul-2018		---	---	---	---	---	---	---	---	---	---	0.071	---	---	0.0052	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Jul-2019		---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	< 0.0040	---	---	---	---	---	---	---	---	---	---	---	---	---
Bear Island - Former Bear Island Flare Pit - Surficial Sediment																													
BIFP-16-1-3	04-Oct-2016	**W-CAT-2**	0.0061	< 0.00060	0.0039	0.44	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.0043	0.00072	2.4	< 0.00020	< 0.020	1.2	0.0052	0.012	< 0.10	0.00031	4.9	< 0.00010	0.81	< 0.00020	< 0.0010	< 0.0010	0.0025	< 0.0010	0.0040
	10-Aug-2017		0.0062	0.0018	0.0015	0.030	< 0.0010	0.095	0.000041	< 0.0010	0.0015	0.0011	< 0.060	< 0.00020	< 0.020	0.27	0.017	0.0075	< 0.10	0.00034	4.4	< 0.00010	0.27	< 0.00020	< 0.0010	< 0.0010	0.0056	< 0.0010	0.0034
	20-Jul-2018		0.0088	0.0036	0.00086	0.046	< 0.0010	0.088	0.000065	< 0.0010	0.00051	0.0031	< 0.060	0.00037	0.023	0.18	0.026	0.0055	< 0.10	0.00041	3.4	< 0.00010	0.28	< 0.00020	< 0.0010	< 0.0010	0.015	< 0.0010	0.0031
	12-Jul-2019		0.017	0.0011	0.00055	0.047	< 0.0010	0.051	0.00017	< 0.0010	0.0033	0.0048	0.091	0.00023	0.025	0.47	0.0056	0.010	< 0.10	0.00024	4.0	< 0.00010	0.33	< 0.00020	< 0.0010	< 0.0010	0.0036	< 0.0010	0.014
BIFP-16-2-3	04-Oct-2016	**W-CAT-2**	0.0074	< 0.00060	0.0047	0.22	< 0.0010	0.047	< 0.000020	< 0.0010	0.0028	0.00063	0.15	< 0.00020	< 0.020	0.35	0.0058	0.0077	< 0.10	0.00053	4.2	< 0.00010	0.38	< 0.00020	< 0.0010	< 0.0010	0.0020	0.0011	0.0034
	20-Jul-2018		< 0.0030	0.0012	0.00045	0.038	< 0.0010	0.049	0.000044	< 0.0010	0.00044	0.0020	< 0.060	< 0.00020	< 0.020	0.11	0.0055	0.0039	< 0.10	0.00036	3.0	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.0043	< 0.0010	< 0.0030
	12-Jul-2019		0.0081	0.0015	0.00060	0.068	< 0.0010	0.050	0.00010	< 0.0010	0.00097	0.0036	< 0.060	< 0.00020	0.025	0.26	0.0052	0.0056	< 0.10	0.00025	3.6	< 0.00010	0.42	< 0.00020	< 0.0010	< 0.0010	0.0096	< 0.0010	0.0044
BIFP-16-3-3	04-Oct-2016	**W-CAT-2**	0.0063	< 0.00060	0.0059	0.59	< 0.0010	0.030	0.000020	< 0.0010	0.016	0.00069	11	< 0.00020	< 0.020	2.6	0.0047	0.020	< 0.10	0.00051	7.6	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.0041	0.0012	0.0076
	10-Aug-2017		0.013	0.0014	0.0011	0.030	< 0.0010	0.097	0.000049	< 0.0010	0.0016	0.0012	< 0.060	< 0.00020	< 0.020	0.33	0.014	0.0071	< 0.10	0.00033	4.8	< 0.00010	0.25	< 0.00020	< 0.0010	< 0.0010	0.0037	< 0.0010	< 0.0030
	20-Jul-2018		< 0.0030	0.0014	0.00043	0.048	< 0.0010	0.052	0.000063	< 0.0010	0.00069	0.0016	< 0.060	< 0.00020	< 0.020	0.27	0.0066	0.0043	< 0.10	0.00050	3.3	< 0.00010	0.31	< 0.00020	< 0.0010	< 0.0010	0.0046	< 0.0010	< 0.0030
	12-Jul-2019		0.059	0.0011	0.00038	0.057	< 0.0010	0.040	0.000051	< 0.0010	0.0010	0.0032	0.16	0.00036	0.021	0.32	0.0050	0.0036	< 0.10	< 0.00020	3.5	< 0.00010	0.34	< 0.00020	< 0.0010	0.0013	0.0048	< 0.0010	0.0062
BIFP-17-1-3	15-Oct-2017	**W-CAT-2**	---	---	---	---	---	---	---	---	---	---	1.6	---	---	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2018		0.42	< 0.00060	0.0017	0.34	< 0.0010	0.025	0.00031	< 0.0010	0.0034	0.0087	6.6	0.0026	0.020	0.39	0.00044	0.0094	0.15	0.00027	3.9	< 0.00010	0.77	< 0.00020	< 0.0010	0.0069	0.0036	0.0020	0.031
	12-Jul-2019		0.0091	< 0.00060	0.00063	0.31	< 0.0010	< 0.020	0.000075	< 0.0010	0.0020	0.00090	5.4	< 0.00020	< 0.020	0.39	0.00066	0.0067	< 0.10	< 0.00020	3.3	< 0.00010	0.73	< 0.00020	< 0.0010	< 0.0010	0.0028	< 0.0010	0.0060
Bear Island - Former Bear Island Flare Pit - Surface Water																													
BIFP-16-SW1	04-Oct-2016	**W-CAT-7**	---	---	---	---	---	---	---	---	---	---	0.16	---	---	0.0077	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-Aug-2017		---	---	---	---	---	---	---	---	---	---	0.098	---	---	0.027	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Sep-2017		0.0034	< 0.00060	0.00050	0.14	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00037	0.18	< 0.00020	< 0.020	< 0.0040	0.0016	0.0012	< 0.10	< 0.00020	0.51	< 0.00010	0.18	< 0.00020	< 0.0010	< 0.0010	0.00024	< 0.0010	< 0.0030
	20-Jul-2018		---	---	---	---	---	---	---	---	---	---	0.49	---	---	0.061	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2019		---	---	---	---	---	---	---	---	---	---	0.42	---	---	0.060	---	---	---	---	---	---	---	---	---	---	---	---	---

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BIFP-17-SW2	27-Sep-2017	**W-CAT-7**	0.0033	< 0.00060	0.0010	0.15	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.00020	0.44	< 0.00020	< 0.020	0.086	0.0015	0.0013	< 0.10	< 0.00020	0.75	< 0.00010	0.20	< 0.00020	< 0.0010	< 0.0010	0.00023	0.0010	< 0.0030
	20-Jul-2018		---	---	---	---	---	---	---	---	---	---	5.8	---	---	1.8	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2019		---	---	---	---	---	---	---	---	---	---	0.16	---	---	0.041	---	---	---	---	---	---	---	---	---	---	---	---	---
BI SW09	12-Jul-2019	**W-CAT-7**	---	---	---	---	---	---	---	---	---	---	0.10	---	---	0.027	---	---	---	---	---	---	---	---	---	---	---	---	---
Goose Island - Surficial Sediment																													
GIP9 09-1-4	07-Aug-2016	**W-CAT-2**	0.0051	< 0.00060	0.00029	0.059	< 0.0010	0.033	0.00084	< 0.0010	0.00076	0.0035	< 0.060	< 0.00020	0.038	0.24	0.00044	0.016	< 0.10	0.00023	5.3	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.0072	< 0.0010	0.024
Goose Island - Surface Water																													
GI SW05	20-Aug-2017	**W-CAT-8**	---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	< 0.0040	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Aug-2017		---	---	---	---	---	---	---	---	---	---	< 0.060	---	---	0.0043	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Aug-2019		0.013	< 0.00060	0.00071	0.063	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00080	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0012	0.00097	< 0.10	< 0.00020	< 0.10	< 0.00010	0.18	< 0.00020	0.0024	< 0.0010	0.00037	< 0.0010	< 0.0030
Relative Percent Difference (RPD) Report																													
CPF 09-6-19	19-Jun-2019	**W-CAT-3**	< 0.0030	< 0.00060	0.00036	0.073	< 0.0010	0.33	< 0.000020	< 0.0010	< 0.00030	0.00046	0.54	< 0.00020	0.024	0.37	0.0021	0.0040	< 0.10	0.0039	4.0	< 0.00010	0.55	< 0.00020	< 0.0010	< 0.0010	0.0028	< 0.0010	< 0.0030
(Duplicate)	19-Jun-2019		< 0.0030	< 0.00060	0.00038	0.073	< 0.0010	0.33	< 0.000020	< 0.0010	< 0.00030	0.0011	0.53	< 0.00020	0.024	0.37	0.0022	0.0044	< 0.10	0.0036	4.0	< 0.00010	0.55	< 0.00020	< 0.0010	< 0.0010	0.0028	< 0.0010	0.0034
RPD(%)			---	---	5.4%	0.0%	---	0.0%	---	---	---	82.1%	1.9%	---	0.0%	0.0%	4.7%	9.5%	---	8.0%	0.0%	---	0.0%	---	---	---	---	0.0%	---	---
C27-16-2-3	11-Jul-2019	**W-CAT-1**	0.0034	< 0.00060	0.00065	0.076 #1	< 0.0010	0.19	0.00012	< 0.0010	< 0.00030	0.0039	< 0.060	< 0.00020	0.080	0.089	0.00042	0.0090	< 0.10	0.00046	5.3 #1	< 0.00010	0.73	< 0.00020	< 0.0010	< 0.0010	0.021	< 0.0010	0.020
(Duplicate)	11-Jul-2019		0.0032	< 0.00060	0.00075	0.073	< 0.0010	0.19	0.00014	< 0.0010	< 0.00030	0.0035	< 0.060	< 0.00020	0.080	0.090	0.00043	0.0088	< 0.10	0.00042	5.3	< 0.00010	0.74	< 0.00020	< 0.0010	< 0.0010	0.021	< 0.0010	0.018
RPD(%)			6.1%	---	14.3%	4.0%	---	0.0%	15.4%	---	---	10.8%	---	---	0.0%	1.1%	2.4%	2.2%	---	9.1%	0.0%	---	1.4%	---	---	---	0.0%	---	10.5%
ARB-13-5-4.5	11-Jul-2019	**W-CAT-1**	0.0032	< 0.00060	0.0029	0.24	< 0.0010	0.13	0.000023	< 0.0010	0.0012	0.00062	0.34	< 0.00020	< 0.020	0.48	0.0043	0.0054	< 0.10	0.00031	4.1	< 0.00010	2.3	< 0.00020	< 0.0010	< 0.0010	0.012	< 0.0010	0.0033
(Duplicate)	11-Jul-2019		0.0069	< 0.00060	0.0026	0.25 #1	< 0.0010	0.14	< 0.000020	< 0.0010	0.0013	0.00076	0.35	< 0.00020	< 0.020	0.50	0.0042	0.0055	< 0.10	< 0.00020	4.0 #1	< 0.00010	2.4	< 0.00020	< 0.0010	< 0.0010	0.012	< 0.0010	0.0042
RPD(%)			**73.3%**	---	10.9%	4.1%	---	7.4%	---	---	8.0%	20.3%	2.9%	---	---	4.1%	2.4%	1.8%	---	---	2.5%	---	4.3%	---	---	---	0.0%	---	24.0%
B30X-12-1-4	13-Jul-2019	**W-CAT-1**	0.086	< 0.00060	0.035	0.34	< 0.0010	< 0.20	0.000029	0.0034	0.0057	0.0011	33	0.00047	< 0.20	0.64	0.019	0.063	< 1.0	0.0015	5.0	< 0.00010	0.56	< 0.00020	< 0.0010	0.0054	0.0094	0.012	0.0046
(Duplicate)	13-Jul-2019		0.089	< 0.00060	0.034	0.34	< 0.0010	< 0.20	0.000024	0.0031	0.0057	0.0011	33	0.00048	< 0.20	0.64	0.019	0.063	< 1.0	0.0014	4.9	< 0.00010	0.56	< 0.00020	< 0.0010	0.0098	0.0095	0.012	0.043
RPD(%)			3.4%	---	2.9%	0.0%	---	---	18.9%	9.2%	0.0%	0.0%	0.0%	2.1%	---	0.0%	0.0%	0.0%	---	6.9%	2.0%	---	0.0%	---	**---**	**57.9%**	1.1%	0.0%	**161.3%**
BT3 99-23-13	13-Jul-2019	**W-CAT-3**	< 0.0030	< 0.00060	0.00050	0.58	< 0.0010	1.7	< 0.000020	< 0.0010	< 0.00030	0.00045	< 0.60	< 0.00020	0.21	0.15	< 0.00020	0.0010	< 1.0	0.0011	3.0	< 0.00010	6.6	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030
(Duplicate)	13-Jul-2019		< 0.0030	< 0.00060	0.00057	0.59	< 0.0010	1.7	< 0.000020	< 0.0010	< 0.00030	0.00034	< 0.60	< 0.00020	0.21	0.14	< 0.00020	0.00071	< 1.0	0.00097	2.9	< 0.00010	6.6	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030
RPD(%)			---	---	13.1%	1.7%	---	0.0%	---	---	---	27.8%	---	---	0.0%	6.9%	---	33.9%	---	12.6%	3.4%	---	0.0%	---	---	---	---	---	---	---
E33-18-1-2.5	11-Jul-2019	**W-CAT-1**	0.70	< 0.00060	0.0033	< 0.10	< 0.0010	< 0.20	0.00016	0.0020	0.0039	0.0019	210	0.0039	< 0.20	3.3	0.0039	0.031	< 1.0	0.00035	5.0	< 0.00010	3.2	< 0.00020	< 0.0010	0.0067	0.0082	0.0039	0.068
(Duplicate)	11-Jul-2019		0.80	< 0.00060	0.0036	< 0.10	< 0.0010	< 0.20	0.00018	0.0021	0.0042	0.0022	210	0.0043	< 0.20	3.3	0.0039	0.032	< 1.0	0.00026	5.0	< 0.00010	3.2	< 0.00020	< 0.0010	0.0073	0.0084	0.0040	0.043
RPD(%)			13.3%	---	8.7%	---	---	---	11.8%	4.9%	7.4%	14.6%	0.0%	9.8%	---	0.0%	0.0%	3.2%	---	29.5%	0.0%	---	0.0%	---	---	8.6%	2.4%	2.5%	45.0%
C36-10-2-3	15-Jul-2019	**W-CAT-1**	0.0038	< 0.00060	0.00046	1.1	< 0.0010	0.35	0.00069	< 0.0010	0.0023	0.0042	2.5	< 0.00020	0.030	0.37	0.00052	0.012	< 0.10	0.00058	4.2	< 0.00010	0.79	< 0.00020	< 0.0010	< 0.0010	0.0089	< 0.0010	0.0059
(Duplicate)	15-Jul-2019		< 0.0030	< 0.00060	0.00042	1.1	< 0.0010	0.35	0.00067	< 0.0010	0.0021	0.0029	2.5	< 0.00020	0.030	0.38	0.00044	0.012	< 0.10	0.00061	4.2	< 0.00010	0.80	< 0.00020	< 0.0010	< 0.0010	0.0089	< 0.0010	0.0043
RPD(%)			---	---	9.1%	0.0%	---	0.0%	2.9%	---	9.1%	36.6%	0.0%	---	0.0%	2.7%	16.7%	0.0%	---	5.0%	0.0%	---	1.3%	---	---	---	0.0%	---	31.4%
B38-10-2-5	14-Jul-2019	**W-CAT-5**	0.0091	< 0.00060	0.016	1.9	< 0.0010	0.078	< 0.000020	0.0014	0.0014	0.00045	16	< 0.00020	< 0.020	0.26	0.00061	0.0029	0.78	0.00078	8.1	< 0.00010	1.2	< 0.00020	< 0.0010	0.0024	0.00023	0.0033	0.0060
(Duplicate)	14-Jul-2019		0.0088	< 0.00060	0.015	1.9	< 0.0010	0.080	< 0.000020	0.0013	0.0013	0.00079	16	< 0.00020	< 0.020	0.26	0.00059	0.0029	0.78	0.00068	8.1	< 0.00010	1.2	< 0.00020	< 0.0010	0.0018	0.00024	0.0033	0.0061
RPD(%)			3.4%	---	6.5%	0.0%	---	2.5%	---	7.4%	7.4%	**54.8%**	0.0%	---	---	0.0%	3.3%	0.0%	0.0%	13.7%	0.0%	---	0.0%	---	---	28.6%	4.3%	0.0%	1.7%
RCF 98-3-4	12-Jul-2019	**W-CAT-1**	0.0081	< 0.00060	0.0011	0.056	< 0.0010	0.036	< 0.000020	< 0.0010	0.0017	0.00071	2.2	< 0.00020	0.021	0.17	0.00044	0.0044	< 0.10	< 0.00020	4.5	< 0.00010	0.71	< 0.00020	< 0.0010	< 0.0010	0.013	< 0.0010	0.0058
(Duplicate)	12-Jul-2019		0.010	< 0.00060	0.0013	0.051	< 0.0010	0.035	< 0.000020	< 0.0010	0.0017	0.00075	2.2	< 0.00020	< 0.020	0.17	0.00036	0.0041	< 0.10	< 0.00020	4.4	< 0.00010	0.71	< 0.00020	< 0.0010	< 0.0010	0.013	< 0.0010	0.074
RPD(%)			**21.0%**	**---**	**16.7%**	**9.3%**	**---**	**2.8%**	**---**	**---**	**0.0%**	**5.5%**	**0.0%**	**---**	**---**	**0.0%**	**20.0%**	**7.1%**	**---**	**---**	**2.2%**	**---**	**0.0%**	**---**	**---**	**---**	**0.0%**	**---**	**170.9%**
NWR 09-2-26	15-Jul-2019	**W-CAT-3**	0.012	0.0012	0.0060	1.3	< 0.0010	0.21	< 0.000020	< 0.0010	0.0022	0.00052	0.47	< 0.00020	0.068	0.47	0.0061	0.0075	< 0.10	0.00077	5.0	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	0.0066	0.0015	0.012
(Duplicate)	15-Jul-2019		0.0090	0.0013	0.0063	1.3	< 0.0010	0.21	< 0.000020	< 0.0010	0.0024	0.00040	0.46	< 0.00020	0.068	0.47	0.0062	0.0072	< 0.10	0.00088	5.0	< 0.00010	1.0	< 0.00020	< 0.0010	< 0.0010	0.0067	0.0014	< 0.0030
RPD(%)			28.6%	8.0%	4.9%	0.0%	---	0.0%	---	---	8.7%	26.1%	2.2%	---	0.0%	0.0%	1.6%	4.1%	---	13.3%	0.0%	---	0.0%	---	---	---	1.5%	6.9%	---

Groundwater and Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.073**	**0.15**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.007**
W-CAT-1			**0.05**	**---**	**0.006**	**0.55**	**---**	**0.29**	**0.0020**	**0.007**	**---**	**0.012**	**5**	**0.020**	**---**	**3**	**0.005**	**0.03**	**---**	**0.003**	**---**	**0.0100**	**---**	**0.020**	**---**	**---**	**0.040**	**---**	**0.030**
W-CAT-2			**0.03**	**---**	**0.002**	**0.22**	**---**	**0.04**	**0.00047**	**0.001**	**---**	**0.010**	**12**	**0.001**	**---**	**6**	**0.025**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0002**	**---**	**---**	**0.029**	**---**	**0.030**
W-CAT-3			**0.12**	**---**	**0.050**	**7.5**	**---**	**1.34**	**0.0020**	**0.007**	**---**	**0.012**	**2**	**0.030**	**---**	**0.3**	**0.009**	**0.02**	**---**	**0.004**	**---**	**0.0002**	**---**	**0.030**	**---**	**---**	**0.076**	**---**	**0.018**
W-CAT-4			**0.07**	**---**	**0.031**	**1.4**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.020**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.41**	**---**	**1.40**
W-CAT-5			**0.03**	**---**	**0.016**	**1.3**	**---**	**0.09**	**0.0013**	**0.007**	**---**	**0.008**	**14**	**0.051**	**---**	**5**	**0.006**	**0.02**	**---**	**0.002**	**---**	**0.0001**	**---**	**0.0008**	**---**	**---**	**0.51**	**---**	**0.022**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
NWR 98-13-21	15-Jul-2019	**W-CAT-3**	0.0063	< 0.00060	0.00089	8.8 #2	< 0.0010	0.57	< 0.000020	< 0.0010	< 0.00030	0.00083	0.24	< 0.00020	0.076	0.20	< 0.00020	0.00051	< 0.10	0.0016	3.7	< 0.00010	2.5	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0031
(Duplicate)	15-Jul-2019		0.0067	< 0.00060	0.00076	8.7 #2	< 0.0010	0.57	< 0.000020	< 0.0010	< 0.00030	0.00086	0.24	< 0.00020	0.076	0.21	< 0.00020	0.00081	< 0.10	0.0015	3.7	< 0.00010	2.5	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0038
RPD(%)			6.2%	---	15.8%	1.1%	---	0.0%	---	---	---	3.6%	0.0%	---	0.0%	4.9%	---	45.5%	---	6.5%	0.0%	---	0.0%	---	---	---	---	---	20.3%
RB-RW-13	03-Oct-2019	**W-CAT-4**	0.0057	< 0.00060	0.033	0.84	< 0.0010	0.062	0.00021	< 0.0010	0.00057	0.0019	4.9	0.0017	< 0.020	2.5	0.00047	0.0034	< 0.10	0.00058	4.7	< 0.00010	0.68	< 0.00020	< 0.0010	< 0.0010	0.0024	< 0.0010	0.025
(Duplicate)	03-Oct-2019		0.0049	< 0.00060	0.034	0.83	< 0.0010	0.060	0.000085	< 0.0010	0.00052	0.00082	4.7	0.0013	< 0.020	2.5	0.00047	0.0034	< 0.10	0.00058	4.7	< 0.00010	0.67	< 0.00020	< 0.0010	< 0.0010	0.0025	< 0.0010	0.015
RPD(%)			**15.1%**	**---**	**3.0%**	**1.2%**	**---**	**3.3%**	**84.7%**	**---**	**9.2%**	**79.4%**	**4.2%**	**26.7%**	**---**	**0.0%**	**0.0%**	**0.0%**	**---**	**0.0%**	**0.0%**	**---**	**1.5%**	**---**	**---**	**---**	**4.1%**	**---**	**50.0%**
MLS 09-1-3	18-Jul-2019	**W-CAT-1**	< 0.0030	< 0.00060	0.00029	0.040	< 0.0010	0.59	0.00026	< 0.0010	< 0.00030	0.0014	0.15	< 0.00020	0.14	0.18	0.00051	0.0075	< 0.10	< 0.00020	3.5	< 0.00010	3.8	< 0.00020	< 0.0010	< 0.0010	0.0077	< 0.0010	0.0065
(Duplicate)	18-Jul-2019		< 0.0030	< 0.00060	0.00028	0.040	< 0.0010	0.59	0.00028	< 0.0010	< 0.00030	0.00069	0.14	< 0.00020	0.14	0.18	0.00054	0.0072	< 0.10	< 0.00020	3.5	< 0.00010	3.8	< 0.00020	< 0.0010	< 0.0010	0.0076	< 0.0010	0.0057
RPD(%)			**---**	**---**	3.5%	0.0%	---	0.0%	7.4%	---	**---**	**67.9%**	6.9%	---	0.0%	0.0%	5.7%	4.1%	---	---	0.0%	---	0.0%	---	---	---	1.3%	---	13.1%
MLS 08-3-4	13-Jul-2019	**W-CAT-3**	0.0063	< 0.00060	0.0014	0.035	< 0.0010	1.3	0.00013	< 0.0010	0.0028	0.0016	< 0.060	< 0.00020	0.069	1.1	0.00090	0.010	< 0.10	< 0.00020	3.9	< 0.00010	1.9	< 0.00020	< 0.0010	< 0.0010	0.0071	< 0.0010	0.0049
(Duplicate)	13-Jul-2019		0.0055	< 0.00060	0.0015	0.034	< 0.0010	1.3	0.00014	< 0.0010	0.0028	0.0016	< 0.060	< 0.00020	0.069	1.1	0.00088	0.010	< 0.10	< 0.00020	3.8	< 0.00010	1.8	< 0.00020	< 0.0010	< 0.0010	0.0072	< 0.0010	0.0048
RPD(%)			**13.6%**	**---**	**6.9%**	**2.9%**	**---**	**0.0%**	**7.4%**	**---**	**0.0%**	**0.0%**	**---**	**---**	**0.0%**	**0.0%**	**2.2%**	**0.0%**	**---**	**---**	**2.6%**	**---**	**5.4%**	**---**	**---**	**---**	**1.4%**	**---**	**2.1%**
BIBT1-15-2-4	16-Jul-2019	**W-CAT-2**	0.025	< 0.00060	0.021	0.65	< 0.0010	< 0.020	< 0.000020	0.0012	0.0014	0.00023	45	< 0.00020	< 0.020	2.6	0.045	0.0027	< 0.10	0.00079	8.4	< 0.00010	1.5	< 0.00020	< 0.0010	0.0020	0.0015	0.0025	0.0041
(Duplicate)	16-Jul-2019		0.025	< 0.00060	0.021	0.64	< 0.0010	< 0.020	< 0.000020	0.0012	0.0014	0.0014	45	< 0.00020	< 0.020	2.6	0.045	0.0028	< 0.10	0.00081	8.3	< 0.00010	1.5	< 0.00020	< 0.0010	0.0012	0.0016	0.0025	0.0060
RPD(%)			0.0%	---	0.0%	1.6%	---	---	---	0.0%	0.0%	**143.6%**	0.0%	---	---	0.0%	0.0%	3.6%	---	2.5%	1.2%	---	0.0%	---	---	50.0%	6.5%	0.0%	37.6%

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1).

6. Superscript #1 - Matrix spike exceeds acceptance limits due to probable matrix interference.
7. Superscript #2 - Detection limits raised due to dilution to bring analyte within the calibrated range.
8. Superscript #3 - Client supplied DHg bottle contained particulate.
9. Superscript #4 - Detection limits raised due to sample matrix.
10. Superscript #5 - Matrix Spike exceeds acceptance limits due to matrix interference. Reanalysis yields similar results.
11. Superscript #6 - Detection limit raised due to dilution to bring analyte within the calibrated range.
12. Background 95th Percentile Statistical Category:
    - W-CAT-1: Mainland Locations - Surficial Sediments - 95th Percentile Background
    - W-CAT-2: Bear, Goose, and Frenchy's Islands - Surficial Sediments - 95th Percentile Background
    - W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background
    - W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background
    - W-CAT-5: Surficial Sediments - Natural Gas & Non-Saline Water Seepage - 95th Percentile Background
    - W-CAT-6: Mainland Surface Water - 95th Percentile Background
    - W-CAT-7: Bear Island Surface Water - 95th Percentile Background
    - W-CAT-8: Goose Island Surface Water - 95th Percentile Background

Bold 13. Relative percent difference exceeds acceptable alert limit of 50%.

Advisian
Worley Group

Table 6B

Porewater Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00096

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Dissolved Metals: Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.005**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.002**	**0.3**	**0.001**	**---**	**---**	**0.073**	**0.025**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.03**
W-CAT-4			**0.07**	**---**	**0.031**	**1.39**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.02**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.411**	**---**	**1.4**
Refinery Bank Porewater - 2018 Locations																													
PW-18-1	18-Jul-2018	**W-CAT-4**	0.029	< 0.00060	0.0010	0.014	< 0.0010	0.12	0.000029	< 0.0010	0.014	0.00082	0.23	< 0.00020	0.040	2.5	0.00047	**0.035**	< 0.10	< 0.00020	3.7	< 0.00010	1.9	< 0.00020	< 0.0010	0.0011	0.0068	< 0.0010	0.014
(Duplicate)	18-Jul-2018		0.048	< 0.00060	0.0016	0.014	< 0.0010	0.12	0.00030	< 0.0010	0.013	0.00097	0.24	0.00020	0.037	2.4	0.00072	**0.035**	< 0.10	0.00035	3.7	< 0.00010	1.9	< 0.00020	< 0.0010	0.0089	0.0065	< 0.0010	0.014
PW-18-2	18-Jul-2018	**W-CAT-4**	< 0.0030	< 0.00060	0.00076	0.041	< 0.0010	0.052	0.00024	< 0.0010	< 0.00030	0.0034	0.072	< 0.00020	0.021	0.057	0.0045	0.0069	< 0.10	0.00035	4.6	< 0.00010	0.79	< 0.00020	< 0.0010	< 0.0010	0.0069	< 0.0010	0.010
PW-18-3	18-Jul-2018	**W-CAT-4**	0.065	< 0.00060	0.00073	0.085	< 0.0010	0.048	0.00037	< 0.0010	0.0013	0.0028	0.18	< 0.00020	0.022	0.96	0.0018	0.011	< 0.10	0.00035	5.7	< 0.00010	0.86	< 0.00020	< 0.0010	0.0036	0.0033	< 0.0010	0.012
PW-18-4	18-Jul-2018	**W-CAT-4**	0.041	< 0.00060	0.0064	0.31	< 0.0010	0.021	0.00021	0.0019	0.0020	0.00074	0.48	0.00064	< 0.020	0.18	**0.14**	0.015	< 0.10	**0.0011**	6.8	< 0.00010	0.22	0.00046	< 0.0010	0.0071	0.0048	0.018	0.0082
PW-18-5	18-Jul-2018	**W-CAT-4**	0.0037	< 0.00060	0.0063	0.44	< 0.0010	0.084	< 0.000020	< 0.0010	0.0011	0.00033	7.6	< 0.00020	< 0.020	0.40	0.045	0.0056	< 0.10	0.00037	6.7	< 0.00010	0.74	0.00033	< 0.0010	< 0.0010	0.0042	< 0.0010	0.0065
PW-18-6	18-Jul-2018	**W-CAT-4**	0.0056	0.00074	0.0018	0.047	< 0.0010	0.040	0.00078	< 0.0010	< 0.00030	0.0021	< 0.060	< 0.00020	< 0.020	0.051	0.011	0.0068	< 0.10	0.00030	4.7	< 0.00010	0.73	0.00038	< 0.0010	0.014	0.011	< 0.0010	0.015
PW-18-7	19-Jul-2018	**W-CAT-4**	< 0.0030	< 0.00060	0.00034	0.028	< 0.0010	0.021	0.000075	< 0.0010	< 0.00030	0.0018	< 0.060	< 0.00020	< 0.020	0.057	0.0051	0.0037	< 0.10	0.00039	2.2	< 0.00010	0.28	< 0.00020	< 0.0010	< 0.0010	0.0036	< 0.0010	0.0030
PW-18-8	19-Jul-2018	**W-CAT-4**	0.0056	< 0.00060	0.00046	0.046	< 0.0010	0.020	0.000084	< 0.0010	0.00031	0.0016	< 0.060	< 0.00020	< 0.020	0.18	0.0049	0.0045	< 0.10	0.00037	2.1	< 0.00010	0.28	< 0.00020	< 0.0010	< 0.0010	0.0022	< 0.0010	< 0.0030
PW-18-9	19-Jul-2018	**W-CAT-4**	0.017	< 0.00060	0.0033	0.11	< 0.0010	0.083	< 0.000020	< 0.0010	0.0055	0.00059	0.88	< 0.00020	< 0.020	1.6	0.021	0.021	< 0.10	0.00058	5.4	< 0.00010	0.47	< 0.00020	< 0.0010	< 0.0010	0.0072	0.0013	0.0085
PW-18-10	19-Jul-2018	**W-CAT-4**	0.0041	< 0.00060	0.0073	0.44	< 0.0010	0.43	< 0.000020	< 0.0010	< 0.00030	< 0.00020	21	< 0.00020	0.026	0.47	0.020	0.0014	0.17	0.00039	5.4	< 0.00010	0.70	< 0.00020	< 0.0010	< 0.0010	0.0017	< 0.0010	< 0.0030
PW-18-11	19-Jul-2018	**W-CAT-4**	0.040	< 0.00060	0.0012	0.038	< 0.0010	0.11	0.000057	< 0.0010	0.0058	0.0010	0.26	< 0.00020	0.040	1.4	0.0024	0.013	< 0.10	0.00023	5.5	< 0.00010	1.2	< 0.00020	< 0.0010	0.0012	0.0080	< 0.0010	0.014
PW-18-12	19-Jul-2018	**W-CAT-4**	**0.20**	< 0.00060	0.0012	0.085	< 0.0010	< 0.020	0.000089	< 0.0010	0.0011	0.0026	0.87	0.0012	< 0.020	0.18	0.0016	0.0043	< 0.10	0.00033	2.5	< 0.00010	0.25	< 0.00020	< 0.0010	0.0030	0.00095	0.0011	0.0084
Refinery Bank Porewater - 2019 Locations																													
PW-19-1	25-Sep-2019	**W-CAT-4**	0.0080	< 0.00060	0.031	0.55	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.00020	12	< 0.00020	< 0.020	0.067	0.039	0.00090	< 0.10	0.00039	6.8	< 0.00010	0.35	< 0.00020	< 0.0010	< 0.0010	< 0.00010	0.0022	0.0054
PW-19-2	25-Sep-2019	**W-CAT-4**	0.0070	< 0.00060	0.0056	0.88	< 0.0010	0.10	< 0.000020	< 0.0010	< 0.00030	0.00025	23	< 0.00020	< 0.020	0.35	0.032	0.00081	< 0.10	0.00045	7.3	< 0.00010	0.75	< 0.00020	< 0.0010	< 0.0010	0.0016	0.0020	< 0.0030
PW-19-3	25-Sep-2019	**W-CAT-4**	0.0073	< 0.00060	0.029	0.46	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.00035	0.00033	9.9	< 0.00020	< 0.020	0.082	0.038	0.00071	0.11	0.00030	5.6	< 0.00010	0.38	< 0.00020	< 0.0010	0.0012	< 0.00010	0.0018	< 0.0030
PW-19-4	25-Sep-2019	**W-CAT-4**	0.0056	< 0.00060	0.020	0.52	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00027	7.5	< 0.00020	< 0.020	0.24	0.023	0.0015	< 0.10	0.00021	4.6	< 0.00010	0.40	< 0.00020	< 0.0010	< 0.0010	< 0.00010	0.0011	0.0065
PW-19-5	25-Sep-2019	**W-CAT-4**	0.0033	< 0.00060	0.025	0.37	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.00020	8.9	< 0.00020	< 0.020	0.28	0.021	0.0013	0.12	< 0.00020	4.9	< 0.00010	0.40	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030
PW-19-6	25-Sep-2019	**W-CAT-4**	0.0036	< 0.00060	0.023	0.32	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00073	8.8	< 0.00020	< 0.020	0.33	0.016	0.0013	0.15	< 0.00020	4.8	< 0.00010	0.41	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	0.0044
PW-19-7	25-Sep-2019	**W-CAT-4**	0.0031	< 0.00060	0.013	0.55	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.00020	10	< 0.00020	< 0.020	0.45	0.010	0.00092	< 0.10	< 0.00020	5.2	< 0.00010	0.40	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030
PW-19-8	25-Sep-2019	**W-CAT-4**	0.0034	< 0.00060	0.013	0.53	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.00086	< 0.00020	10	< 0.00020	< 0.020	0.43	0.019	0.0038	< 0.10	0.00021	6.1	< 0.00010	0.45	< 0.00020	< 0.0010	< 0.0010	0.00037	0.0011	0.0032
(Duplicate)	25-Sep-2019		0.0046	< 0.00060	0.013	0.53	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.00087	0.00038	10	< 0.00020	< 0.020	0.43	0.019	0.0042	< 0.10	< 0.00020	6.1	< 0.00010	0.45	< 0.00020	< 0.0010	< 0.0010	0.00036	0.0011	0.0043
PW-19-9	25-Sep-2019	**W-CAT-4**	< 0.0030	< 0.00060	0.0042	0.33	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.00095	0.0017	2.5	< 0.00020	< 0.020	0.48	0.0048	0.0042	< 0.10	< 0.00020	4.4	< 0.00010	0.42	< 0.00020	< 0.0010	< 0.0010	0.0018	< 0.0010	< 0.0030
PW-19-11	26-Sep-2019	**W-CAT-4**	< 0.0030	< 0.00060	0.0020	0.10	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.0022	0.00081	0.90	< 0.00020	< 0.020	0.72	0.016	0.0076	< 0.10	0.00024	3.2	< 0.00010	0.51	< 0.00020	< 0.0010	< 0.0010	0.011	< 0.0010	0.0038
PW-19-13	26-Sep-2019	**W-CAT-4**	0.0092	< 0.00060	0.014	0.36	< 0.0010	< 0.020	0.000022	< 0.0010	< 0.00030	0.00035	8.2	< 0.00020	< 0.020	0.34	0.062	0.0011	0.20	0.00032	6.2	< 0.00010	0.32	< 0.00020	< 0.0010	0.0016	0.00042	0.0030	< 0.0030
PW-19-14	26-Sep-2019	**W-CAT-4**	0.0061	< 0.00060	0.0060	0.61	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00034	7.4	< 0.00020	< 0.020	0.40	0.028	0.0011	< 0.10	0.00026	5.1	< 0.00010	0.44	< 0.00020	< 0.0010	< 0.0010	0.0020	0.0021	< 0.0030
PW-19-15	26-Sep-2019	**W-CAT-4**	0.0056	< 0.00060	0.010	0.62	< 0.0010	0.029	< 0.000020	< 0.0010	0.0014	0.00029	9.6	< 0.00020	< 0.020	0.30	0.017	0.0061	< 0.10	0.00021	6.8	< 0.00010	0.45	< 0.00020	< 0.0010	< 0.0010	0.0036	0.0015	< 0.0030
(Duplicate)	26-Sep-2019		0.0052	< 0.00060	0.011	0.61	< 0.0010	0.043	< 0.000020	< 0.0010	0.0014	0.00046	9.7	< 0.00020	< 0.020	0.29	0.018	0.0064	< 0.10	0.00028	7.2	< 0.00010	0.48	< 0.00020	< 0.0010	< 0.0010	0.0036	0.0017	< 0.0030
PW-19-16	26-Sep-2019	**W-CAT-4**	0.010	< 0.00060	**0.081**	0.53	< 0.0010	0.035	< 0.000020	< 0.0010	0.00044	0.00033	**28**	< 0.00020	< 0.020	0.13	0.015	0.00074	0.19	< 0.00020	11	< 0.00010	0.43	< 0.00020	< 0.0010	< 0.0010	< 0.00010	0.0021	< 0.0030
PW-19-17	26-Sep-2019	**W-CAT-4**	0.0078	< 0.00060	**0.060**	0.50	< 0.0010	0.020	< 0.000020	< 0.0010	0.00039	0.00028	11	< 0.00020	< 0.020	0.087	0.034	0.00082	0.11	< 0.00020	9.1	< 0.00010	0.50	< 0.00020	< 0.0010	< 0.0010	< 0.00010	0.0014	< 0.0030

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Table 6B

Porewater Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 407011-00096

Sampling Location	Date (dd-mmm-yyyy)	Background Category	Dissolved Metals																											
			Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.005**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.002**	**0.3**	**0.001**	**---**	**---**	**0.073**	**0.025**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.03**
W-CAT-4			**0.07**	**---**	**0.031**	**1.39**	**---**	**1.13**	**0.0014**	**0.007**	**---**	**0.012**	**25**	**0.042**	**---**	**3**	**0.02**	**0.02**	**---**	**0.001**	**---**	**0.0001**	**---**	**0.0012**	**---**	**---**	**0.411**	**---**	**1.4**
Relative Percent Difference (RPD) Report																														
PW-19-8	25-Sep-2019	**W-CAT-4**	0.0034	< 0.00060	0.013	0.53	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.00086	< 0.00020	10	< 0.00020	< 0.020	0.43	0.019	0.0038	< 0.10	0.00021	6.1	< 0.00010	0.45	< 0.00020	< 0.0010	< 0.0010	0.00037	0.0011	0.0032
(Duplicate)	25-Sep-2019		0.0046	< 0.00060	0.013	0.53	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.00087	0.00038	10	< 0.00020	< 0.020	0.43	0.019	0.0042	< 0.10	< 0.00020	6.1	< 0.00010	0.45	< 0.00020	< 0.0010	< 0.0010	0.00036	0.0011	0.0043
RPD(%)			**30.0%**	**---**	**0.0%**	**0.0%**	**---**	**---**	**---**	**---**	**1.2%**	**---**	**0.0%**	**---**	**---**	**0.0%**	**0.0%**	**10.0%**	**---**	**---**	**0.0%**	**---**	**0.0%**	**---**	**---**	**---**	**2.7%**	**0.0%**	**29.3%**
PW-19-15	26-Sep-2019	**W-CAT-4**	0.0056	< 0.00060	0.010	0.62	< 0.0010	0.029	< 0.000020	< 0.0010	0.0014	0.00029	9.6	< 0.00020	< 0.020	0.30	0.017	0.0061	< 0.10	0.00021	6.8	< 0.00010	0.45	< 0.00020	< 0.0010	< 0.0010	0.0036	0.0015	< 0.0030
(Duplicate)	26-Sep-2019		0.0052	< 0.00060	0.011	0.61	< 0.0010	0.043	< 0.000020	< 0.0010	0.0014	0.00046	9.7	< 0.00020	< 0.020	0.29	0.018	0.0064	< 0.10	0.00028	7.2	< 0.00010	0.48	< 0.00020	< 0.0010	< 0.0010	0.0036	0.0017	< 0.0030
RPD(%)			**7.4%**	**---**	**9.5%**	**1.6%**	**---**	**38.9%**	**---**	**---**	**0.0%**	**45.3%**	**1.0%**	**---**	**---**	**3.4%**	**5.7%**	**4.8%**	**---**	**28.6%**	**5.7%**	**---**	**6.5%**	**---**	**---**	**---**	**0.0%**	**12.5%**	**---**

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 updated Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 updated Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background

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Table 7

Surface Water Analytical Results: Total Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.001**	**---**	**---**	**---**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**---**	**0.007**
W-CAT-6			**0.85**	**0.006**	**0.007**	**0.30**	**0.010**	**0.04**	**0.0001**	**0.010**	**0.004**	**0.005**	**31**	**0.002**	**0.020**	**32**	**1.6**	**0.011**	**0.007**	**0.002**	**---**	**0.002**	**0.005**	**0.010**	**0.040**
W-CAT-7			**0.644**	**0.001**	**0.00468**	**0.256**	**0.001**	**0.02**	**0.0001**	**0.001**	**0.003**	**0.003**	**3.9**	**0.001**	**0.0218**	**128**	**0.876**	**0.003**	**0.009**	**0.0006**	**---**	**0.0002**	**0.003**	**0.006**	**0.025**
W-CAT-8			**0.5785**	**0.0006**	**0.00259**	**0.242**	**0.001**	**0.02**	**0.00007**	**0.001**	**0.001**	**0.004**	**2.4**	**0.001**	**0.020**	**14**	**0.40**	**0.003**	**0.004**	**0.0003**	**---**	**0.0002**	**0.0008**	**0.006**	**0.009**
Mainland Central - Biocells / B-33X Well Site - Surface Water																									
ARB-17-SW01	12-Aug-2017	**W-CAT-6**	0.0081	< 0.00060	0.00096	0.058	< 0.0010	< 0.020	0.000059	< 0.0010	0.00070	0.0011	0.33	< 0.00020	< 0.020	41	0.074	0.014	0.014	0.0019	< 0.00010	0.00023	0.011	0.0016	0.0054
	12-Jul-2018		0.011	< 0.00060	0.00052	0.046	< 0.0010	< 0.020	0.00012	< 0.0010	< 0.00030	0.0022	0.086	< 0.00020	< 0.020	31	0.023	0.014	0.014	0.0035	< 0.00010	< 0.00020	0.0080	< 0.0010	0.013
	11-Jul-2019		0.016	< 0.00060	0.00053	0.039	< 0.0010	< 0.020	0.000050	< 0.0010	0.00036	0.0022	0.092	< 0.00020	< 0.020	29	0.018	0.013	0.016	0.0023	< 0.00010	< 0.00020	0.0073	< 0.0010	0.013
ARB-17-SW02	12-Aug-2017	**W-CAT-6**	0.0072	< 0.00060	0.00088	0.067	< 0.0010	0.023	0.000029	< 0.0010	0.00041	0.00028	0.30	< 0.00020	< 0.020	44	0.27	0.0092	0.0048	0.00044	< 0.00010	< 0.00020	0.0091	0.0014	< 0.0030
	12-Jul-2018		0.011	< 0.00060	0.00050	0.073	< 0.0010	0.021	0.000020	< 0.0010	0.00054	0.00068	0.47	< 0.00020	< 0.020	33	0.41	0.014	0.0069	0.0014	< 0.00010	< 0.00020	0.0081	< 0.0010	0.0050
	13-Jul-2019		0.010	< 0.00060	0.00048	0.054	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00059	0.13	< 0.00020	< 0.020	30	0.083	0.015	0.0061	0.00038	< 0.00010	< 0.00020	0.0091	< 0.0010	< 0.0030
Mainland Central - C-30X Well Site / Bosworth Creek and Delta - Surface Water																									
BOS SW01	11-Aug-2016	**W-CAT-6**	0.024	< 0.00060	0.00023	0.084	< 0.0010	0.025	< 0.000020	< 0.0010	< 0.00030	0.00028	0.11	< 0.00020	< 0.020	31	0.0091	0.0019	0.00077	< 0.00020	< 0.00010	< 0.00020	0.0012	< 0.0010	< 0.0030
	18-Aug-2017		0.030	< 0.00060	0.00042	0.086	< 0.0010	0.030	< 0.000020	< 0.0010	< 0.00030	0.00025	0.12	< 0.00020	< 0.020	27	0.0088	0.0017	0.00069	< 0.00020	< 0.00010	< 0.00020	0.0010	0.0023	< 0.0030
(Duplicate)	18-Aug-2017		0.041	< 0.00060	0.00045	0.087	< 0.0010	0.031	< 0.000020	< 0.0010	< 0.00030	0.00064	0.13	< 0.00020	< 0.020	28	0.0088	0.0019	0.0010	0.00020	< 0.00010	< 0.00020	0.0010	0.0021	0.0035
	21-Jul-2018		0.055	< 0.00060	0.00030	0.084	< 0.0010	0.030	< 0.000020	0.0017	< 0.00030	0.00061	0.17	< 0.00020	< 0.020	28	0.0092	0.0019	0.00090	0.00021	< 0.00010	< 0.00020	0.0012	< 0.0010	0.0033
	13-Jul-2019		0.24	< 0.00060	0.00044	0.090	< 0.0010	0.031	< 0.000020	< 0.0010	< 0.00030	0.00075	0.47	0.00023	< 0.020	28	0.014	0.0020	0.0014	0.00025	< 0.00010	< 0.00020	0.0013	0.0012	0.0035
Mainland Central - C-36X Well Site - Surface Water																									
C36 SW01	05-Aug-2016	**W-CAT-6**	0.013	< 0.00060	0.0021	0.25	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.00052	< 0.00020	1.2	< 0.00020	< 0.020	70	0.64	0.00090	0.0027	0.00048	< 0.00010	< 0.00020	0.00028	< 0.0010	< 0.0030
	12-Aug-2017		0.064	< 0.00060	0.0061	0.34	< 0.0010	< 0.020	0.000092	0.0012	0.0015	0.0018	3.8	0.00064	< 0.020	57	2.6	0.00039	0.0041	0.00035	< 0.00010	< 0.00020	0.00023	0.0029	0.017
	12-Jul-2018		0.11	< 0.00060	0.0065	0.51	< 0.0010	< 0.020	0.000081	< 0.0010	0.0041	0.00099	13	0.00056	< 0.020	48	5.6	0.0014	0.0050	0.0013	< 0.00010	< 0.00020	0.00064	0.0035	0.0068
	15-Jul-2019		0.018	< 0.00060	0.0015	0.20	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.00034	0.00033	0.66	< 0.00020	< 0.020	41	0.23	0.010	0.0044	0.00044	< 0.00010	< 0.00020	0.00073	0.0019	< 0.0030
Reduced Crude Flare Pit - Surface Water																									
RCF-16-SW01	03-Aug-2016	**W-CAT-6**	0.024	< 0.00060	0.0016	0.19	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.0013	0.00048	2.1	< 0.00020	< 0.020	40	2.5	0.0021	0.0024	< 0.00020	< 0.00010	< 0.00020	0.0011	< 0.0010	0.0036
	12-Jul-2019		0.0092	< 0.00060	0.0014	0.13	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.00031	0.00021	0.083	< 0.00020	< 0.020	43	0.51	0.0019	0.0019	0.00028	< 0.00010	< 0.00020	0.0018	< 0.0010	< 0.0030
Bear Island - Bear Island West Sumps (Sumps 1-5) - Surface Water																									
BI SW05	10-Aug-2016	**W-CAT-7**	0.0060	< 0.00060	0.00074	0.18	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.00020	0.090	< 0.00020	< 0.020	46	0.096	< 0.00020	< 0.00050	< 0.00020	< 0.00010	< 0.00020	< 0.00010	< 0.0010	< 0.0030
	11-Aug-2017		0.0062	< 0.00060	0.0014	0.13	< 0.0010	< 0.020	0.000030	< 0.0010	< 0.00030	< 0.00020	0.18	< 0.00020	< 0.020	55	0.77	< 0.00020	0.00052	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0015	< 0.0030
BI-13-11	10-Aug-2016	**W-CAT-7**	0.037	< 0.00060	0.0016	0.15	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00053	0.29	< 0.00020	< 0.020	37	0.063	0.00051	0.0028	< 0.00020	< 0.00010	< 0.00020	0.00022	< 0.0010	0.012
	14-Aug-2017		8.3	< 0.00060	0.0073	1.3	0.0019	0.28	0.00049	0.013	0.015	0.0094	76	0.0080	0.026	110	1.5	0.0016	0.093	0.0017	< 0.00010	< 0.00020	0.00085	0.030	0.34
	18-Jul-2018		0.085	< 0.00060	0.0020	0.093	< 0.0010	< 0.020	0.000021	< 0.0010	0.00032	0.00073	0.43	0.00027	< 0.020	33	0.12	0.00039	0.0026	< 0.00020	< 0.00010	< 0.00020	0.00023	< 0.0010	0.0054
	17-Jul-2019		0.16	0.0018	0.0030	0.20	< 0.0010	< 0.020	0.000027	< 0.0010	0.00048	0.0016	1.0	0.00071	< 0.020	34	0.20	0.0011	0.0032	0.00041	< 0.00010	< 0.00020	0.00036	0.0017	0.017
Bear Island - Bear Island East Sump (Sump 6) - Surface Water																									
BI SW-13-1	11-Aug-2016	**W-CAT-7**	0.037	< 0.00060	0.0011	0.13	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00054	0.38	< 0.00020	< 0.020	14	0.075	0.00049	0.0015	< 0.00020	< 0.00010	< 0.00020	0.00015	< 0.0010	< 0.0030
	14-Aug-2017		0.26	< 0.00060	0.0039	0.22	< 0.0010	< 0.020	0.000048	< 0.0010	0.0018	0.00034	7.5	0.00048	< 0.020	16	1.8	0.00065	0.0021	< 0.00020	< 0.00010	< 0.00020	0.00024	0.0016	0.0049
	18-Jul-2018		0.0081	< 0.00060	0.00072	0.11	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00076	0.067	< 0.00020	< 0.020	12	0.0075	0.00069	0.0014	< 0.00020	< 0.00010	< 0.00020	0.00021	< 0.0010	0.0041
	12-Jul-2019		0.014	< 0.00060	0.00084	0.12	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00040	0.093	< 0.00020	< 0.020	13	0.0075	0.00060	0.0011	< 0.00020	< 0.00010	< 0.00020	0.00016	< 0.0010	< 0.0030
BIS6-17-SW01	27-Sep-2017	**W-CAT-7**	0.043	< 0.00060	0.00087	0.16	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00033	0.16	< 0.00020	< 0.020	31	0.059	0.00030	0.00087	< 0.00020	< 0.00010	< 0.00020	0.00012	< 0.0010	0.0045
Bear Island - N-42X Well Site - Surface Water																									
BIN42 SW01	08-Aug-2016	**W-CAT-7**	0.025	< 0.00060	0.00087	0.12	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00040	0.14	< 0.00020	< 0.020	15	0.0075	0.00074	0.0012	< 0.00020	< 0.00010	< 0.00020	0.00017	< 0.0010 [#3]	< 0.0030
	10-Aug-2017		0.11	< 0.00060	0.0012	0.14	< 0.0010	< 0.020	0.000088	< 0.0010	< 0.00030	0.0018	0.49	< 0.00020	< 0.020	13	0.045	0.0012	0.0017	< 0.00020	< 0.00010	< 0.00020	0.00023	0.0010	0.0035
	17-Jul-2018		0.012	< 0.00060	0.00077	0.12	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00038	0.15	< 0.00020	< 0.020	14	0.014	0.00071	0.0010	0.00022	< 0.00010	< 0.00020	0.00013	< 0.0010	< 0.0030
	17-Jul-2019		0.033	< 0.00060	0.00086	0.12	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00033	0.22	< 0.00020	< 0.020	15	0.032	0.00052	0.00080	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0010	< 0.0030

Table 7

Surface Water Analytical Results: Total Metals and Trace Elements

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00009**	**0.0089**	**---**	**0.004**	**0.3**	**0.001**	**---**	**---**	**---**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**---**	**0.007**
W-CAT-6			**0.85**	**0.006**	**0.007**	**0.30**	**0.010**	**0.04**	**0.0001**	**0.010**	**0.004**	**0.005**	**31**	**0.002**	**0.020**	**32**	**1.6**	**0.011**	**0.007**	**0.002**	**---**	**0.002**	**0.005**	**0.010**	**0.040**
W-CAT-7			**0.644**	**0.001**	**0.00468**	**0.256**	**0.001**	**0.02**	**0.0001**	**0.001**	**0.003**	**0.003**	**3.9**	**0.001**	**0.0218**	**128**	**0.876**	**0.003**	**0.009**	**0.0006**	**---**	**0.0002**	**0.003**	**0.006**	**0.025**
W-CAT-8			**0.5785**	**0.0006**	**0.00259**	**0.242**	**0.001**	**0.02**	**0.00007**	**0.001**	**0.001**	**0.004**	**2.4**	**0.001**	**0.020**	**14**	**0.40**	**0.003**	**0.004**	**0.0003**	**---**	**0.0002**	**0.0008**	**0.006**	**0.009**
Bear Island - Former Bear Island Flare Pit - Surface Water																									
BI SW09	08-Aug-2016	**W-CAT-7**	0.074	< 0.00060	0.00097	0.16	< 0.0010	< 0.020	0.000025	< 0.0010	< 0.00030	0.00034	0.89	< 0.00020	< 0.020	15	0.046	0.0015	0.0014	< 0.00020	< 0.00010	< 0.00020	0.00015	< 0.0010	< 0.0030
	10-Aug-2017		0.64	< 0.00060	**0.0092**	**0.37**	< 0.0010	< 0.020	**0.00016**	**0.0017**	**0.0034**	0.0022	**23**	**0.0030**	< 0.020	19	**2.1**	0.0026	0.0072	0.00033	< 0.00010	< 0.00020	0.00088	0.0033	0.016
	20-Jul-2018		0.041	< 0.00060	0.0012	0.19	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00060	0.84	< 0.00020	< 0.020	13	0.16	0.0018	0.0016	0.00020	< 0.00010	< 0.00020	0.00027	< 0.0010	< 0.0030
	12-Jul-2019		0.057	< 0.00060	0.0013	0.16	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00052	0.54	< 0.00020	< 0.020	13	0.034	0.0018	0.0015	< 0.00020	< 0.00010	< 0.00020	0.00023	< 0.0010	< 0.0030
BIFP-16-SW1	04-Oct-2016	**W-CAT-7**	0.45	< 0.00060	0.0029	0.18	< 0.0010	< 0.020	**0.0010**	0.0010	0.0011	0.0026	3.3	**0.0014**	< 0.020	16	0.36	0.0026	0.0042	0.00023	< 0.00010	< 0.00020	0.00064	0.0025	0.013
	10-Aug-2017		0.061	< 0.00060	0.0013	0.16	< 0.0010	< 0.020	0.000038	< 0.0010	< 0.00030	0.00050	0.52	< 0.00020	< 0.020	14	0.043	0.0025	0.0014	< 0.00020	< 0.00010	< 0.00020	0.00037	< 0.0010	< 0.0030
	27-Sep-2017		0.13	< 0.00060	0.0045	0.23	< 0.0010	< 0.020	0.000097	< 0.0010	0.0012	0.0015	**6.1**	0.00028	< 0.020	13	**1.1**	0.0012	0.0031	< 0.00020	< 0.00010	< 0.00020	0.00028	0.0014	0.010
	20-Jul-2018		0.092	< 0.00060	0.0026	0.17	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.00046	0.00046	1.9	< 0.00020	< 0.020	13	0.40	0.0022	0.0017	< 0.00020	< 0.00010	< 0.00020	0.00015	0.0011	< 0.0030
	12-Jul-2019		0.021	< 0.00060	0.0018	0.14	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00031	0.89	< 0.00020	< 0.020	15	0.062	0.0019	0.0011	< 0.00020	< 0.00010	< 0.00020	0.00012	< 0.0010	< 0.0030
BIFP-17-SW2	27-Sep-2017	**W-CAT-7**	**2.3**	< 0.00060	**0.016**	**0.34**	< 0.0010	< 0.020	**0.00036**	**0.0061**	**0.0038**	**0.0071**	**22**	**0.0037**	< 0.020	18	0.43	0.0020	**0.011**	0.00034	< 0.00010	< 0.00020	0.00057	**0.0082**	**0.043**
	20-Jul-2018		**17**	**0.0015**	**0.18**	**2.2**	**0.0014**	**0.023**	**0.0024**	**0.037**	**0.034**	**0.061**	**290** [#2]	**0.031**	**0.044**	49	**4.6**	**0.0058**	**0.085**	**0.0024**	**0.00047**	**0.00042**	0.0023	**0.064**	**0.36**
	12-Jul-2019		0.039	< 0.00060	0.0018	0.17	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00042	0.67	< 0.00020	< 0.020	14	0.046	0.0017	0.0013	< 0.00020	< 0.00010	< 0.00020	0.00023	< 0.0010	< 0.0030
Goose Island - Surface Water																									
GI SW05	20-Aug-2017	**W-CAT-8**	0.023	< 0.00060	0.00088	0.061	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00064	0.068	< 0.00020	< 0.020	7.6	0.011	0.0017	0.0010	0.00022	< 0.00010	< 0.00020	0.00031	< 0.0010	< 0.0030
(Duplicate)	20-Aug-2017		0.023	< 0.00060	0.00089	0.059	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00073	0.064	< 0.00020	< 0.020	7.3	0.011	0.0016	0.0011	< 0.00020	< 0.00010	< 0.00020	0.00035	< 0.0010	< 0.0030
	30-Aug-2019		0.065	< 0.00060	0.00084	0.065	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	0.12	< 0.00020	< 0.020	8.7	0.0054	0.0012	0.00099	< 0.00020	< 0.00010	< 0.00020	0.00035	< 0.0010	< 0.0030

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1).

6. Superscript [#1] - Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.
7. Superscript [#2] - Detection limits raised due to dilution to bring analyte within the calibrated range.
8. Superscript [#3] - Matrix spike exceeds acceptance limits due to matrix interference.
9. Background 95th Percentile Statistical Category:
   W-CAT-6: Mainland Surface Water - 95th Percentile Background
   W-CAT-7: Bear Island Surface Water - 95th Percentile Background
   W-CAT-8: Goose Island Surface Water - 95th Percentile Background

Advisian
Worley Group

Table 8A

Groundwater Analytical Results: Polycyclic Aromatic Hydrocarbons

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Benzo(a)Pyrene Total Potency Equivalent (mg/L)	Benzo(a)Pyrene Total Potency Equivalent (ESRD) (mg/L)	Benzo(b,j)Fluoranthene (mg/L)	Benzo(c)Phenanthrene (mg/L)	Benzo(e)Pyrene (mg/L)	Benzo(g,h,i)Perylene (mg/L)	Benzo(k)Fluoranthene (mg/L)	Chrysene (mg/L)	Dibenzo(a,h)Anthracene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Indeno(1,2,3-c,d)Pyrene (mg/L)	2-Methylnaphthalene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			0.0058	---	0.0044	0.000012	0.000018	0.000015	---	---	---	---	---	---	---	---	---	0.00004	0.003	---	---	0.0011	---	0.0004	0.000025	0.0034
W-CAT-1			0.00010	---	0.00005	0.000010	0.000009	0.0000075	---	---	---	---	---	---	---	---	---	0.00004	0.00005	---	---	0.0001	---	0.00008	0.000036	0.0002
W-CAT-2			0.00010	---	0.00005	0.000010	0.000009	0.0000075	---	---	---	---	---	---	---	---	---	0.00001	0.00005	---	---	0.0001	---	0.00006	0.000020	0.0002
W-CAT-3			0.00053	---	0.00005	0.000012	0.000088	0.000035	---	---	---	---	---	---	---	---	---	0.00007	0.0016	---	---	0.0054	---	0.0037	0.00026	0.0002
W-CAT-4			0.00042	---	---	0.000024	0.000009	0.0000075	---	---	---	---	---	---	---	---	---	0.00006	0.0018	---	---	0.0031	---	0.0017	0.00020	---
W-CAT-5			0.00016	---	0.00005	0.000049	0.000038	0.000013	---	---	---	---	---	---	---	---	---	0.00030	0.0002	---	---	0.0035	---	0.00042	0.00022	0.0002
W-CAT-6			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
W-CAT-7			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
W-CAT-8			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mainland Central - C-30X Well Site / Bosworth Creek and Detla - Suficial Sediment																										
BOS-DP-13-1-1.4	11-Aug-2016	**W-CAT-3**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	< 0.00010	---	0.000073	< 0.000020	---
	13-Jul-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
BOS-DP-13-2-1.35	06-Aug-2016	**W-CAT-3**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	< 0.00010	---	< 0.000050	< 0.000020	---
	18-Aug-2017		< 0.00010	< 0.00010	< 0.000050	**0.000030**	0.000042	< 0.0000075	0.000013	0.000013	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	0.000023	< 0.0000075	**0.00033**	0.000068	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	0.00032	0.00023	< 0.00020
BOS-DP-13-3-2	06-Aug-2016	**W-CAT-3**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	< 0.00010	---	< 0.000050	< 0.000020	---
	18-Aug-2017		0.00015	< 0.00010	< 0.000050	**0.000086**	**0.00013**	0.000021	0.000043	0.000044	0.000041	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	0.000099	< 0.0000075	**0.00088**	0.00017	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	0.00089	**0.00061**	< 0.00020
BOS-DP-13-4-3	06-Aug-2016	**W-CAT-3**	0.0058 #1	0.0028 #1	---	< 0.000010	**0.00060** #1	< 0.0000075	0.00014	0.00014	0.00050	---	---	0.00029	< 0.0000085	0.0023	< 0.0000075	< 0.000010	**0.013**	< 0.0000085	---	0.0035 #1	---	**0.031**	**0.0030**	---
(Duplicate)	06-Aug-2016		0.0019 #1	0.00093 #1	---	< 0.000010	**0.00018** #1	< 0.0000075	0.000034	0.000033	< 0.0000085	---	---	< 0.0000085	< 0.0000085	0.00065	< 0.0000075	< 0.000010	**0.0052**	< 0.0000085	---	0.0011 #1	---	**0.011**	**0.00095**	---
	18-Aug-2017		0.00047	0.00043 #1	< 0.000050	< 0.000010	0.000060	< 0.0000075	0.000017	0.000017	< 0.0000085	< 0.000050	0.000075	< 0.0000085	< 0.0000085	0.00017	< 0.0000075	**0.00028**	0.0018	< 0.0000085	0.00030	0.0011 #1	< 0.000050	0.0035	**0.00048**	< 0.00020
Mainland Central - Former Battery #3 - Suficial Sediment																										
BT3 02-32-6	05-Aug-2016	**W-CAT-3**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	0.000010	0.0000098	< 0.0000085	---	---	< 0.0000085	< 0.0000085	0.000052	< 0.0000075	< 0.000010	0.000053	< 0.0000085	---	< 0.00010	---	< 0.000050	0.000029	---
	13-Aug-2017		< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.000066	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	0.00010	0.000052	< 0.00020
	12-Jul-2018		< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.000081	< 0.0000085	< 0.00010	0.00013	< 0.000050	0.000099	0.000048	< 0.00020
	13-Jul-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00011	< 0.0000085	0.00013	< 0.00010	< 0.000050	0.00021	0.000051	< 0.00020
BT3 02-34-4	13-Aug-2017	**W-CAT-3**	< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
	17-Jul-2018		< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
	14-Jul-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
Mainland Central - Former Battery #3 - Bedrock																										
BT3 99-23-13	05-Aug-2016	**W-CAT-3**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	0.00020	---	< 0.000050	< 0.000020	---
(Duplicate)	05-Aug-2016		< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	0.00020	---	< 0.000050	< 0.000020	---
	13-Aug-2017		< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
(Duplicate)	13-Aug-2017		< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
	12-Jul-2018		< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	0.000010	0.000010	0.000012	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
(Duplicate)	12-Jul-2018		< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
	13-Jul-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
(Duplicate)	13-Jul-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	0.000017	0.000017	0.000012	< 0.000050	< 0.000050	0.000012	< 0.0000085	< 0.0000085	0.0000094	< 0.000010	< 0.000050	0.000013	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
Mainland East - B38 Remediation System - Inlets																										
B38-N-INLET	06-Jul-2016	**W-CAT-5**	< 0.00010	0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00043	< 0.0000085	---	**0.017**	---	**0.00043**	< 0.000020	---
	03-Sep-2019		0.00024	0.00031 #3	< 0.000040	0.000039	< 0.0000085	< 0.0000075	0.000010	0.000010	0.000011	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	0.000027	< 0.0000075	0.000014	0.00090	< 0.0000085	0.022	**0.013**	< 0.000050	**0.0012**	0.000094	< 0.00020
FTA-N-INLET	06-Jul-2016	**W-CAT-5**	0.00013 #1	0.00018 #1	---	< 0.000010	0.000022	< 0.0000075	0.000011	0.000011	< 0.0000085	---	---	< 0.0000085	< 0.0000085	0.000048	< 0.0000075	0.000017	0.00062	< 0.0000085	---	**0.0056**	---	**0.0011**	0.00013	---
	03-Sep-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.000088	< 0.0000085	0.0043	**0.0048**	< 0.000050	0.000087	< 0.000020	< 0.00020
LT7-Inlet	06-Jul-2016	**W-CAT-5**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00021	< 0.0000085	---	**0.011**	---	0.00017	< 0.000020	---
	03-Sep-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00021	< 0.0000085	0.012	**0.014**	< 0.000050	0.00017	< 0.000020	< 0.00020
Mainland East - Fire Training Area - Surficial Sediment																										
FTA 99-3-4	10-Sep-2016	**W-CAT-1**	0.00012 #1	< 0.00010	---	**0.000083**	0.000013	< 0.0000075	0.000012	0.000012	0.000017	---	---	< 0.0000085	< 0.0000085	0.000026	< 0.0000075	0.000022	0.00064	< 0.0000085	---	0.0011	---	0.00036	**0.00014**	---

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Table 8A

Groundwater Analytical Results: Polycyclic Aromatic Hydrocarbons

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Benzo(a)Pyrene Total Potency Equivalent (mg/L)	Benzo(a)Pyrene Total Potency Equivalent (ESRD) (mg/L)	Benzo(b,j)Fluoranthene (mg/L)	Benzo(c)Phenanthrene (mg/L)	Benzo(e)Pyrene (mg/L)	Benzo(g,h,i)Perylene (mg/L)	Benzo(k)Fluoranthene (mg/L)	Chrysene (mg/L)	Dibenzo(a,h)Anthracene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Indeno(1,2,3-c,d)Pyrene (mg/L)	2-Methylnaphthalene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			0.0058	---	0.0044	0.000012	0.000018	0.000015	---	---	---	---	---	---	---	---	---	0.00004	0.003	---	---	0.0011	---	0.0004	0.000025	0.0034
W-CAT-1			0.00010	---	0.00005	0.000010	0.000009	0.0000075	---	---	---	---	---	---	---	---	---	0.00004	0.00005	---	---	0.0001	---	0.00008	0.000036	0.0002
W-CAT-2			0.00010	---	0.00005	0.000010	0.000009	0.0000075	---	---	---	---	---	---	---	---	---	0.00001	0.00005	---	---	0.0001	---	0.00006	0.000020	0.0002
W-CAT-3			0.00053	---	0.00005	0.000012	0.000088	0.000035	---	---	---	---	---	---	---	---	---	0.00007	0.0016	---	---	0.0054	---	0.0037	0.00026	0.0002
W-CAT-4			0.00042	---	---	0.000024	0.000009	0.0000075	---	---	---	---	---	---	---	---	---	0.00006	0.0018	---	---	0.0031	---	0.0017	0.00020	---
W-CAT-5			0.00016	---	0.00005	0.000049	0.000038	0.000013	---	---	---	---	---	---	---	---	---	0.00030	0.0002	---	---	0.0035	---	0.00042	0.00022	0.0002
W-CAT-6			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
W-CAT-7			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
W-CAT-8			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mainland East - Former Refinery - Surficial Sediments																										
NWR 93-10-6	15-Aug-2016	**W-CAT-4**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00011	< 0.0000085	---	0.0015	---	< 0.000050	< 0.000020	---
RB-OBS-46	15-Aug-2016	**W-CAT-4**	0.0011 #1	0.0011 #1	---	< 0.000010	0.000039 #1	< 0.0000075	0.000017	0.000017	0.000034	---	---	0.000016	< 0.0000085	0.000083	< 0.0000075	0.000055	0.0035	< 0.0000085	---	0.011	---	0.0028	0.00043	---
RB-OBS-48	15-Aug-2016	**W-CAT-4**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	0.00028	---	< 0.000050	< 0.000020	---
RB-OBS-47	15-Aug-2016	**W-CAT-4**	< 0.00010	< 0.00010	---	0.000021	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	0.0000094	< 0.0000075	< 0.000010	0.00029	< 0.0000085	---	0.00069	---	0.00030	0.000042	---
RB-13-3-2.4	15-Aug-2016	**W-CAT-4**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.000060	< 0.0000085	---	0.0029	---	< 0.000050	0.000021	---
	01-Oct-2016		< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.000062	< 0.0000085	---	0.0038	---	< 0.000050	< 0.000020	---
RB-13-6-2.4	15-Aug-2016	**W-CAT-4**	0.00052	0.00039	---	0.00012	0.000028	0.000045	0.000063	0.000063	0.000033	---	---	0.000062	0.0000087	0.000030	0.0000079	0.000088	0.0011	0.000018	---	0.011	---	0.00093	0.00014	---
	01-Oct-2016		< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00016	< 0.0000085	---	0.0023	---	0.00010	< 0.000020	---
RB-RW-08	15-Aug-2016	**W-CAT-4**	0.00021 #1	0.00013 #1	---	0.000032	0.000011	< 0.0000075	0.000010	0.000010	< 0.0000085	---	---	< 0.0000085	< 0.0000085	0.000052	< 0.0000075	0.000017	0.00074	< 0.0000085	---	0.0018	---	0.0010	0.00014	---
RB-RW-09	15-Aug-2016	**W-CAT-4**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	0.0010	---	< 0.000050	< 0.000020	---
RB-RW-12	15-Aug-2016	**W-CAT-4**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	0.00023	---	< 0.000050	< 0.000020	---
RB-RW-4	15-Aug-2016	**W-CAT-4**	< 0.01	< 0.01	---	< 0.0010	< 0.00085	< 0.00075	0.00094	0.00094	< 0.00085	---	---	< 0.00085	< 0.00085	0.0011	< 0.00075	< 0.0010	0.013	< 0.00085	---	0.07	---	0.022	0.0023	---
RB-RW-5	02-Nov-2016	**W-CAT-4**	< 0.00010	< 0.00010	---	< 0.000010	0.000021 #1	< 0.0000075	0.000011	0.000011	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00024 #1	< 0.0000085	---	0.00075	---	0.00036	0.000085 #1	---
RB-RW-6	15-Aug-2016	**W-CAT-4**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000095	< 0.0000085	---	---	< 0.0000085	< 0.0000085	0.000022	< 0.0000075	< 0.000010	0.00015	< 0.0000085	---	0.00015	---	0.00028	0.000058	---
Mainland East - Former Refinery - Bedrock																										
NWR 09-2-26	12-Mar-2016	**W-CAT-3**	0.00011 #1	0.00013	---	< 0.000034 #2	0.000032	0.000017	0.000026	0.000026	< 0.0000085	---	---	< 0.0000085	< 0.0000085	0.000049	< 0.0000075	0.000034	0.00028	< 0.0000085	---	0.0090	---	0.00038	0.00010	---
	03-Nov-2016		< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00012	< 0.0000085	---	0.017	---	0.000074	< 0.000020	---
(Duplicate)	03-Nov-2016		< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00012	< 0.0000085	---	0.021	---	0.000073	< 0.000020	---
NWR 09-4-5	05-Aug-2016	**W-CAT-3**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00020	< 0.0000085	---	0.0015	---	0.00011	0.000024	---
	15-Aug-2017		< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.000061	< 0.0000085	0.00076	0.00074	< 0.000050	< 0.000050	0.000024	< 0.00020
	20-Jul-2018		< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.000084	< 0.0000085	0.00092	0.0013	< 0.000050	0.000054	0.000029	< 0.00020
	15-Jul-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.000080	< 0.0000085	0.00088	0.0016	< 0.000050	< 0.000050	0.000021	< 0.00020
NWR 09-5-19	12-Mar-2016	**W-CAT-3**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	0.000012	0.000069	< 0.0000085	---	0.00028	---	0.00017	0.000025	---
NWR 98-13-21	12-Mar-2016	**W-CAT-3**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	0.000011	0.000092	< 0.0000085	---	0.00029	---	0.00022	0.000025	---
	05-Aug-2016		< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	0.000010	0.000010	0.000014	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.000090	< 0.0000085	---	0.00020	---	0.00035	0.000025	---
(Duplicate)	05-Aug-2016		< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.000073	< 0.0000085	---	0.00015	---	0.00029	0.000021	---
	02-Nov-2016		< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00010	< 0.0000085	---	0.00015	---	0.00030	< 0.000020	---
	15-Aug-2017		< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	0.000021	0.000057	< 0.0000085	0.00023	0.00028	< 0.000050	0.00021	< 0.000020	< 0.00020
	20-Jul-2018		< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00012	< 0.0000085	0.00050	0.0012	< 0.000050	0.00023	< 0.000020	< 0.00020
(Duplicate)	20-Jul-2018		< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00012	< 0.0000085	0.00045	0.0011	< 0.000050	0.00023	< 0.000020	< 0.00020
	15-Jul-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	0.00017	0.00026	< 0.000050	0.000082	< 0.000020	< 0.00020
(Duplicate)	15-Jul-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	0.00016	0.00025	< 0.000050	0.000083	< 0.000020	< 0.00020
NWR-OBS33	02-Nov-2016	**W-CAT-3**	< 0.0050	< 0.0050	---	0.0018	< 0.00043	< 0.00038	0.00047	0.00048	< 0.00043	---	---	< 0.00043	< 0.00043	0.00094	< 0.00038	< 0.00050	0.012 #1	< 0.00043	---	0.026	---	0.026	0.0031	---

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Table 8A

Groundwater Analytical Results: Polycyclic Aromatic Hydrocarbons

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Benzo(a)Pyrene Total Potency Equivalent (mg/L)	Benzo(a)Pyrene Total Potency Equivalent (ESRD) (mg/L)	Benzo(b,j)Fluoranthene (mg/L)	Benzo(c)Phenanthrene (mg/L)	Benzo(e)Pyrene (mg/L)	Benzo(g,h,i)Perylene (mg/L)	Benzo(k)Fluoranthene (mg/L)	Chrysene (mg/L)	Dibenzo(a,h)Anthracene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Indeno(1,2,3-c,d)Pyrene (mg/L)	2-Methylnaphthalene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.0058**	**---**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.00004**	**0.003**	**---**	**---**	**0.0011**	**---**	**0.0004**	**0.000025**	**0.0034**
W-CAT-1			**0.00010**	**---**	**0.00005**	**0.000010**	**0.000009**	**0.0000075**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.00004**	**0.00005**	**---**	**---**	**0.0001**	**---**	**0.00008**	**0.000036**	**0.0002**
W-CAT-2			**0.00010**	**---**	**0.00005**	**0.000010**	**0.000009**	**0.0000075**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.00001**	**0.00005**	**---**	**---**	**0.0001**	**---**	**0.00006**	**0.000020**	**0.0002**
W-CAT-3			**0.00053**	**---**	**0.00005**	**0.000012**	**0.000088**	**0.000035**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.00007**	**0.0016**	**---**	**---**	**0.0054**	**---**	**0.0037**	**0.00026**	**0.0002**
W-CAT-4			**0.00042**	**---**	**---**	**0.000024**	**0.000009**	**0.0000075**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.00006**	**0.0018**	**---**	**---**	**0.0031**	**---**	**0.0017**	**0.00020**	**---**
W-CAT-5			**0.00016**	**---**	**0.00005**	**0.000049**	**0.000038**	**0.000013**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.00030**	**0.0002**	**---**	**---**	**0.0035**	**---**	**0.00042**	**0.00022**	**0.0002**
W-CAT-6			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-7			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W-CAT-8			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
RB-RW-10	15-Aug-2016	**W-CAT-3**	0.00033	0.00016	---	**0.000045**	0.000026	< 0.0000075	0.000012	0.000012	< 0.0000085	---	---	< 0.0000085	< 0.0000085	0.000069	< 0.0000075	0.000033	0.00082	< 0.0000085	---	**0.014**	---	0.0012	0.00015	---
P100	20-Aug-2016	**W-CAT-3**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00017	< 0.0000085	---	0.0036	---	0.00036	< 0.000020	---
	02-Nov-2016		0.00013	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00025	< 0.0000085	---	0.0032	---	0.00039	< 0.000020	---
	03-Sep-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00023	< 0.0000085	0.0042	0.0026	< 0.000050	0.00032	< 0.000020	< 0.00020
P200	20-Aug-2016	**W-CAT-3**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	**0.00017**	0.00018	0.00018	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.000075	< 0.0000085	---	0.0018	---	0.00019	< 0.000020	---
	02-Nov-2016		< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00013	< 0.0000085	---	0.0018	---	0.00025	< 0.000020	---
(Duplicate)	02-Nov-2016		< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00011	< 0.0000085	---	0.0016	---	0.00022	< 0.000020	---
	03-Sep-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.000075	< 0.0000085	0.00094	0.00096	< 0.000050	0.00017	< 0.000020	< 0.00020
P700	20-Aug-2016	**W-CAT-3**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.000059	< 0.0000085	---	0.0019	---	0.00029	< 0.000020	---
	02-Nov-2016		< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00011	< 0.0000085	---	0.0016	---	0.00033	< 0.000020	---
	03-Sep-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085 [#4]	< 0.0000085	< 0.0000085	< 0.0000075 [#4]	< 0.000010	0.000086	< 0.0000085 [#4]	0.00095	0.0010	< 0.000050	0.00027	< 0.000020	< 0.00020
Bear Island - Former Bear Island Battery - Surficial Sediment																										
BIBT1-16-1-3	04-Oct-2016	**W-CAT-2**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	< 0.00010	---	< 0.000050	< 0.000020	---
BIBT1-16-2-3	03-Oct-2016	**W-CAT-2**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	< 0.00010	---	< 0.000050	< 0.000020	---
BIBT1-16-3-3	03-Oct-2016	**W-CAT-2**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	< 0.00010	---	< 0.000050	< 0.000020	---
Bear Island - Bear Island East Sump (Sump 6) - Surficial Sediment																										
BIWS-16-1-4	03-Oct-2016	**W-CAT-2**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	< 0.00010	---	< 0.000050	< 0.000020	---
Bear Island - Former Bear Flare Pit - Surficial Sediment																										
BIFP-16-1-3	04-Oct-2016	**W-CAT-2**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	< 0.00010	---	**0.000090**	< 0.000020	---
BIFP-16-2-3	04-Oct-2016	**W-CAT-2**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	< 0.00010	---	**0.00010**	< 0.000020	---
BIFP-16-3-3	04-Oct-2016	**W-CAT-2**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	< 0.00010	---	**0.000095**	< 0.000020	---
Bear Island - Former Bear Flare Pit - Surface Water																										
BIFP-16-SW1	04-Oct-2016	**W-CAT-7**	< 0.00010	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	---	---	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	---	< 0.00010	---	< 0.000050	< 0.000020	---

Groundwater Analytical Results: Polycyclic Aromatic Hydrocarbons

PROJECT No.: 407011-00808-19100

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Benzo(a)Pyrene Total Potency Equivalent (mg/L)	Benzo(a)Pyrene Total Potency Equivalent (ESRD) (mg/L)	Benzo(b,j)Fluoranthene (mg/L)	Benzo(c)Phenanthrene (mg/L)	Benzo(e)Pyrene (mg/L)	Benzo(g,h,i)Perylene (mg/L)	Benzo(k)Fluoranthene (mg/L)	Chrysene (mg/L)	Dibenzo(a,h)Anthracene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Indeno(1,2,3-c,d)Pyrene (mg/L)	2-Methylnaphthalene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.0058**	---	**0.0044**	**0.000012**	**0.000018**	**0.000015**	---	---	---	---	---	---	---	---	---	**0.00004**	**0.003**	---	---	**0.0011**	---	**0.0004**	**0.000025**	**0.0034**
W-CAT-1			**0.00010**	---	**0.00005**	**0.000010**	**0.000009**	**0.0000075**	---	---	---	---	---	---	---	---	---	**0.00004**	**0.00005**	---	---	**0.0001**	---	**0.00008**	**0.000036**	**0.0002**
W-CAT-2			**0.00010**	---	**0.00005**	**0.000010**	**0.000009**	**0.0000075**	---	---	---	---	---	---	---	---	---	**0.00001**	**0.00005**	---	---	**0.0001**	---	**0.00006**	**0.000020**	**0.0002**
W-CAT-3			**0.00053**	---	**0.00005**	**0.000012**	**0.000088**	**0.000035**	---	---	---	---	---	---	---	---	---	**0.00007**	**0.0016**	---	---	**0.0054**	---	**0.0037**	**0.00026**	**0.0002**
W-CAT-4			**0.00042**	---	---	**0.000024**	**0.000009**	**0.0000075**	---	---	---	---	---	---	---	---	---	**0.00006**	**0.0018**	---	---	**0.0031**	---	**0.0017**	**0.00020**	---
W-CAT-5			**0.00016**	---	**0.00005**	**0.000049**	**0.000038**	**0.000013**	---	---	---	---	---	---	---	---	---	**0.00030**	**0.0002**	---	---	**0.0035**	---	**0.00042**	**0.00022**	**0.0002**
W-CAT-6			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
W-CAT-7			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
W-CAT-8			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Relative Percent Difference (RPD) Report																										
BT3 99-23-13	13-Jul-2019	**W-CAT-3**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
(Duplicate)	13-Jul-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	0.000017	0.000017	0.000012	< 0.000050	< 0.000050	0.000012	< 0.0000085	< 0.0000085	0.0000094	< 0.000010	< 0.000050	0.000013	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
RPD(%)			---	---	---	---	---	---	---	58.6%	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR 98-13-21	15-Jul-2019	**W-CAT-3**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	0.00017	0.00026	< 0.000050	0.000082	< 0.000020	< 0.00020
(Duplicate)	15-Jul-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	0.00016	0.00025	< 0.000050	0.000083	< 0.000020	< 0.00020
RPD(%)			---	---	---	---	---	---	---	0.0%	---	---	---	---	---	---	---	---	---	---	6.1%	3.9%	---	1.2%	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1).

6. Superscript $^{\#1}$ - Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.
7. Superscript $^{\#2}$ - Detection limits raised due to matrix interference.
8. Superscript $^{\#3}$ - Tentatively identified result and may be potentially biased high due to matrix interference.
9. Superscript $^{\#4}$ - Matrix spike exceeds acceptance limits due to probable matrix interference.
10. Background 95th Percentile Statistical Category:
    - W-CAT-1: Mainland Locations - Surficial Sediments - 95th Percentile Background
    - W-CAT-2: Bear, Goose, and Frenchy's Islands - Surficial Sediments - 95th Percentile Background
    - W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background
    - W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background
    - W-CAT-5: Surficial Sediments - Natural Gas & Non-Saline Water Seepage - 95th Percentile Background
    - W-CAT-6: Mainland Surface Water - 95th Percentile Background
    - W-CAT-7: Bear Island Surface Water - 95th Percentile Background
    - W-CAT-8: Goose Island Surface Water - 95th Percentile Background

Bold 11. Relative percent difference exceeds acceptable alert limit of 80%.

Advisian
Worley Group

Table 8B

Porewater Analytical Results: Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Background Category	PAH																						
			Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Benzo(a)Pyrene Total Potency Equivalent (mg/L)	Benzo(a)Pyrene Total Potency Equivalent (ESRD) (mg/L)	Benzo(b,j)Fluoranthene (mg/L)	Benzo(c)Phenanthrene (mg/L)	Benzo(e)Pyrene (mg/L)	Benzo(g,h,i)Perylene (mg/L)	Benzo(k)Fluoranthene (mg/L)	Chrysene (mg/L)	Dibenzo(a,h)Anthracene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Indeno(1,2,3-c,d)Pyrene (mg/L)	2-Methylnaphthalene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.0058**	**---**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.00004**	**0.003**	**---**	**---**	**0.0011**	**---**	**0.0004**	**0.000025**	**0.0034**
W-CAT-4			**0.00042**	**---**	**---**	**0.000024**	**0.000009**	**0.0000075**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.00006**	**0.0018**	**---**	**---**	**0.0031**	**---**	**0.00172**	**0.0002**	**---**
Refinery Bank Porewater - 2018 Locations																									
PW-18-1	18-Jul-2018	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
(Duplicate)	18-Jul-2018		< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-18-2	18-Jul-2018	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-18-3	18-Jul-2018	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-18-4	18-Jul-2018	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-18-5	18-Jul-2018	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-18-6	18-Jul-2018	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-18-7	19-Jul-2018	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-18-8	19-Jul-2018	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-18-9	19-Jul-2018	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-18-10	19-Jul-2018	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-18-11	19-Jul-2018	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-18-12	19-Jul-2018	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
Refinery Bank Porewater - 2019 Locations																									
PW-19-1	25-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	0.000060	< 0.000020	< 0.00020
PW-19-2	25-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	0.000057	< 0.000020	< 0.00020
PW-19-3	25-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	0.000052	< 0.000020	< 0.00020
PW-19-4	25-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-19-5	25-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	0.000055	< 0.000020	< 0.00020
PW-19-6	25-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	0.00011	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	0.00012	< 0.000020	< 0.00020

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Table 8B

Porewater Analytical Results: Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Background Category	PAH																								
			Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Benzo(a)Pyrene Total Potency Equivalent (mg/L)	Benzo(a)Pyrene Total Potency Equivalent (ESRD) (mg/L)	Benzo(b,j)Fluoranthene (mg/L)	Benzo(c)Phenanthrene (mg/L)	Benzo(e)Pyrene (mg/L)	Benzo(g,h,i)Perylene (mg/L)	Benzo(k)Fluoranthene (mg/L)	Chrysene (mg/L)	Dibenzo(a,h)Anthracene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Indeno(1,2,3-c,d)Pyrene (mg/L)	2-Methylnaphthalene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.0058**	**---**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.00004**	**0.003**	**---**	**---**	**0.0011**	**---**	**0.0004**	**0.000025**	**0.0034**
W-CAT-4			**0.00042**	**---**	**---**	**0.000024**	**0.000009**	**0.0000075**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.00006**	**0.0018**	**---**	**---**	**0.0031**	**---**	**0.00172**	**0.0002**	**---**
PW-19-7	25-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	0.00011	< 0.00010	< 0.000050	0.000059	< 0.000020	< 0.00020
PW-19-8	25-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
(Duplicate)	25-Sep-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-19-9	25-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	0.000052	< 0.000020	< 0.00020
PW-19-11	26-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-19-13	26-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-19-14	26-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	0.000063	< 0.000020	< 0.00020
PW-19-15	26-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	0.000069	< 0.000020	< 0.00020
(Duplicate)	26-Sep-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	0.000066	< 0.000020	< 0.00020
PW-19-16	26-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
PW-19-17	26-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020

Relative Percent Difference (RPD) Report

PW-19-8	25-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
(Duplicate)	25-Sep-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.00020
RPD(%)			---	---	---	---	---	---	---	**0.0%**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PW-19-15	26-Sep-2019	**W-CAT-4**	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	0.000069	< 0.000020	< 0.00020
(Duplicate)	26-Sep-2019		< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0000093	< 0.0000085	< 0.000050	< 0.000050	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.0000085	< 0.00010	< 0.00010	< 0.000050	0.000066	< 0.000020	< 0.00020
RPD(%)			---	---	---	---	---	---	---	**0.0%**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**4.4%**	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 updated Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 updated Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background

2019 Water Field and Trip Blanks: Petroleum Hydrocabrons (PHCs)

PROJECT No.: 417011-00096

Monitoring Station	Date (dd-mmm-yyyy)	Sample Name	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**
QA/QC Samples								
Groundwater Field Blank	11-Jul-2019	NWD19-11	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	12-Jul-2019	NWD19-12	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	13-Jul-2019	NWD19-13	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	14-Jul-2019	NWD19-14	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	15-Jul-2019	NWD19-15	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	18-Jul-2019	NWD19-16	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	16-Jul-2019	NWD19-17	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	17-Jul-2019	NWD19-101	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	03-Oct-2019	RB-DUP02	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
Groundwater Trip Blank	11-Jul-2019	NWD19-01	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	12-Jul-2019	NWD19-02	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	13-Jul-2019	NWD19-03	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	14-Jul-2019	NWD19-04	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	15-Jul-2019	NWD19-05	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	18-Jul-2019	NWD19-06	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	16-Jul-2019	NWD19-07	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	17-Jul-2019	NWD19-011	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10
	03-Oct-2019	RB-DUP3	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1).

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Table 10A

2019 Phase II ESA Fine-Grained Soil Analytical Results: General and Salinity Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity																
				Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Soluble Calcium (mg/L)	Soluble Chloride (mg/L)	Soluble Potassium (mg/L)	Soluble Magnesium (mg/L)	Soluble Sodium (mg/L)	Soluble Sulphate (mg/L)	Calcium (mg/kg)	Chloride (mg/kg)	Chloride (Calculated) (mg/kg)	Potassium (mg/kg)	Magnesium (mg/kg)	Sodium (mg/kg)	Sulphate (mg/kg)	% Saturation (%)
CCME Industrial Fine Surface				**4**	**12**	**(6 - 8)**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME Industrial Fine Sub-Surface				**4**	**12**	**(6 - 8)**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-1				**1.13**	**1.38**	**7.52**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-2				**0.71**	**1.65**	**7.49**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-3				**1.91**	**5.68**	**8.04**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-4				**1.52**	**22.85**	**7.67**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Former AST West of Cemetery Sump Area																				
CEM-19-03	30-Aug-2019	0.3 - 0.6m	S-CAT-1	2.4	0.27	6.75	420	140	2.7	120	25	850	350	120	120	2.3	100	21	710	84
	30-Aug-2019	2.0 - 2.5m	S-CAT-3	1.3	0.34	7.69	200	15	7.1	61	21	550	110	8.3	8.1	3.8	33	12	300	54
	30-Aug-2019	4.0 - 4.5m	S-CAT-3	1.1	0.53	7.76	140	14	7	57	30	520	67	6.9	6.9	3.4	28	14	250	49
CEM-19-04	31-Aug-2019	0.5 - 1.0m	S-CAT-3	2.7	0.15	6.54	700	72	3.4	230	18	820	550	57	57	2.7	180	14	640	79
	31-Aug-2019	2.5 - 3.0m	S-CAT-3	1.2	0.45	7.67	150	10	5.6	62	26	550	60	4.2	4	2.3	25	10	220	40
	31-Aug-2019	4.0 - 4.2m	S-CAT-3	3.1	0.45	7.72	540	9.2	11	190	48	2000	260	4.4	4.4	5.4	92	23	970	48
CEM-19-05	30-Aug-2019	0.2 - 0.5m	S-CAT-2	2.3	0.31	6.25	420	15	2.1	110	27	1000	340	12	12	1.7	89	22	840	81
	30-Aug-2019	2.0 - 2.5m	S-CAT-3	1.1	0.47	7.75	140	5.4	4.2	59	26	460	57	2.3	2.3	1.8	25	11	200	42
	30-Aug-2019	3.5 - 4.0m	S-CAT-3	3.3	0.61	7.67	520	25	11	240	67	2100	270	13	13	5.6	120	34	1100	51
	30-Aug-2019	5.0 - 5.5m	S-CAT-3	1.3	1.2	7.74	150	28	6.8	58	65	610	85	16	16	4	34	38	360	58
B-30X Well Site Area																				
B30-19-01	23-Aug-2019	0.6 - 1.0m	S-CAT-3	0.38	0.55	7.54	44	9.9	4.4	7.6	15	110	24	5.4	5.3	2.4	4.1	8.1	60	54
	23-Aug-2019	1.5 - 2.0m	S-CAT-3	0.76	1.1	7.67	79	21	6.7	28	43	300	35	9.2	9.2	2.9	12	19	130	44
	23-Aug-2019	4.0 - 4.5m	S-CAT-3	0.62	3.2	7.68	26	31	9.1	11	78	180	11	14	14	4.0	5.1	34	79	44
	23-Aug-2019	5.0 - 5.5m	S-CAT-4	0.99	4.3	7.39	36	51	22	16	120	430	22	31	31	14	9.6	74	260	61
B30-19-02	23-Aug-2019	0.0 - 0.5m	S-CAT-2	0.50	0.36	6.27	68	34	2.5	15	13	92	42	21	21	1.6	9.5	7.8	57	62
	23-Aug-2019	1.5 - 2.0m	S-CAT-3	3.1	4.4	7.64	420	64	20	60	370	2000	230	35	36	11	33	200	1100	56
B30-19-03	25-Aug-2019	3.5 - 4.0m	S-CAT-3	1.1	4.2	7.69	52	< 5.0	8.7	16	140	240	26	< 2.5	< 2.5	4.3	7.8	67	120	49
B30-19-04	25-Aug-2019	2.0 - 2.5m	S-CAT-3	0.48	3.2	7.60	17	81	6.3	7.6	62	190	11	52	53	4.1	4.9	40	120	65
	25-Aug-2019	3.5 - 4.0m	S-CAT-3	0.65	**13**	7.77	4.3	83	3.2	1.3	120	250	2.8	54	55	2.1	0.88	82	170	66
	25-Aug-2019	5.5 - 6.0m	S-CAT-4	0.62	16	7.76	2.3	40	5.6	1.7	130	98	1.2	21	21	2.9	0.90	67	50	52
B30-19-05	25-Aug-2019	3.5 - 4.0m	S-CAT-4	0.51	7.7	7.72	6.0	47	7.5	3.2	93	150	2.8	22	22	3.5	1.5	44	69	47
	25-Aug-2019	5.5 - 6.0m	S-CAT-4	0.64	13	7.83	3.9	54	6.2	1.5	120	170	2.1	29	29	3.3	0.82	66	91	53
B30-19-06	23-Aug-2019	1.0 - 1.5m	S-CAT-1	0.52	5.0	7.40	22	26	6.6	4.8	100	72	11	12	12	3.1	2.3	47	34	47
	23-Aug-2019	2.5 - 3.0m	S-CAT-3	0.76	5.6	7.81	19	40	15	12	120	220	7.3	15	15	5.7	4.4	48	84	38
	23-Aug-2019	3.5 - 4.0m	S-CAT-4	0.74	**39**	7.89	1.6	47	5.2	< 1.0	180	230	0.80	24	24	2.7	< 0.51	91	120	51
	23-Aug-2019	4.6 - 5.0m	S-CAT-4	0.81	12	7.86	5.9	64	10	5.1	160	200	2.7	29	29	4.7	2.3	74	91	45
Fire Training Area																				
FTA-19-01	29-Aug-2019	3.5 - 4.0m	S-CAT-3	0.35	0.9	7.79	33	23	6	11	23	70	14	10	10	2.6	4.6	10	30	44
FTA-19-02	28-Aug-2019	3.5 - 4.0m	S-CAT-3	0.41	0.52	7.84	37	24	5.4	19	16	87	15	9.9	9.8	2.2	7.9	6.5	36	41
Former Refinery (NWR) Area																				
NWR-19-02	26-Aug-2019	1.0 - 1.5m	S-CAT-3	0.4	0.41	7.45	54	11	6.2	15	13	58	44	8.9	8.9	5.1	12	11	47	81
	26-Aug-2019	2.5 - 3.0m	S-CAT-3	0.35	0.55	7.67	39	11	5.4	16	16	57	17	4.8	4.8	2.4	7.1	7.2	26	44
	26-Aug-2019	4.0 - 4.5m	S-CAT-3	0.43	0.72	7.66	36	48	7.9	16	21	76	22	29	29	4.7	9.3	12	46	60
	26-Aug-2019	5.0 - 5.5m	S-CAT-3	0.79	1.3	7.66	47	180	12	29	44	51	25	99	97	6.6	16	24	27	54
	26-Aug-2019	7.0 - 7.5m	S-CAT-4	0.57	9.2	7.62	6.6	35	12	1.4	99	170	2.8	15	15	5.2	0.59	42	71	43
NWR-19-03	25-Aug-2019	0.5 - 1.0m	S-CAT-3	0.91	**16**	7.8	5.9	45	7.5	2.2	180	400	4.1	31	31	5.1	1.5	130	280	69
	25-Aug-2019	2.5 - 3.0m	S-CAT-3	0.5	1.6	7.68	39	68	4.4	14	46	180	16	28	28	1.8	5.9	19	76	41
	25-Aug-2019	3.5 - 4.0m	S-CAT-3	0.29	1.4	7.7	20	30	7.3	8	28	52	7.7	12	12	2.9	3.1	11	20	39
Former Refinery (RB) Area																				
RB-19-01	27-Aug-2019	3.0 - 3.5m	S-CAT-3	0.32	8	7.71	2.7	38	3.6	1.3	65	80	1.6	22	22	2.1	0.8	38	47	59
	27-Aug-2019	6.3 - 6.6m	S-CAT-4	0.96	17	**8.03**	11	49	11	1.1	220	260	4.2	19	20	4.5	0.42	87	100	40
RB-19-05	27-Aug-2019	1.0 - 1.5m	S-CAT-3	0.64	0.44	7.83	110	24	4	13	18	210	53	12	12	2	6.3	8.9	110	50
RB-19-08	27-Aug-2019	4.0 - 4.5m	S-CAT-3	0.24	0.54	7.73	26	19	4.5	5.3	12	76	14	10	10	2.4	2.9	6.2	41	54
	27-Aug-2019	5.5 - 6.0m	S-CAT-4	0.28	0.85	7.67	21	38	5.8	7.5	18	120	12	21	21	3.2	4.1	9.8	68	55
	27-Aug-2019	8.5 - 9.0m	S-CAT-4	0.46	1.1	7.68	35	45	15	11	29	220	17	22	22	7.1	5.4	14	100	48
RB-19-09	27-Aug-2019	3.5 - 4.0m	S-CAT-3	0.49	0.36	7.79	66	23	4.8	14	12	150	31	11	11	2.3	6.8	5.9	72	47
RB-19-10	27-Aug-2019	2.5 - 3.0m	S-CAT-3	0.28	0.7	7.54	34	15	3	10	18	28	16	6.9	6.9	1.4	4.8	8.4	13	46
RB-19-11	27-Aug-2019	1.5 - 2.0m	S-CAT-3	0.37	0.38	7.68	50	13	5.6	8.7	11	22	29	7.6	7.5	3.2	5	6.4	13	58
RB-19-12	27-Aug-2019	0.5 - 1.0m	S-CAT-5	1.5	0.78	**8.13**	110	31	19	130	51	770	50	14	14	8.5	58	23	350	45
	27-Aug-2019	1.0 - 1.5m	S-CAT-3	1.3	1.1	7.88	63	38	20	100	61	140	27	16	16	8.8	44	27	61	43
RB-19-13	27-Aug-2019	1.0 - 1.5m	S-CAT-3	0.28	0.44	7.74	38	19	4	11	12	39	15	7.8	7.8	1.6	4.3	4.8	16	41
	27-Aug-2019	4.0 - 4.5m	S-CAT-4	0.38	9	7.89	2.1	32	10	2.6	82	140	1.4	20	20	6.5	1.7	53	88	64
RB-19-14	26-Aug-2019	2.5 - 3.0m	S-CAT-3	0.32	1.7	7.64	23	32	7.2	6.1	36	63	8.2	12	12	2.6	2.2	13	22	36
RB-19-16	28-Aug-2019	1.0 - 1.5m	S-CAT-3	0.53	2.8	7.41	39	31	3.2	12	79	97	24	19	19	2	7.3	48	60	61

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Surface soils, 2007 and updates)
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Subsurface soils, 2007 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Surface soils, 2007 and updates)
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Subsurface soils, 2007 and updates)

6. Background 95th Percentile Statistical Category:
S-CAT-1: Mainland - Organic Surface Soil - 95th Percentile Background (<0.5 mbgs)
S-CAT-2: Mainland - Mineral Surface Soil - 95th Percentile Background (<0.5 mbgs)
S-CAT-3: Mainland - Mineral Subsurface Soil - 95th Percentile Background (>0.5 mbgs)
S-CAT-4: Mainland - Bedrock Siltstone - 95th Percentile Background

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Table 10B

2019 Phase II ESA Coarse-Grained Soil Analytical Results: General and Salinity Parameters

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	General: Grain Size (none)	Salinity: Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Soluble Calcium (mg/L)	Soluble Chloride (mg/L)	Soluble Potassium (mg/L)	Soluble Magnesium (mg/L)	Soluble Sodium (mg/L)	Soluble Sulphate (mg/L)	Calcium (mg/kg)	Chloride (mg/kg)	Chloride (Calculated) (mg/kg)	Potassium (mg/kg)	Magnesium (mg/kg)	Sodium (mg/kg)	Sulphate (mg/kg)	% Saturation (%)
CCME Industrial Fine Surface				---	**4**	**12**	**(6 - 8)**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME Industrial Fine Sub-Surface				---	**4**	**12**	**(6 - 8)**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-2				---	**0.71**	**1.65**	**7.49**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-3				---	**1.91**	**5.68**	**8.04**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-4				---	**1.52**	**22.85**	**7.67**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
E-33X Well Site Area																					
E33-19-02	31-Aug-2019	3.5 - 4.0m	S-CAT-3	---	0.92	0.74	7.75	98	36	10	34	34	110	48	17	18	5.1	17	16	51	49
	31-Aug-2019	5.5 - 6.0m	S-CAT-3	---	1.3	0.85	7.7	170	45 [#1]	11	38	47	130 [#1]	75	19	19	4.9	16	20	54	43
E33-19-03	01-Sep-2019	2.7 - 3.0m	S-CAT-3	---	0.9	0.66	7.74	110	52	7.7	25	30	96	42	20	19	2.9	9.3	11	36	37
	01-Sep-2019	3.5 - 4.0m	S-CAT-4	---	0.48	1.8	**7.68**	25	64	15	12	43	170	13	33	33	7.9	6.3	22	91	52
	01-Sep-2019	5.5 - 6.0m	S-CAT-4	FINE	0.77	**24**	**8.24**	1.6	46	7.7	1.6	180	220	0.74	22	22	3.6	0.76	84	100	47
E33-19-04	31-Aug-2019	2.0 - 2.5m	S-CAT-3	---	0.69	2.1	7.72	45	80	9.9	18	67	59	22	40	40	4.9	9.2	33	29	50
	31-Aug-2019	3.5 - 4.0m	S-CAT-4	---	0.79	15	**7.74**	5	160	9.6	2.1	160	210	2.3	78	75	4.5	0.98	74	100	47
E33-19-05	31-Aug-2019	2.0 - 2.5m	S-CAT-3	---	0.73	0.84	**7.69**	68	160	7.4	26	32	200	30	70	70	3.2	11	14	87	44
	31-Aug-2019	3.0 - 3.5m	S-CAT-4	FINE	0.71	2.3	**7.71**	42	170	13	17	68	170	21	82	83	6.5	8.1	33	81	49
E33-19-06	01-Sep-2019	3.8 - 4.2m	S-CAT-3	---	0.83	1.1	7.46	89	59	7.6	19	43	65	55	36	36	4.7	12	27	40	61
	01-Sep-2019	5.0 - 5.5m	S-CAT-4	---	0.59	2.2	**7.73**	38	75	21	9.7	59	230	16	32	32	9.1	4.2	26	99	43

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 2007 and updates)
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 2007 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 2007 and updates)
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 2007 and updates)

6. Superscript [#1] - Detection limits raised due to sample matrix.
7. Background 95th Percentile Statistical Category:
S-CAT-3: Mainland - Mineral Subsurface Soil - 95th Percentile Background (<0.5 mbgs)
S-CAT-4: Mainland - Bedrock Siltstone - 95th Percentile Background (>0.5mbgs)

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Table 11A

2019 Phase II ESA Fine-Grained Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096				General		Petroleum Hydrocarbons (PHCs)									
Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	% Moisture (%)	Sieve - Pan (%)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Fine, Surface				---	---	110	330	430	230	---	---	---	---	---	---
CCME CSQG, Industrial, Fine, Subsurface				---	---	620	660	860	460	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	---	---	320	260	2500	6600	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	---	---	800	1000	5000	10000	---	---
S-CAT-1				---	---	0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	---
S-CAT-2				---	---	0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	---
S-CAT-3				---	---	0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	---
S-CAT-4				---	---	0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	---
Former AST West of the Cemetery Sump Area															
CEM-19-03	30-Aug-2019	0.3 - 0.6m	S-CAT-2	34	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	< 10	130	< 50	---	YES
(Duplicate)	30-Aug-2019	0.3 - 0.6m	S-CAT-2	39	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	< 10	160	< 50	---	YES
	30-Aug-2019	2.0 - 2.5m	S-CAT-3	20	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	< 10	71	< 50	---	YES
	30-Aug-2019	4.0 - 4.5m	S-CAT-3	18	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	YES
CEM-19-04	31-Aug-2019	0.5 - 1.0m	S-CAT-3	21	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	< 10	150	< 50	---	YES
	31-Aug-2019	2.5 - 3.0m	S-CAT-3	14	---	0.023	0.063	0.024	0.064	< 10	< 10	56	< 50	---	YES
	31-Aug-2019	4.0 - 4.2m	S-CAT-3	21	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	YES
CEM-19-05	30-Aug-2019	0.2 - 0.5m	S-CAT-2	33	---	0.023	< 0.050	< 0.010	< 0.045	< 10	< 10	70	< 50	---	YES
	30-Aug-2019	2.0 - 2.5m	S-CAT-3	17	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	< 10	59	< 50	---	YES
	30-Aug-2019	3.5 - 4.0m	S-CAT-3	19	---	0.015	< 0.050	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	YES
	30-Aug-2019	5.0 - 5.5m	S-CAT-3	24	---	0.0096	< 0.050	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	YES
B-30X Well Site Area															
B30-19-01	23-Aug-2019	0.6 - 1.0m	S-CAT-3	15	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	66	280	120	---	YES
	23-Aug-2019	1.5 - 2.0m	S-CAT-3	17	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	YES
	23-Aug-2019	4.0 - 4.5m	S-CAT-3	19	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	10	73	< 50	---	YES
	23-Aug-2019	5.0 - 5.5m	S-CAT-4	9.9	---	< 0.0050	< 0.050	0.038	0.13	37	360	1300	560	2300	NO
B30-19-02	23-Aug-2019	0.0 - 0.5m	S-CAT-2	27	---	< 0.0050	0.098	0.037	< 0.045	< 10	13	100	< 50	---	YES
	23-Aug-2019	1.5 - 2.0m	S-CAT-3	25	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	10	61	< 50	---	YES
B30-19-03	25-Aug-2019	0.5 - 1.0m	S-CAT-3	20	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	19	180	130	---	YES
	25-Aug-2019	2.5 - 3.0m	S-CAT-3	22	---	0.057 [#1]	< 0.050	0.021	0.10	410	800	1500	500	2200	NO
	25-Aug-2019	3.5 - 4.0m	S-CAT-3	17	---	0.12 [#1]	< 0.050	0.18	1.6	4100	20000	37000	12000	66000	NO
	25-Aug-2019	4.5 - 5.0m	S-CAT-3	18	---	0.063 [#1]	< 0.050	0.081	0.81	1300	4600	8200	2700	12000	NO

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Table 11A

2019 Phase II ESA Fine-Grained Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	General: % Moisture (%)	General: Sieve - Pan (%)	Petroleum Hydrocarbons (PHCs): Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Fine, Surface				---	---	110	330	430	230	---	---	---	---	---	---
CCME CSQG, Industrial, Fine, Subsurface				---	---	620	660	860	460	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	---	---	320	260	2500	6600	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	---	---	800	1000	5000	10000	---	---
S-CAT-1				---	---	0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	---
S-CAT-2				---	---	0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	---
S-CAT-3				---	---	0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	---
S-CAT-4				---	---	0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	---
B30-19-04	25-Aug-2019	0.6 - 1.0m	S-CAT-3	20	---	0.015	< 0.050	< 0.010	< 0.045	14	44	940	650	2200	NO
	25-Aug-2019	2.0 - 2.5m	S-CAT-3	22	---	0.058 #1	< 0.050	0.042	12	820	4200	7900	2700	11000	NO
	25-Aug-2019	3.5 - 4.0m	S-CAT-3	18	---	0.15 #1	< 0.084 #2	0.18	61	6200	16000	27000	8900	46000	NO
	25-Aug-2019	5.5 - 6.0m	S-CAT-4	18	---	0.13	< 0.050	0.078	1.1	330	1700	3200	1000	4700	NO
	25-Aug-2019	6.5 - 7.0m	S-CAT-4	12	---	0.12	0.11 #1	0.093	1.0	420	1400	2600	930	3800	NO
B30-19-05	25-Aug-2019	1.0 - 1.5m	S-CAT-3	19	---	< 0.0050	< 0.050	0.016	< 0.045	< 10	33	220	98	---	YES
	25-Aug-2019	2.0 - 2.5m	S-CAT-3	21	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	14	100	< 50	---	YES
	25-Aug-2019	3.5 - 4.0m	S-CAT-4	11	---	0.013	< 0.050	0.028	0.091	210	1100	2400	850	4200	NO
	25-Aug-2019	5.5 - 6.0m	S-CAT-4	12	---	0.012	< 0.050	0.039	0.24	310	1500	3200	1100	4600	NO
B30-19-06	23-Aug-2019	1.0 - 1.5m	S-CAT-1	19	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	YES
	23-Aug-2019	2.5 - 3.0m	S-CAT-3	20	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	< 10	53	< 50	---	YES
	23-Aug-2019	3.5 - 4.0m	S-CAT-4	11	---	< 0.0050	< 0.050	< 0.010	< 0.045	63	560	1500	600	2500	NO
	23-Aug-2019	4.6 - 5.0m	S-CAT-4	22	---	< 0.0050	< 0.050	0.016	< 0.045	110	370	1000	430	2200	NO
Fire Training Area															
FTA-19-01	29-Aug-2019	0.2 - 0.5m	S-CAT-2	11	---	0.11	< 0.050	< 0.010	< 0.045	< 10	3100	73000	30000	---	YES
	29-Aug-2019	1.5 - 2.0m	S-CAT-3	21	---	0.09	< 0.050	< 0.010	< 0.045	< 10	14	99	< 50	---	YES
	29-Aug-2019	3.5 - 4.0m	S-CAT-3	23	---	0.18	< 0.050	0.015	< 0.045	< 10	13	60	< 50	---	YES
	29-Aug-2019	5.5 - 6.0m	S-CAT-3	22	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	20	100	< 50	---	YES
FTA-19-02	28-Aug-2019	0.3 - 0.5m	S-CAT-2	17	---	7.7	0.16 #1	24	110	3700	5300	56000	19000	90000	NO
	28-Aug-2019	2.0 - 2.5m	S-CAT-3	20	---	0.02	< 0.050	< 0.010	< 0.045	< 10	< 10	64	< 50	---	YES
	28-Aug-2019	3.5 - 4.0m	S-CAT-3	21	---	0.023	< 0.050	< 0.010	< 0.045	< 10	10	71	< 50	---	YES
	28-Aug-2019	5.5 - 6.0m	S-CAT-3	20	---	0.16	0.071	< 0.010	< 0.045	< 10	27	230	160	---	YES

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Table 11A

2019 Phase II ESA Fine-Grained Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	General: % Moisture (%)	General: Sieve - Pan (%)	PHCs: Benzene (mg/kg)	PHCs: Toluene (mg/kg)	PHCs: Ethylbenzene (mg/kg)	PHCs: Xylenes (Total) (mg/kg)	PHCs: PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHCs: PHC F2 (C_{10}-C_{16}) (mg/kg)	PHCs: PHC F3 (C_{16}-C_{34}) (mg/kg)	PHCs: PHC F4 (C_{34}-C_{50}) (mg/kg)	PHCs: PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	PHCs: Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Fine, Surface				---	---	110	330	430	230	---	---	---	---	---	---
CCME CSQG, Industrial, Fine, Subsurface				---	---	620	660	860	460	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	---	---	320	260	2500	6600	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	---	---	800	1000	5000	10000	---	---
S-CAT-1				---	---	0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	---
S-CAT-2				---	---	0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	---
S-CAT-3				---	---	0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	---
S-CAT-4				---	---	0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	---
FTA-19-03	28-Aug-2019	0.5 - 1.0m	S-CAT-3	15	---	9.3	< 0.050	1.3	3.3	480	7600	26000	8300	34000	NO
	28-Aug-2019	2.0 - 2.5m	S-CAT-3	22	---	0.019	< 0.050	0.018 #1	< 0.045	< 10	21	170	110	---	YES
	28-Aug-2019	3.5 - 4.0m	S-CAT-3	22	---	0.054	< 0.050	< 0.010	< 0.045	12	17	87	53	---	YES
	28-Aug-2019	5.5 - 6.0m	S-CAT-3	21	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	20	120	60	---	YES
FTA-19-04	29-Aug-2019	1.0 - 1.5m	S-CAT-3	13	---	51	38	44	110	7800	3800	3000	450	---	YES
	29-Aug-2019	2.5 - 3.0m	S-CAT-3	20	---	53	160 #3	49	200	8000	1800	1500	270	---	YES
	29-Aug-2019	4.0 - 4.5m	S-CAT-3	22	---	0.035	< 0.050	< 0.010	< 0.045	< 10	10	< 50	< 50	---	YES
	29-Aug-2019	5.5 - 6.0m	S-CAT-3	20	---	0.053	0.09	0.032	0.11	22	21	87	< 50	---	YES
FTA-19-06	29-Aug-2019	1.0 - 1.5m	S-CAT-3	18	---	0.13	< 0.050	0.22	0.13	2000	1100	1100	120	---	YES
	29-Aug-2019	2.5 - 3.0m	S-CAT-3	20	---	6.7	0.51	0.015 #1	< 0.045	180	410	280	< 50	---	YES
	29-Aug-2019	4.0 - 4.5m	S-CAT-3	22	---	0.16	< 0.050	< 0.010	< 0.045	12	< 10	65	< 50	---	YES
	29-Aug-2019	5.5 - 6.0m	S-CAT-3	16	---	0.93	0.21	< 0.010	< 0.045	62	26	420	260	---	YES
(Duplicate)	29-Aug-2019	5.5 - 6.0m	S-CAT-3	14	---	1.2	0.24	0.015	< 0.045	66	24	370	210	---	YES
FTA-19-07	29-Aug-2019	0.5 - 1.0m	S-CAT-3	9.3	---	0.77	0.13 #1	0.76	7.4	630	420	710	98	---	YES
(Duplicate)	29-Aug-2019	0.5 - 1.0m	S-CAT-3	21	---	21	30	6.2	28	440	140	150	< 50	---	YES
	29-Aug-2019	2.5 - 3.0m	S-CAT-3	21	---	85	200 #3	47	200	9200	450	420	64	---	YES
FTA-19-08	29-Aug-2019	1.0 - 1.5m	S-CAT-3	8.2	---	76 #3	220 #3	63 #3	290	8300	2300	2000	280	---	YES
(Duplicate)	29-Aug-2019	1.0 - 1.5m	S-CAT-3	9.2	---	44	220 #3	45	210	7900	2600	2100	300	---	YES
	29-Aug-2019	2.5 - 3.0m	S-CAT-3	19	---	130 #3	330 #3	85 #3	360	15000	870	660	56	---	YES
FTA-19-09	30-Aug-2019	1.0 - 1.5m	S-CAT-3	38	---	250 #3	900 #3	250 #3	1100	32000	16000	12000	1600	---	YES

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Table 11A

2019 Phase II ESA Fine-Grained Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	General: % Moisture (%)	General: Sieve - Pan (%)	Petroleum Hydrocarbons (PHCs): Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Fine, Surface				---	---	110	330	430	230	---	---	---	---	---	---
CCME CSQG, Industrial, Fine, Subsurface				---	---	620	660	860	460	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	---	---	320	260	2500	6600	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	---	---	800	1000	5000	10000	---	---
S-CAT-1				---	---	0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	---
S-CAT-2				---	---	0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	---
S-CAT-3				---	---	0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	---
S-CAT-4				---	---	0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	---
FTA-19-10	29-Aug-2019	0.5 - 1.0m	S-CAT-3	18	---	47	0.29 #1	34	140	3900	7000	7600	1900	---	YES
	29-Aug-2019	2.0 - 2.5m	S-CAT-3	18	---	160 #3	370 #3	120 #3	500	16000	8800	5600	740	---	YES
	29-Aug-2019	4.0 - 4.2m	S-CAT-3	22	---	0.71	1.7	0.5	2.2	96	71	150	71	---	YES
(Duplicate)	29-Aug-2019	4.0 - 4.2m	S-CAT-3	21	---	0.027	< 0.050	0.026	0.11	< 10	< 10	56	< 50	---	YES
FTA-19-11	30-Aug-2019	0.5 - 1.0m	S-CAT-3	13	---	36	41	55	260	8300	2500	2100	310	---	YES
	30-Aug-2019	2.5 - 3.0m	S-CAT-3	19	---	17	12	5.1	21	500	320	270	< 50	---	YES
FTA-19-12	30-Aug-2019	1.2 - 1.5m	S-CAT-3	14	---	57	250 #3	74	330	12000	2400	1700	130	---	YES
	30-Aug-2019	2.5 - 3.0m	S-CAT-3	23	---	19	0.63	3.3	12	64	< 10	< 50	< 50	---	YES
	30-Aug-2019	4.0 - 4.5m	S-CAT-3	21	---	0.48	0.2	0.062	0.27	15	< 10	< 50	< 50	---	YES
	30-Aug-2019	5.5 - 6.0m	S-CAT-3	13	---	0.14	0.25	0.068	0.29	13	21	120	64	---	YES
FTA-19-13	29-Aug-2019	0.7 - 1.0m	S-CAT-3	20	---	1.1	0.19	0.19	0.22	260	1900	890	< 50	---	YES
	29-Aug-2019	2.0 - 2.5m	S-CAT-3	23	---	16	< 0.050	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	YES
	29-Aug-2019	3.5 - 4.0m	S-CAT-3	24	---	0.097	< 0.050	< 0.010	< 0.045	< 10	46	140	78	---	YES
	29-Aug-2019	5.5 - 6.0m	S-CAT-3	18	---	0.026	< 0.050	< 0.010	< 0.045	13	36	150	65	---	YES
FTA-19-14	29-Aug-2019	0.5 - 1.0m	S-CAT-1	19	---	0.44	< 0.050	0.37	0.84	85	1100	520	< 50	---	YES
(Duplicate)	29-Aug-2019	0.5 - 1.0m	S-CAT-1	18	---	0.51	< 0.050	0.53	1.2	160	1700	720	< 50	---	YES
	29-Aug-2019	2.0 - 2.5m	S-CAT-3	25	---	11	< 0.050	< 0.010	< 0.045	24	< 10	< 50	< 50	---	YES
	29-Aug-2019	4.0 - 4.5m	S-CAT-3	20	---	5.7	< 0.050	< 0.010	< 0.045	< 10	13	92	< 50	---	YES
	29-Aug-2019	5.5 - 6.0m	S-CAT-3	14	---	0.15	< 0.050	< 0.010	< 0.045	< 10	30	160	74	---	YES
FTA-19-15	29-Aug-2019	1.0 - 1.5m	S-CAT-3	19	---	1.1	0.22	< 0.010	< 0.045	29	< 10	< 50	< 50	---	YES
	29-Aug-2019	2.5 - 3.0m	S-CAT-3	22	---	0.039	< 0.050	< 0.010	< 0.045	< 10	< 10	55	< 50	---	YES
	29-Aug-2019	4.0 - 4.5m	S-CAT-3	23	---	0.83	0.21	0.017	0.061	63	< 10	70	< 50	---	YES
	29-Aug-2019	5.5 - 6.0m	S-CAT-3	17	---	3.9	0.85	0.052	0.12	270	1700	4700	1800	5900	NO

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Table 11A

2019 Phase II ESA Fine-Grained Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	General: % Moisture (%)	General: Sieve - Pan (%)	Petroleum Hydrocarbons (PHCs): Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Fine, Surface				---	---	110	330	430	230	---	---	---	---	---	---
CCME CSQG, Industrial, Fine, Subsurface				---	---	620	660	860	460	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	---	---	320	260	2500	6600	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	---	---	800	1000	5000	10000	---	---
S-CAT-1				---	---	0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	---
S-CAT-2				---	---	0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	---
S-CAT-3				---	---	0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	---
S-CAT-4				---	---	0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	---
FTA-19-16	30-Aug-2019	1.0 - 1.5m	S-CAT-3	13	---	1.5	1.6	0.69	2.8	46	< 10	< 50	< 50	---	YES
(Duplicate)	30-Aug-2019	1.0 - 1.5m	S-CAT-3	14	---	1.8	1	0.92	3.3	42	< 10	50	< 50	---	YES
	30-Aug-2019	2.5 - 3.0m	S-CAT-3	22	---	0.013	< 0.050	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	YES
	30-Aug-2019	3.0 - 3.5m	S-CAT-3	23	---	0.023	< 0.050	< 0.010	< 0.045	< 10	< 10	57	< 50	---	YES
FTA-19-17	30-Aug-2019	1.0 - 1.5m	S-CAT-3	13	---	160 #3	630 #3	150 #3	700	20000	1400	1500	320	---	YES
	30-Aug-2019	2.5 - 3.0m	S-CAT-3	22	---	0.41	0.86	0.18	0.84	41	27	65	< 50	---	YES
Former Refinery (NWR) Area															
NWR-19-01	26-Aug-2019	0.5 - 1.0m	S-CAT-3	30	---	35	90	29	110	14000	160	290	87	---	YES
	26-Aug-2019	2.5 - 3.0m	S-CAT-3	16	---	11	3.5	2.3	7.2	250	< 10	< 50	< 50	---	YES
	26-Aug-2019	4.0 - 4.5m	S-CAT-3	20	---	13	1.1	0.073	0.12	160	< 10	< 50	< 50	---	YES
	26-Aug-2019	5.0 - 5.5m	S-CAT-4	9	---	6.3	1	0.057	0.14	150	82	220	78	---	YES
NWR-19-02	26-Aug-2019	1.0 - 1.5m	S-CAT-3	26	---	150 #3	400 #3	110	510	19000	11000	9800	1900	---	YES
	26-Aug-2019	2.5 - 3.0m	S-CAT-3	14	---	15	13	2.4	9.7	350	160	130	< 50	---	YES
	26-Aug-2019	4.0 - 4.5m	S-CAT-3	18	---	31	69	15	66	4200	2600	1300	87	---	YES
	26-Aug-2019	5.0 - 5.5m	S-CAT-3	16	---	57	190 #3	40	190	6900	4100	2400	270	---	YES
	26-Aug-2019	7.0 - 7.5m	S-CAT-4	7.7	---	12	6.2	2.3	11	550	470	570	160	---	YES
NWR-19-03	25-Aug-2019	0.5 - 1.0m	S-CAT-3	14	---	3.4	< 0.050	0.18	0.11	120	140	400	140	---	YES
	25-Aug-2019	2.5 - 3.0m	S-CAT-3	15	---	2.3	0.23	2.9	7.8	100	24	52	< 50	---	YES
	25-Aug-2019	3.5 - 4.0m	S-CAT-3	16	---	3.3	< 0.050	2	5.3	98	< 10	< 50	< 50	---	YES
NWR-19-04	26-Aug-2019	0.5 - 1.0m	S-CAT-3	24	---	0.034	< 0.050	0.25	0.12	< 10	220	1000	220	---	YES
	26-Aug-2019	2.5 - 2.0m	S-CAT-3	15	---	1.2	< 0.050	5.3	4.3	670	630	480	51	---	YES

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Table 11A

2019 Phase II ESA Fine-Grained Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096				General		Petroleum Hydrocarbons (PHCs)									
Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	% Moisture (%)	Sieve - Pan (%)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Fine, Surface				---	---	110	330	430	230	---	---	---	---	---	---
CCME CSQG, Industrial, Fine, Subsurface				---	---	620	660	860	460	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	---	---	320	260	2500	6600	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	---	---	800	1000	5000	10000	---	---
S-CAT-1				---	---	0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	---
S-CAT-2				---	---	0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	---
S-CAT-3				---	---	0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	---
S-CAT-4				---	---	0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	---
NWR-19-05	26-Aug-2019	0.5 - 1.0m	S-CAT-3	19	---	0.82	0.11	18	62	520	38	130	< 50	---	YES
	26-Aug-2019	2.5 - 3.0m	S-CAT-3	21	---	5.9	17	18	78	1300	230	210	< 50	---	YES
	26-Aug-2019	3.5 - 4.0m	S-CAT-3	21	---	4.2	< 0.050	0.051	0.22	22	< 10	80	< 50	---	YES
	26-Aug-2019	5.5 - 6.0m	S-CAT-3	21	---	0.0077	< 0.050	< 0.010	< 0.045	< 10	< 10	51	< 50	---	YES
NWR-19-06	26-Aug-2019	1.0 - 1.5m	S-CAT-3	43	---	0.048	< 0.050	< 0.010	< 0.045	11	630	3100	860	2400	NO
	26-Aug-2019	2.5 - 3.0m	S-CAT-3	21	---	1.4	< 0.050	< 0.010	< 0.045	15	13	97	< 50	---	YES
	26-Aug-2019	4.0 - 4.5m	S-CAT-3	20	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	< 10	66	< 50	---	YES
	26-Aug-2019	5.5 - 6.0m	S-CAT-3	18	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	10	78	< 50	---	YES
NWR-19-07	26-Aug-2019	0.4 - 0.7m	S-CAT-2	16	---	0.045	0.069	0.054	0.19	70	5400	4000	230	---	YES
	26-Aug-2019	2.0 - 2.5m	S-CAT-3	21	---	0.35	< 0.050	< 0.010	< 0.045	24	< 10	86	< 50	---	YES
	26-Aug-2019	3.5 - 4.0m	S-CAT-3	18	---	0.025	< 0.050	< 0.010	< 0.045	18	< 10	65	< 50	---	YES
	26-Aug-2019	5.5 - 6.0m	S-CAT-3	20	---	0.028	< 0.050	0.014	< 0.045	56	78	180	62	---	YES
NWR-19-08	26-Aug-2019	0.5 - 1.0m	S-CAT-2	14	---	0.46	0.15	0.17	0.49	150	2400	2400	260	---	YES
	26-Aug-2019	1.5 - 2.0m	S-CAT-3	15	---	1.5	0.46	0.026	0.063	64	< 10	< 50	< 50	---	YES
	26-Aug-2019	4.0 - 4.5m	S-CAT-3	18	---	3	1.1	0.052	0.13	120	13	110	72	---	YES
	26-Aug-2019	5.5 - 6.0m	S-CAT-3	19	---	3.2	1.3	0.083	0.22	130	< 10	79	< 50	---	YES
NWR-19-09	26-Aug-2019	1.0 - 1.5m	S-CAT-3	16	---	0.076	< 0.050	< 0.010	< 0.045	10	< 10	< 50	< 50	---	YES
	26-Aug-2019	2.5 - 3.0m	S-CAT-3	20	---	0.14	< 0.050	< 0.010	< 0.045	< 10	< 10	58	< 50	---	YES
	26-Aug-2019	4.0 - 4.5m	S-CAT-3	20	---	0.025	< 0.050	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	YES
	26-Aug-2019	5.0 - 5.5m	S-CAT-3	22	---	0.086	< 0.050	< 0.010	< 0.045	< 10	< 10	78	< 50	---	YES

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Table 11A

2019 Phase II ESA Fine-Grained Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	General		Petroleum Hydrocarbons (PHCs)									
				% Moisture (%)	Sieve - Pan (%)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Fine, Surface				---	---	110	330	430	230	---	---	---	---	---	---
CCME CSQG, Industrial, Fine, Subsurface				---	---	620	660	860	460	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	---	---	320	260	2500	6600	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	---	---	800	1000	5000	10000	---	---
S-CAT-1				---	---	0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	---
S-CAT-2				---	---	0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	---
S-CAT-3				---	---	0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	---
S-CAT-4				---	---	0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	---
Former Refinery (RB) Area															
RB-19-01	27-Aug-2019	0.5 - 1.0m	S-CAT-3	17	---	1.7	0.088	2.3	0.52	2100	250	110	< 50	---	YES
	27-Aug-2019	2.0 - 2.5m	S-CAT-3	8.3	---	7.7	2.8	18	41	2500	230	150	< 50	---	YES
	27-Aug-2019	3.0 - 3.5m	S-CAT-3	16	---	18	0.18 #1	10	9.8	2000	370	470	130	---	YES
	27-Aug-2019	5.5 - 6.0m	S-CAT-4	6.8	---	4.2	3.3	1.1	3.6	510	760	1200	380	1900	NO
	27-Aug-2019	6.3 - 6.6m	S-CAT-4	4.1	---	7.3	7.3	2	5.3	570	200	380	150	---	YES
RB-19-02	28-Aug-2019	1.0 - 1.5m	S-CAT-3	26	---	44	72	30	120	5400	2300	1300	180	---	YES
	28-Aug-2019	2.5 - 3.0m	S-CAT-3	18	---	250 #3	790 #3	190 #3	760	30000	7200	3000	200	---	YES
	28-Aug-2019	4.0 - 4.5m	S-CAT-3	8.3	---	14	38	8.9	32	1400	490 #4	310	< 50	---	YES
(Duplicate)	28-Aug-2019	4.0 - 4.5m	S-CAT-3	12	---	13	39	9.3	34	1500	190	180	< 50	---	YES
	28-Aug-2019	5.0 - 5.5m	S-CAT-3	19	---	24 #3	73 #3	16 #3	72	2900	2700	1700	360	---	YES
	28-Aug-2019	7.0 - 7.5m	S-CAT-4	7.5	---	2.2	12	4.8	21	400	1500	2900	1000	4500	NO
RB-19-03	28-Aug-2019	1.0 - 1.5m	S-CAT-3	34	---	28	3	13	46	860	2100	1500	450	---	YES
	28-Aug-2019	2.5 - 3.0m	S-CAT-3	19	---	17	0.49	3.5	2.4	280	12	150	65	---	YES
	28-Aug-2019	4.0 - 4.5m	S-CAT-3	12	---	6.9	0.47	0.37	0.43	270	39	320	230	---	YES
	28-Aug-2019	5.5 - 6.0m	S-CAT-4	8.7	---	13	6.4	1.9	12	1800	2900	5300	1800	7200	NO
	28-Aug-2019	7.0 - 7.5m	S-CAT-4	7.8	---	0.81	0.78	0.44	2.4	280	1500	3200	1200	4400	NO
	28-Aug-2019	8.5 - 9.0m	S-CAT-4	7.6	---	0.55	0.95	0.56	3.3	170	740	1500	510	2300	NO
(Duplicate)	28-Aug-2019	8.5 - 9.0m	S-CAT-4	6.9	---	3.3	2.3	0.48	3.5	330	700	1300	440	1800	NO
RB-19-04	28-Aug-2019	1.0 - 1.5m	S-CAT-3	31	---	9.6 #3	11 #3	1.3 #3	4.3	280	18	230	64	---	YES
	28-Aug-2019	2.5 - 3.0m	S-CAT-3	18	---	0.76	0.68	0.17	0.38	69	17	73	< 50	---	YES
	28-Aug-2019	4.0 - 4.5m	S-CAT-3	9.4	---	0.13	0.14	0.02	0.051	24	38	270	110	---	YES
	28-Aug-2019	5.5 - 6.0m	S-CAT-4	9.3	---	0.33	0.28	0.072	0.1	210	1600	3700	1300	4900	NO
	28-Aug-2019	7.0 - 7.5m	S-CAT-4	7.2	---	4.2 #6	3.5 #6	0.37 #6	1.1	400	470	1100	410	---	YES

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Table 11A

2019 Phase II ESA Fine-Grained Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	General: % Moisture (%)	General: Sieve - Pan (%)	Petroleum Hydrocarbons (PHCs): Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Fine, Surface				---	---	110	330	430	230	---	---	---	---	---	---
CCME CSQG, Industrial, Fine, Subsurface				---	---	620	660	860	460	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	---	---	320	260	2500	6600	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	---	---	800	1000	5000	10000	---	---
S-CAT-1				---	---	0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	---
S-CAT-2				---	---	0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	---
S-CAT-3				---	---	0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	---
S-CAT-4				---	---	0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	---
RB-19-05	27-Aug-2019	1.0 - 1.5m	S-CAT-3	16	---	0.067	< 0.050	0.083	< 0.045	25	58	250	89	---	YES
	27-Aug-2019	2.0 - 2.5m	S-CAT-3	12	---	0.21	0.14	0.058	0.11	56	29	470	330	1300	NO
	27-Aug-2019	4.0 - 4.5m	S-CAT-3	10	---	0.31	0.18	0.039	0.14	390	1000	2400	1000	4100	NO
	27-Aug-2019	5.5 - 6.0m	S-CAT-4	8	---	0.46	0.073	0.029	0.13	200	400	1100	410	2000	NO
RB-19-08	27-Aug-2019	1.0 - 1.5m	S-CAT-3	26	---	0.033	< 0.050	0.057	0.074	12	700	2000	170	---	YES
	27-Aug-2019	2.5 - 3.0m	S-CAT-3	15	---	0.023	< 0.050	0.021	< 0.045	46	22	450	490	1400	NO
	27-Aug-2019	4.0 - 4.5m	S-CAT-3	10	---	0.089	< 0.050	0.024	0.066	79	220	1400	650	2000	NO
(Duplicate)	27-Aug-2019	4.0 - 4.5m	S-CAT-3	10	---	0.031	< 0.050	< 0.010	< 0.045	54	350	1800	760	2100	NO
	27-Aug-2019	5.5 - 6.0m	S-CAT-4	8.3	---	0.76	0.1	0.054	0.18	85	110	250	79	---	YES
	27-Aug-2019	7.0 - 7.5m	S-CAT-4	7.8	---	0.64	0.18	0.22	0.64	110	190	250	66	---	YES
	27-Aug-2019	8.5 - 9.0m	S-CAT-4	6.7	---	0.73	0.29	0.38	3.1	120	88	81	< 50	---	YES
RB-19-09	27-Aug-2019	0.5 - 1.0m	S-CAT-3	22	---	0.039	< 0.050	0.12	0.29	65	13000	8800	150	---	YES
	27-Aug-2019	2.5 - 3.0m	S-CAT-3	17	---	0.15	0.091	0.24	2.5	130	430	410	340	1800	NO
	27-Aug-2019	3.5 - 4.0m	S-CAT-3	10	---	0.36	0.17	0.097	0.35	320	160	1200	520	1900	NO
	27-Aug-2019	5.5 - 6.0m	S-CAT-4	8	---	0.43	0.11	0.1	0.45	230	840	2000	720	3300	NO
RB-19-10	27-Aug-2019	0.0 - 0.5m	S-CAT-2	9.8	---	0.17	0.11	0.054	0.19	110	49	1200	820	2700	NO
	27-Aug-2019	2.5 - 3.0m	S-CAT-3	16	---	1	0.14 [#1]	17	81	3900	7200	2000	460	---	YES
	27-Aug-2019	4.0 - 4.5m	S-CAT-4	11	---	0.48	< 0.050	0.31	0.61	1300	330	1400	610	2200	NO
	27-Aug-2019	5.0 - 5.5m	S-CAT-4	8.2	---	0.25	< 0.050	0.11	0.21	470	650	1800	620	2300	NO
	27-Aug-2019	7.0 - 7.5m	S-CAT-4	8.2	---	1.5	0.67	1.1	4.1	500	820	1400	530	1800	NO

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Table 11A

2019 Phase II ESA Fine-Grained Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	General: % Moisture (%)	General: Sieve - Pan (%)	Petroleum Hydrocarbons (PHCs): Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Fine, Surface				---	---	110	330	430	230	---	---	---	---	---	---
CCME CSQG, Industrial, Fine, Subsurface				---	---	620	660	860	460	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	---	---	320	260	2500	6600	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	---	---	800	1000	5000	10000	---	---
S-CAT-1				---	---	0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	---
S-CAT-2				---	---	0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	---
S-CAT-3				---	---	0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	---
S-CAT-4				---	---	0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	---
RB-19-11	27-Aug-2019	0.5 - 1.0m	S-CAT-3	19	---	0.91	0.57	0.16	0.51	80	15	250	110	---	YES
	27-Aug-2019	1.5 - 2.0m	S-CAT-3	14	---	17 #7	100 #3	60 #3	450	15000	2500	1900	450	---	YES
	27-Aug-2019	3.0 - 3.5m	S-CAT-3	11	---	13	3.5	8.9	27	2800	3400	5900	2000	7800	NO
	27-Aug-2019	5.0 - 5.5m	S-CAT-4	7.9	---	4.6	4	1.6	7.9	1100	1500	2800	1000	4600	NO
RB-19-12	27-Aug-2019	0.5 - 1.0m	S-CAT-3	20	---	0.014	< 0.050	< 0.010	< 0.045	12	28	84	< 50	---	YES
	27-Aug-2019	1.0 - 1.5m	S-CAT-3	23	---	3.2	1.4	14	57	2700	11000	2100	< 50	---	YES
	27-Aug-2019	2.0 - 2.5m	S-CAT-3	18	---	15	23	36	160	3700	3500	1000	64	---	YES
RB-19-13	27-Aug-2019	1.0 - 1.5m	S-CAT-3	15	---	25	47	37	110	6100	1300	600	< 50	---	YES
	27-Aug-2019	2.5 - 3.0m	S-CAT-3	9	---	140 #3	520 #3	200 #3	900	19000	3300	2300	810	3100	NO
	27-Aug-2019	4.0 - 4.5m	S-CAT-4	12	---	8.3	0.38	0.15	1.4	410	1400	2400	740	---	YES
	27-Aug-2019	5.5 - 6.0m	S-CAT-4	6.8	---	4.9	4.4	1.4	5.6	740	1400	2600	840	3800	NO
RB-19-14	26-Aug-2019	0.5 - 1.0m	S-CAT-3	28	---	4.3	0.094 #1	16	11	6400	17000	9600	840	---	YES
	26-Aug-2019	2.5 - 3.0m	S-CAT-3	14	---	45	36	11	11	690	31	110	< 50	---	YES
	26-Aug-2019	3.4 - 3.8m	S-CAT-3	18	---	22	< 0.050	< 0.010	< 0.045	41	87	130	< 50	---	YES
	26-Aug-2019	5.5 - 6.0m	S-CAT-4	8.3	---	2.5	0.49	0.52	1.3	260	740	1300	450	1900	NO
RB-19-16	28-Aug-2019	1.0 - 1.5m	S-CAT-3	24	---	5.3	< 0.050	0.041 #1	0.92	120	120	1300	480	1700	NO
	28-Aug-2019	2.5 - 3.0m	S-CAT-3	18	---	9	3.9	3.6	7.7	490	37	84	< 50	---	YES
	28-Aug-2019	4.0 - 4.5m	S-CAT-3	9.5	---	4.9	0.25	0.97	0.21	120	14	< 50	< 50	---	YES
(Duplicate)	28-Aug-2019	4.0 - 4.5m	S-CAT-3	9.2	---	3.8	< 0.050	0.84	0.14	99	12	< 50	< 50	---	YES
	28-Aug-2019	5.0 - 5.5m	S-CAT-3	18	---	15	< 0.050	0.046	0.23	110	1800	3700	1300	4500	NO
	28-Aug-2019	7.0 - 7.5m	S-CAT-4	7.2	---	0.89	0.096	0.27	2.4	210	1400	3200	1200	4800	NO

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Table 11A

2019 Phase II ESA Fine-Grained Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	General: % Moisture (%)	General: Sieve - Pan (%)	PHCs: Benzene (mg/kg)	PHCs: Toluene (mg/kg)	PHCs: Ethylbenzene (mg/kg)	PHCs: Xylenes (Total) (mg/kg)	PHCs: PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHCs: PHC F2 (C_{10}-C_{16}) (mg/kg)	PHCs: PHC F3 (C_{16}-C_{34}) (mg/kg)	PHCs: PHC F4 (C_{34}-C_{50}) (mg/kg)	PHCs: PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	PHCs: Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Fine, Surface				---	---	110	330	430	230	---	---	---	---	---	---
CCME CSQG, Industrial, Fine, Subsurface				---	---	620	660	860	460	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	---	---	320	260	2500	6600	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	---	---	800	1000	5000	10000	---	---
S-CAT-1				---	---	0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	---
S-CAT-2				---	---	0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	---
S-CAT-3				---	---	0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	---
S-CAT-4				---	---	0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	---
Relative Percent Difference (RPD) Report															
CEM-19-03	30-Aug-2019	0.3 - 0.6m	S-CAT-2	34	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	< 10	130	< 50	---	YES
(Duplicate)	30-Aug-2019	0.3 - 0.6m	S-CAT-2	39	---	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	< 10	160	< 50	---	YES
RPD(%)				13.7%	---	---	---	---	---	---	---	20.7%	---	---	---
FTA-19-06	29-Aug-2019	5.5 - 6.0m	S-CAT-3	16	---	0.93	0.21	< 0.010	< 0.045	62	26	420	260	---	YES
(Duplicate)	29-Aug-2019	5.5 - 6.0m	S-CAT-3	14	---	1.2	0.24	0.015	< 0.045	66	24	370	210	---	YES
RPD(%)				13.3%	---	25.4%	13.3%	---	---	6.3%	8.0%	12.7%	21.3%	---	---
FTA-19-07	29-Aug-2019	0.5 - 1.0m	S-CAT-3	9.3	---	0.77	0.13 [#1]	0.76	7.4	630	420	710	98	---	YES
(Duplicate)	29-Aug-2019	0.5 - 1.0m	S-CAT-3	21	---	21	30	6.2	28	440	140	150	< 50	---	YES
RPD(%)				77.2%	---	185.9%	198.3%	156.3%	116.4%	35.5%	100.0%	130.2%	---	---	---
FTA-19-08	29-Aug-2019	1.0 - 1.5m	S-CAT-3	8.2	---	76 [#3]	220 [#3]	63 [#3]	290	8300	2300	2000	280	---	YES
(Duplicate)	29-Aug-2019	1.0 - 1.5m	S-CAT-3	9.2	---	44	220 [#3]	45	210	7900	2600	2100	300	---	YES
RPD(%)				11.5%	---	53.3%	0.0%	33.3%	32.0%	4.9%	12.2%	4.9%	6.9%	---	---
FTA-19-10	29-Aug-2019	4.0 - 4.2m	S-CAT-3	22	---	0.71	1.7	0.5	2.2	96	71	150	71	---	YES
(Duplicate)	29-Aug-2019	4.0 - 4.2m	S-CAT-3	21	---	0.027	< 0.050	0.026	0.11	< 10	< 10	56	< 50	---	YES
RPD(%)				4.7%	---	185.3%	---	180.2%	181.0%	---	---	91.3%	---	---	---
FTA-19-14	29-Aug-2019	0.5 - 1.0m	S-CAT-1	19	---	0.44	< 0.050	0.37	0.84	85	1100	520	< 50	---	YES
(Duplicate)	29-Aug-2019	0.5 - 1.0m	S-CAT-1	18	---	0.51	< 0.050	0.53	1.2	160	1700	720	< 50	---	YES
RPD(%)				5.4%	---	14.7%	---	35.6%	35.3%	61.2%	42.9%	32.3%	---	---	---
FTA-19-16	30-Aug-2019	1.0 - 1.5m	S-CAT-3	13	---	1.5	1.6	0.69	2.8	46	< 10	< 50	< 50	---	YES
(Duplicate)	30-Aug-2019	1.0 - 1.5m	S-CAT-3	14	---	1.8	1	0.92	3.3	42	< 10	50	< 50	---	YES
RPD(%)				7.4%	---	18.2%	46.2%	28.6%	16.4%	9.1%	---	---	---	---	---

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Table 11A

2019 Phase II ESA Fine-Grained Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096				General		Petroleum Hydrocarbons (PHCs)									
Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	% Moisture (%)	Sieve - Pan (%)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Fine, Surface				---	---	110	330	430	230	---	---	---	---	---	---
CCME CSQG, Industrial, Fine, Subsurface				---	---	620	660	860	460	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	---	---	320	260	2500	6600	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	---	---	800	1000	5000	10000	---	---
S-CAT-1				---	---	0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	---
S-CAT-2				---	---	0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	---
S-CAT-3				---	---	0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	---
S-CAT-4				---	---	0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	---
RB-19-02	28-Aug-2019	4.0 - 4.5m	S-CAT-3	8.3	---	14	38	8.9	32	1400	490 #4	310	< 50	---	YES
(Duplicate)	28-Aug-2019	4.0 - 4.5m	S-CAT-3	12	---	13	39	9.3	34	1500	190	180	< 50	---	YES
RPD(%)				**36.5%**	---	7.4%	2.6%	4.4%	6.1%	6.9%	88.2%	53.1%	---	---	---
RB-19-03	28-Aug-2019	8.5 - 9.0m	S-CAT-4	7.6	---	0.55	0.95	0.56	3.3	170	740	1500	510	2300	NO
(Duplicate)	28-Aug-2019	8.5 - 9.0m	S-CAT-4	6.9	---	3.3	2.3	0.48	3.5	330	700	1300	440	1800	NO
RPD(%)				**9.7%**	---	142.9%	83.1%	15.4%	5.9%	64.0%	5.6%	14.3%	14.7%	24.4%	---
RB-19-08	27-Aug-2019	4.0 - 4.5m	S-CAT-3	10	---	0.089	< 0.050	0.024	0.066	79	220	1400	650	2000	NO
(Duplicate)	27-Aug-2019	4.0 - 4.5m	S-CAT-3	10	---	0.031	< 0.050	< 0.010	< 0.045	54	350	1800	760	2100	NO
RPD(%)				**0.0%**	---	96.7%	---	---	---	37.6%	45.6%	25.0%	15.6%	4.9%	---
RB-19-16	28-Aug-2019	4.0 - 4.5m	S-CAT-3	9.5	---	4.9	0.25	0.97	0.21	120	14	< 50	< 50	---	YES
(Duplicate)	28-Aug-2019	4.0 - 4.5m	S-CAT-3	9.2	---	3.8	< 0.050	0.84	0.14	99	12	< 50	< 50	---	YES
RPD(%)				**3.2%**	---	25.3%	---	14.4%	40.0%	19.2%	15.4%	---	---	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines

(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 2
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathwa
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2007 a
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Subsurface Soils, excluding protection of potable groundwater, 20(

Table 11A

2019 Phase II ESA Fine-Grained Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	General		Petroleum Hydrocarbons (PHCs)									
				% Moisture (%)	Sieve - Pan (%)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Fine, Surface				---	---	110	330	430	230	---	---	---	---	---	---
CCME CSQG, Industrial, Fine, Subsurface				---	---	620	660	860	460	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	---	---	320	260	2500	6600	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	---	---	800	1000	5000	10000	---	---
S-CAT-1				---	---	0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	---
S-CAT-2				---	---	0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	---
S-CAT-3				---	---	0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	---
S-CAT-4				---	---	0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	---

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 2
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathway
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2007 a
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Subsurface Soils, excluding protection of potable groundwater, 200

6. Superscript #1 - Tentatively identified result and may be potentially biased high due to matrix interference.
7. Superscript #2 - Detection limits raised due to matrix interference.
8. Superscript #3 - Detection limits raised due to dilution to bring analyte within the calibrated range.
9. Superscript #4 - Matrix spike exceeds acceptance limits due to matrix interference.
10. Superscript #5 - Tentatively identified result and may be potentially biased high due to matrix interference. Detection limits raised due to dilution to bring analyte within the calibrated range
11. Superscript #6 - Detection limits raised based on sample weight used for analysis.
12. Superscript #7 - Detection limits raised due to sample matrix.
11. Background 95th Percentile Statistical Category:
    S-CAT-1: Mainland - Organic Surface Soil - 95th Percentile Background (<0.5 mbgs)
    S-CAT-2: Mainland - Mineral Surface Soil - 95th Percentile Background (<0.5 mbgs)
    S-CAT-3: Mainland - Mineral Subsurface Soil - 95th Percentile Background (>0.5 mbgs)
    S-CAT-4: Mainland - Bedrock Siltstone - 95th Percentile Background

Bold 12. Relative percent difference exceeds acceptable alert limit of 100%.

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Table 11B

2019 Phase II ESA Coarse-Grained Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	General: % Moisture (%)	General: Sieve #200 (>0.075mm) (%)	General: Sieve - Pan (%)	PHCs: Benzene (mg/kg)	PHCs: Toluene (mg/kg)	PHCs: Ethylbenzene (mg/kg)	PHCs: m&p-Xylene (mg/kg)	PHCs: o-Xylene (mg/kg)	PHCs: Xylenes (Total) (mg/kg)	PHCs: PHC F1 (C_6-C_{10}) (mg/kg)	PHCs: PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHCs: PHC F2 (C_{10}-C_{16}) (mg/kg)	PHCs: PHC F3 (C_{16}-C_{34}) (mg/kg)	PHCs: PHC F4 (C_{34}-C_{50}) (mg/kg)	PHCs: PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	PHCs: Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Coarse, Surface, GW Check and Indoor Air Paths Excluded				---	---	---	1	0.1	50	---	---	37	---	---	---	---	---	---	---
CCME CSQG, Industrial, Coarse, Subsurface, GW Check and Indoor Air Paths Excluded				---	---	---	1	0.1	50	---	---	37	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Coarse, Surface, Potable GW Excluded				---	---	---	---	---	---	---	---	---	---	320	260	1700	3300	---	---
CCME PHC in Soil, Industrial, Coarse, Subsoil, Potable GW Excluded				---	---	---	---	---	---	---	---	---	---	700	380	3500	10000	---	---
S-CAT-2				---	---	---	0.011	0.044	0.022	---	---	0.088	---	14.1	33.8	277	118	---	---
S-CAT-3				---	---	---	0.015	0.02	0.016	---	---	0.081	---	18.3	83.7	536.5	209.5	---	---
S-CAT-4				---	---	---	0.0775	0.4	0.96	---	---	6.08	---	96.8	825.5	1265	288	---	---
E-33X Well Site Area																			
E33-19-02	31-Aug-2019	0.5 - 1.0m	S-CAT-3	19	---	---	< 0.0050	< 0.050	< 0.010	< 0.040	< 0.020	< 0.045	< 10	< 10	19	72	< 50	---	YES
	31-Aug-2019	2.0 - 2.5m	S-CAT-3	6.3	---	---	< 0.0050	< 0.050	< 0.010	< 0.040	< 0.020	< 0.045	35	35	71	200	65	---	YES
	31-Aug-2019	3.5 - 4.0m	S-CAT-3	19	---	---	< 0.0050	< 0.050	0.023 #1	0.12	< 0.020	0.12	580	580	1200	2400	870	3100	NO
	31-Aug-2019	5.5 - 6.0m	S-CAT-3	13	---	---	0.042	< 0.050	0.062	7.2	0.062 #1	7.3	470	460	4000	7000	2400	10000	NO
	31-Aug-2019	7.0 - 7.5m	S-CAT-4	7.6	---	---	< 0.0050	< 0.050	< 0.010	0.22	0.023	0.24	92	92	660	1600	620	2300	NO
E33-19-03	01-Sep-2019	0.5 - 1.0m	S-CAT-2	14	---	---	< 0.0050	< 0.050	< 0.010	< 0.040	< 0.020	< 0.045	< 10	< 10	30	190	96	---	YES
	01-Sep-2019	1.6 - 2.0m	S-CAT-3	19	---	---	< 0.0050	< 0.050	< 0.010	< 0.040	< 0.020	< 0.045	110	110	210	580	220	---	YES
(Duplicate)	01-Sep-2019	1.6 - 2.0m	S-CAT-3	15	---	---	0.0081	< 0.050	< 0.010	< 0.040	< 0.020	< 0.045	71	71	190	540	230	---	YES
	01-Sep-2019	2.7 - 3.0m	S-CAT-3	13	---	---	0.015	< 0.050	0.027 #1	0.090 #1	< 0.020	0.090	550	550	2500	4900	1700	5100	NO
	01-Sep-2019	3.5 - 4.0m	S-CAT-4	9.3	---	---	0.0069	< 0.050	< 0.010	< 0.040	< 0.020	< 0.045	43	43	180	470	170	---	YES
	01-Sep-2019	5.5 - 6.0m	S-CAT-4	8.4	0.46	100	0.0090 #1	< 0.050	0.017	0.12 #1	0.031 #1	0.15	56	56	240	390	120	---	YES
E33-19-04	31-Aug-2019	1.0 - 1.5m	S-CAT-3	19	---	---	0.028	< 0.050	< 0.010	< 0.040	< 0.020	< 0.045	< 10	< 10	44	190	81	---	YES
	31-Aug-2019	2.0 - 2.5m	S-CAT-3	14	---	---	0.22	< 0.050	0.028	0.087	< 0.030 #2	0.087	480	480	2200	4400	1600	5500	NO
	31-Aug-2019	3.5 - 4.0m	S-CAT-4	9.8	0.62	99	0.026	0.081 #1	0.033	0.054	0.046 #1	0.10	140	140	480	1000	320	---	YES
E33-19-05	31-Aug-2019	1.0 - 1.5m	S-CAT-3	19	---	---	0.11	< 0.050	0.3	0.73	0.26 #1	0.99	180	180	7000	2700	450	---	YES
	31-Aug-2019	2.0 - 2.5m	S-CAT-3	12	---	---	0.039 #1	< 0.050	0.051 #1	0.13	< 0.020	0.13	1000	1000	4100	7600	2800	9900	NO
	31-Aug-2019	3.0 - 3.5m	S-CAT-4	12	---	---	0.011 #1	< 0.050	0.027	0.14	< 0.020	0.14	180	180	1200	2400	870	3500	NO
	31-Aug-2019	5.0 - 5.5m	S-CAT-4	8.3	---	---	0.026	< 0.050	0.016	0.17	0.031	0.20	120	120	570	1300	560	2000	NO
E33-19-06	01-Sep-2019	1.0 - 1.5m	S-CAT-3	18	---	---	< 0.0050	< 0.050	< 0.010	< 0.040	< 0.020	< 0.045	< 10	< 10	27	100	< 50	---	YES
	01-Sep-2019	2.0 - 2.5m	S-CAT-3	7.2	---	---	< 0.0050	< 0.050	< 0.010	< 0.040	< 0.020	< 0.045	39	39	99	260	89	---	YES
	01-Sep-2019	3.8 - 4.2m	S-CAT-3	19	---	---	0.73	< 0.050	0.018	0.50	< 0.020	0.50	460	460	2600	5000	1700	5400	NO
	01-Sep-2019	5.0 - 5.5m	S-CAT-4	6.0	---	---	0.17	< 0.050	0.13	1.6	0.17	1.7	100	98	490	1000	370	1100	NO

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Table 11B

2019 Phase II ESA Coarse-Grained Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	General: % Moisture (%)	General: Sieve #200 (>0.075mm) (%)	General: Sieve - Pan (%)	PHCs: Benzene (mg/kg)	PHCs: Toluene (mg/kg)	PHCs: Ethylbenzene (mg/kg)	PHCs: m&p-Xylene (mg/kg)	PHCs: o-Xylene (mg/kg)	PHCs: Xylenes (Total) (mg/kg)	PHCs: PHC F1 (C_6-C_{10}) (mg/kg)	PHCs: PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHCs: PHC F2 (C_{10}-C_{16}) (mg/kg)	PHCs: PHC F3 (C_{16}-C_{34}) (mg/kg)	PHCs: PHC F4 (C_{34}-C_{50}) (mg/kg)	PHCs: PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	PHCs: Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Coarse, Surface, GW Check and Indoor Air Paths Excluded				---	---	---	**1**	**0.1**	**50**	---	---	**37**	---	---	---	---	---	---	---
CCME CSQG, Industrial, Coarse, Subsurface, GW Check and Indoor Air Paths Excluded				---	---	---	**1**	**0.1**	**50**	---	---	**37**	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Coarse, Surface, Potable GW Excluded				---	---	---	---	---	---	---	---	---	---	**320**	**260**	**1700**	**3300**	---	---
CCME PHC in Soil, Industrial, Coarse, Subsoil, Potable GW Excluded				---	---	---	---	---	---	---	---	---	---	**700**	**380**	**3500**	**10000**	---	---
S-CAT-2				---	---	---	**0.011**	**0.044**	**0.022**	---	---	**0.088**	---	**14.1**	**33.8**	**277**	**118**	---	---
S-CAT-3				---	---	---	**0.015**	**0.02**	**0.016**	---	---	**0.081**	---	**18.3**	**83.7**	**536.5**	**209.5**	---	---
S-CAT-4				---	---	---	**0.0775**	**0.4**	**0.96**	---	---	**6.08**	---	**96.8**	**825.5**	**1265**	**288**	---	---
Relative Percent Difference (RPD) Report																			
E33-19-03	01-Sep-2019	1.6 - 2.0m	S-CAT-3	19	---	---	< 0.0050	< 0.050	< 0.010	< 0.040	< 0.020	< 0.045	110	**110**	**210**	**580**	**220**	---	YES
(Duplicate)	01-Sep-2019	1.6 - 2.0m	S-CAT-3	15	---	---	0.0081	< 0.050	< 0.010	< 0.040	< 0.020	< 0.045	71	**71**	**190**	**540**	**230**	---	YES
RPD(%)				**23.5%**	**---**	**---**	---	---	---	---	---	---	43.1%	43.1%	10.0%	7.1%	4.4%	**---**	**---**

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. **Bold** Denotes values exceeding applied background concentrations and CCME guidelines
   - (CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 2007 and updates)
   - (CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 2007 and updates)
   - (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2007 and updates)
   - (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Subsurface Soils, excluding protection of potable groundwater, 2007 and updates)
4. **Bold** Denotes values exceeding applied background concentrations only.
5. **Bold** Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
   - (CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 2007 and updates)
   - (CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 2007 and updates)
   - (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2007 and updates)
   - (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Subsurface Soils, excluding protection of potable groundwater, 2007 and updates)
6. Superscript $^{\#1}$ - Tentatively identified result and may be potentially biased high due to matrix interference.
7. Superscript $^{\#2}$ - Detection limits raised due to matrix interference.
8. Background 95th Percentile Statistical Category:
   - S-CAT-2: Mainland - Mineral Surface Soil - 95th Percentile Background (<0.5 mbgs)
   - S-CAT-3: Mainland - Mineral Subsurface Soil - 95th Percentile Background (<0.5mbgs)
   - S-CAT-4: Mainland - Bedrock Siltstone - 95th Percentile Background (>0.5mbgs)
9. **Bold** Relative percent difference exceeds acceptable alert limit of 100%.

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Table 12A

2019 Phase II ESA Fine-Grained Soil Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Boron (mg/kg)	Boron - Hot Water Soluble (mg/kg)	Boron - Saturated Paste (mg/L)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Soil				---	40	12	2000	8	---	---	---	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
S-CAT-1				---	2	9.05	471	0.83	---	2.64	---	1.01	51	0.15	10.7	22.7	12	0.13	17.2	33.8	1.62	---	1.26	---	4.2	45.7	90.2
S-CAT-2				---	1	12.6	397	0.84	---	1.13	---	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				---	1	25.2	398	1.06	---	1.86	---	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				---	1	23.8	454	0.93	---	3	---	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
Cemetery Sump Area																											
CEM-19-03	30-Aug-2019	0.3 - 0.6m	S-CAT-2	9900	< 0.50	7.7	350	0.64	5.1	0.25	< 0.10	0.47	18	< 0.080	8.5	15	9.4	< 0.050	1.4	24	0.58	< 0.20	0.11	< 1.0	0.73	33	80
	30-Aug-2019	2.0 - 2.5m	S-CAT-3	7800	0.59	9.1	320	0.48	5.2	0.21	< 0.10	0.43	18	< 0.080	9.4	19	8.9	< 0.050	2.0	29	0.60	< 0.20	0.15	< 1.0	0.84	28	80
	30-Aug-2019	4.0 - 4.5m	S-CAT-3	7600	< 0.50	9.6	280	0.41	4.6	0.21	0.12	0.42	23	< 0.080	8.7	18	8.7	< 0.050	1.7	30	< 0.50	< 0.20	0.14	< 1.0	0.79	28	80
CEM-19-04	31-Aug-2019	0.5 - 1.0m	S-CAT-3	9500	< 0.50	7.8	350	0.62	5.2	0.70	0.31	0.56	17	< 0.080	8.8	17	9.4	< 0.050	1.6	26	0.62	< 0.20	0.12	< 1.0	0.91	32	87
	31-Aug-2019	2.5 - 3.0m	S-CAT-3	6800	0.52	9.2	270	< 0.40	4.2	0.31	0.13	0.43	18	< 0.080	8.2	16	7.8	< 0.050	1.8	26	< 0.50	< 0.20	0.12	< 1.0	0.78	27	75
	31-Aug-2019	4.0 - 4.2m	S-CAT-3	6800	0.56	8.5	250	0.43	4.3	0.17	< 0.10	0.49	17	< 0.080	8.2	17	8.5	< 0.050	1.9	26	0.62	< 0.20	0.14	< 1.0	0.97	24	79
CEM-19-05	30-Aug-2019	0.2 - 0.5m	S-CAT-2	10000	< 0.50	6.9	360	0.60	4.4	0.23	< 0.10	0.49	17	< 0.080	7.2	11	8.8	< 0.050	1.1	19	< 0.50	< 0.20	< 0.10	< 1.0	0.88	34	78
	30-Aug-2019	2.0 - 2.5m	S-CAT-3	6600	0.50	8.2	270	< 0.40	4.2	0.18	< 0.10	0.43	16	< 0.080	7.9	16	7.8	< 0.050	1.8	25	< 0.50	< 0.20	0.13	< 1.0	0.84	25	73
	30-Aug-2019	3.5 - 4.0m	S-CAT-3	7500	0.57	8.9	260	0.45	4.4	0.20	< 0.10	0.49	21	< 0.080	8.9	19	8.7	< 0.050	2.0	30	0.62	< 0.20	0.15	< 1.0	0.87	26	84
	30-Aug-2019	5.0 - 5.5m	S-CAT-3	8700	0.61	9.6	330	0.53	5.3	0.27	< 0.10	0.54	19	< 0.080	10	22	10	0.055	2.1	31	0.68	< 0.20	0.17	< 1.0	0.89	29	95
B30-19-01	23-Aug-2019	0.6 - 1.0m	S-CAT-3	8800	0.61	13	240	0.44	4.6	0.56	0.17	0.41	22	< 0.080	10	22	10	< 0.050	2.6	32	0.57	< 0.20	0.21	< 1.0	0.90	31	91
	23-Aug-2019	1.5 - 2.0m	S-CAT-3	6700	0.52	8.2	260	< 0.40	4.2	0.40	0.18	0.31	16	< 0.080	8.0	20	8.5	< 0.050	2.0	25	0.51	< 0.20	0.15	< 1.0	0.86	26	73
	23-Aug-2019	4.0 - 4.5m	S-CAT-3	9400	0.63	12	270	0.48	7.3	1.6	0.49	0.44	21	< 0.080	11	23	11	< 0.050	1.9	33	< 0.50	< 0.20	0.22	< 1.0	0.95	31	99
	23-Aug-2019	5.0 - 5.5m	S-CAT-4	18000	0.65	20	170	0.67	7.7	2.0	0.84	0.060	36	< 0.080	20	28	13	< 0.050	0.54	54	< 0.50	< 0.20	0.11	< 1.0	0.35	46	120
B30-19-02	23-Aug-2019	0.0 - 0.5m	S-CAT-2	12000	0.57	9.8	410	0.69	4.2	0.70	0.18	0.73	22	< 0.080	8.7	17	11	< 0.050	4.5	26	1.4	< 0.20	0.39	< 1.0	2.2	41	80
	23-Aug-2019	1.5 - 2.0m	S-CAT-3	7500	0.64	9.8	290	0.46	4.7	0.69	0.19	0.55	17	< 0.080	9.5	21	9.6	< 0.050	3.2	29	0.72	< 0.20	0.20	< 1.0	1.0	27	88
B30-19-03	25-Aug-2019	3.5 - 4.0m	S-CAT-3	8700	< 0.50	11	240	0.44	4.7	0.64	0.22	0.42	19	< 0.080	9.7	20	9.8	< 0.050	1.7	30	< 0.50	< 0.20	0.18	< 1.0	0.86	30	89
B30-19-04	25-Aug-2019	2.0 - 2.5m	S-CAT-3	8700	0.64	10	310	0.47	5.2	0.69	0.17	0.55	20	< 0.080	11	24	11	< 0.050	2.3	32	0.71	< 0.20	0.21	< 1.0	1.0	30	97
	25-Aug-2019	3.5 - 4.0m	S-CAT-3	8500	< 0.50	9.2	260	0.42	5.0	1.3	0.33	0.44	20	< 0.080	9.8	21	9.7	< 0.050	1.8	30	0.51	< 0.20	0.18	< 1.0	0.88	28	89
	25-Aug-2019	5.5 - 6.0m	S-CAT-4	20000	< 0.50	17	140	0.64	6.6	1.6	0.88	0.073	40	< 0.080	16	22	11	< 0.050	0.62	51	< 0.50	< 0.20	< 0.10	< 1.0	0.38	62	110
B30-19-05	25-Aug-2019	3.5 - 4.0m	S-CAT-4	16000	< 0.50	19	180	0.55	5.8	1.1	0.41	0.14	33	< 0.080	15	20	11	< 0.050	0.87	46	< 0.50	< 0.20	0.12	< 1.0	0.48	52	110
	25-Aug-2019	5.5 - 6.0m	S-CAT-4	17000	< 0.50	18	190	0.61	7.2	2.0	0.95	0.096	38	< 0.080	17	24	11	< 0.050	1.1	51	< 0.50	< 0.20	0.14	< 1.0	0.43	48	120
B30-19-06	23-Aug-2019	1.0 - 1.5m	S-CAT-1	7800	0.55	8.2	260	0.45	6.5	1.6	0.40	0.45	17	< 0.080	8.4	18	9.2	< 0.050	2.1	25	0.64	< 0.20	0.18	< 1.0	1.2	28	79
	23-Aug-2019	2.5 - 3.0m	S-CAT-3	9600	0.65	11	290	0.50	8.8	2.2	0.89	0.48	22	< 0.080	11	23	11	< 0.050	0.93	33	0.51	< 0.20	0.21	< 1.0	0.97	31	99
	23-Aug-2019	3.5 - 4.0m	S-CAT-4	16000	< 0.50	12	250	0.59	6.9	1.8	0.86	0.072	33	< 0.080	17	22	12	< 0.050	0.49	49	< 0.50	< 0.20	< 0.10	< 1.0	0.37	43	120
	23-Aug-2019	4.6 - 5.0m	S-CAT-4	16000	< 0.50	15	180	0.62	8.4	2.1	1.0	0.13	37	< 0.080	17	24	10	< 0.050	1.3	51	< 0.50	< 0.20	0.16	< 1.0	0.47	46	120
Fire Training Area																											
FTA-19-01	29-Aug-2019	3.5 - 4.0m	S-CAT-3	7800	0.62	9.3	310	0.48	5	0.43	0.17	0.5	17	< 0.080	9.1	21	9.6	< 0.050	2.1	28	0.52	< 0.20	0.17	< 1.0	0.83	26	89
FTA-19-02	28-Aug-2019	3.5 - 4.0m	S-CAT-3	8300	0.62	11	330	0.49	5.5	0.43	0.17	0.52	19	< 0.080	10	23	10	< 0.050	2.2	32	0.65	< 0.20	0.19	< 1.0	1	29	99
Former Refinery (NWR) Area																											
NWR-19-02	26-Aug-2019	1.0 - 1.5m	S-CAT-3	8400	0.59	8.8	280	0.55	6.3	0.85	0.17	0.58	18	< 0.080	9.7	21	13	< 0.050	2	31	0.71	< 0.20	0.16	< 1.0	0.85	29	89
	26-Aug-2019	2.5 - 3.0m	S-CAT-3	6200	0.53	6.5	300	< 0.40	5.5	0.92	0.24	0.46	15	< 0.080	7.9	17	7.9	< 0.050	2	24	0.6	< 0.20	0.13	< 1.0	0.95	23	75
	26-Aug-2019	4.0 - 4.5m	S-CAT-3	7800	0.52	8.9	260	0.47	6.7	1.9	0.56	0.41	18	< 0.080	9.3	21	10	< 0.050	1.6	29	< 0.50	< 0.20	0.16	< 1.0	1.1	26	87
	26-Aug-2019	5.0 - 5.5m	S-CAT-3	7500	0.59	11	240	0.44	7.5	2.4	0.86	0.43	20	< 0.080	9.4	19	9.4	< 0.050	1.1	29	0.52	< 0.20	0.16	< 1.0	0.71	26	85
	26-Aug-2019	7.0 - 7.5m	S-CAT-4	15000	< 0.50	19	170	0.58	7.1	2.4	1.1	0.072	30	< 0.080	16	22	8.8	< 0.050	< 0.40	49	< 0.50	< 0.20	< 0.10	< 1.0	0.4	40	130

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Table 12A

2019 Phase II ESA Fine-Grained Soil Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Boron (mg/kg)	Boron - Hot Water Soluble (mg/kg)	Boron - Saturated Paste (mg/L)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Soil				---	40	12	2000	8	---	---	---	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
S-CAT-1				---	2	9.05	471	0.83	---	2.64	---	1.01	51	0.15	10.7	22.7	12	0.13	17.2	33.8	1.62	---	1.26	---	4.2	45.7	90.2
S-CAT-2				---	1	12.6	397	0.84	---	1.13	---	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				---	1	25.2	398	1.06	---	1.86	---	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				---	1	23.8	454	0.93	---	3	---	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
NWR-19-03	25-Aug-2019	0.5 - 1.0m	S-CAT-3	15000	< 0.50	11	260	0.72	10	**2.8**	0.55	< 0.050	30	< 0.080	16	37	11	< 0.050	< 0.40	48	< 0.50	< 0.20	< 0.10	< 1.0	0.37	37	120
	25-Aug-2019	2.5 - 3.0m	S-CAT-3	6700	0.51	7.5	260	< 0.40	4.3	0.63	0.18	0.43	16	< 0.080	8.3	17	8.1	< 0.050	1.8	26	< 0.50	< 0.20	0.14	< 1.0	0.96	24	78
	25-Aug-2019	3.5 - 4.0m	S-CAT-3	7000	< 0.50	8.8	260	< 0.40	3.5	0.43	0.18	0.38	18	< 0.080	8.3	17	7.6	< 0.050	1.6	26	< 0.50	< 0.20	0.13	< 1.0	0.85	24	75
Former Refinery (RB) Area																											
RB-19-01	27-Aug-2019	3.0 - 3.5m	S-CAT-3	17000	< 0.50	12	**400**	0.91	14	1.5	0.56	0.11	35	< 0.080	18	**42**	14	< 0.050	< 0.40	55	< 0.50	< 0.20	0.12	< 1.0	0.59	45	140
	27-Aug-2019	6.3 - 6.6m	S-CAT-4	11000	< 0.50	13	140	0.48	6.3	1.6	1	0.066	28	< 0.080	12	14	9.2	< 0.050	< 0.40	36	< 0.50	< 0.20	< 0.10	< 1.0	0.4	37	85
RB-19-05	27-Aug-2019	1.0 - 1.5m	S-CAT-3	6600	0.57	9	320	0.42	4.2	0.13	< 0.10	0.51	16	< 0.080	8.7	18	8.7	< 0.050	2	27	0.6	< 0.20	0.14	< 1.0	0.82	25	85
RB-19-08	27-Aug-2019	4.0 - 4.5m	S-CAT-3	13000	< 0.50	20	53	0.43	3.4	0.18	< 0.10	0.062	28	< 0.080	13	14	7.6	< 0.050	< 0.40	41	< 0.50	< 0.20	< 0.10	< 1.0	0.33	39	91
	27-Aug-2019	5.5 - 6.0m	S-CAT-4	16000	< 0.50	**28**	120	0.66	5.7	0.32	0.12	0.069	34	< 0.080	17	23	9.5	< 0.050	< 0.40	52	< 0.50	< 0.20	< 0.10	< 1.0	0.41	45	130
	27-Aug-2019	8.5 - 9.0m	S-CAT-4	17000	< 0.50	23	180	0.69	5.4	0.59	0.28	0.052	33	< 0.080	17	26	9.2	< 0.050	< 0.40	54	< 0.50	< 0.20	< 0.10	< 1.0	0.41	42	140
RB-19-09	27-Aug-2019	3.5 - 4.0m	S-CAT-3	11000	< 0.50	17	57	< 0.40	3.5	0.18	< 0.10	0.052	30	< 0.080	9.1	12	7	0.06	< 0.40	32	< 0.50	< 0.20	< 0.10	< 1.0	0.43	**50**	69
RB-19-10	27-Aug-2019	2.5 - 3.0m	S-CAT-3	8300	0.51	9.9	260	0.47	4.8	0.22	< 0.10	0.4	20	< 0.080	9.3	20	9.1	< 0.050	1.5	30	< 0.50	< 0.20	0.14	< 1.0	0.61	31	82
RB-19-11	27-Aug-2019	1.5 - 2.0m	S-CAT-3	6800	0.63	7.8	250	0.41	4.2	0.27	0.13	0.56	19	< 0.080	8.2	18	10	< 0.050	2	26	0.52	< 0.20	0.13	< 1.0	0.71	25	81
RB-19-12	27-Aug-2019	0.5 - 1.0m	S-CAT-5	12000	**1.7**	17	**430**	0.8	12	0.97	0.28	0.7	29	< 0.080	12	21	**68**	< 0.050	**28**	**68**	**1.4**	< 0.20	**0.83**	< 1.0	**3.1**	**93**	**150**
	27-Aug-2019	1.0 - 1.5m	S-CAT-3	8900	< 0.50	9.7	270	0.5	9.1	1.8	0.87	0.42	28	< 0.080	8.6	20	**67**	< 0.050	3.8	31	< 0.50	< 0.20	0.14	< 1.0	0.89	30	100
RB-19-13	27-Aug-2019	1.0 - 1.5m	S-CAT-3	5900	0.54	7.6	310	< 0.40	4.3	0.26	< 0.10	0.47	14	< 0.080	7.4	16	18	< 0.050	1.7	23	< 0.50	< 0.20	0.13	< 1.0	0.86	23	73
	27-Aug-2019	4.0 - 4.5m	S-CAT-4	22000	< 1.3	18	340	**1**	14	2.6	0.78	< 0.13	41	< 0.080	21	49	**15**	< 0.13	< 1.0	63	< 1.3	< 0.50	< 0.25	< 2.5	< 0.50	50	**160**
RB-19-14	26-Aug-2019	2.5 - 3.0m	S-CAT-3	7600	< 0.50	10	280	< 0.40	4.9	0.98	0.39	0.39	19	< 0.080	9.1	18	9.8	< 0.050	1.4	28	< 0.50	< 0.20	0.14	< 1.0	0.65	27	83
RB-19-16	28-Aug-2019	1.0 - 1.5m	S-CAT-3	9700	0.61	8.2	300	0.64	6.1	0.34	0.12	0.38	21	< 0.080	9.6	20	11	< 0.050	2	30	0.67	< 0.20	0.15	< 1.0	0.88	32	92

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 2007 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 2007 and updates)

6. Background 95th Percentile Statistical Category:
S-CAT-2: Mainland - Mineral Surface Soil - 95th Percentile Background (<0.5 mbgs)
S-CAT-3: Mainland - Mineral Subsurface Soil - 95th Percentile Background (>0.5 mbgs)

Bold 8. Relative percent difference exceeds acceptable alert limit of 100%.

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Table 12B

2019 Phase II ESA Coarse-Grained Soil Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417011-00096

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Total Metals																								
				Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Boron (mg/kg)	Boron - Hot Water Soluble (mg/kg)	Boron - Saturated Paste (mg/L)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Soil				---	40	12	2000	8	---	---	---	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
S-CAT-3				---	1	25.2	398	1.06	---	1.86	---	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				---	1	23.8	454	0.93	---	3	---	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
E-33X Well Site Area																												
E33-19-02	31-Aug-2019	3.5 - 4.0m	S-CAT-3	7300	0.68	8.8	230	0.49	5.1	---	0.17	0.54	18	< 0.080	9.4	18	9.3	< 0.050	3.8	32	0.70	< 0.20	0.20	< 1.0	1.2	29	87
	31-Aug-2019	5.5 - 6.0m	S-CAT-3	7200	0.68	12	170	0.53	4.7	---	0.17	0.57	22	< 0.080	9.6	17	9.9	< 0.050	4.3	36	0.89	< 0.20	0.24	< 1.0	1.2	34	82
E33-19-03	01-Sep-2019	2.7 - 3.0m	S-CAT-3	7000	0.54	11	160	0.46	3.8	0.26	0.10	0.43	31	< 0.080	8.4	14	7.8	< 0.050	3.7	37	0.72	< 0.20	0.21	< 1.0	0.94	34	71
	01-Sep-2019	3.5 - 4.0m	S-CAT-4	20000	< 0.50	**34**	150	0.85	7.7	0.80	0.24	0.057	38	< 0.080	19	39	9.9	< 0.050	0.50	59	< 0.50	< 0.20	0.11	< 1.0	0.50	52	140
	01-Sep-2019	5.5 - 6.0m	S-CAT-4	15000	< 0.50	13	280	0.81	13	**3.6**	1.4	< 0.050	33	< 0.080	17	39	9.8	< 0.050	< 0.40	54	< 0.50	< 0.20	0.11	< 1.0	0.43	41	**150**
E33-19-04	31-Aug-2019	2.0 - 2.5m	S-CAT-3	10000	< 0.50	14	170	0.53	5.2	---	0.16	0.29	25	< 0.080	11	18	8.0	< 0.050	2.3	39	< 0.50	< 0.20	0.15	< 1.0	0.73	37	91
	31-Aug-2019	3.5 - 4.0m	S-CAT-4	15000	< 0.50	22	180	0.65	6.5	---	0.49	0.054	33	< 0.080	17	23	8.7	< 0.050	< 0.40	53	< 0.50	< 0.20	< 0.10	< 1.0	0.39	43	130
E33-19-05	31-Aug-2019	2.0 - 2.5m	S-CAT-3	6700	0.75	12	260	0.56	4.3	---	0.16	0.64	23	< 0.080	9.5	18	14	< 0.050	5.4	39	0.93	< 0.20	0.25	< 1.0	1.2	35	90
	31-Aug-2019	3.0 - 3.5m	S-CAT-4	11000	< 0.50	11	110	0.50	4.9	---	0.22	**0.25**	27	< 0.080	9.8	19	8.9	0.052	**1.6**	34	< 0.50	< 0.20	0.11	< 1.0	0.63	45	88
E33-19-06	01-Sep-2019	3.8 - 4.2m	S-CAT-3	7700	0.56	8.8	260	0.54	5.3	1.2	0.31	0.50	17	< 0.080	13	20	12	< 0.050	3.8	38	0.62	< 0.20	0.26	< 1.0	0.95	28	85
	01-Sep-2019	5.0 - 5.5m	S-CAT-4	13000	< 0.50	**35**	120	0.53	5.3	0.70	0.27	0.056	27	< 0.080	13	18	8.7	0.062	0.46	41	< 0.50	< 0.20	< 0.10	< 1.0	0.47	39	99

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 2007 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 2007 and updates)

6. Background 95th Percentile Statistical Category:
S-CAT-3: Mainland - Mineral Subsurface Soil - 95th Percentile Background (<0.5 mbgs)
S-CAT-4: Mainland - Bedrock Siltstone - 95th Percentile Background (>0.5 mbgs)

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Table 13
Soil Analytical Results: Indicator Analysis Parameters

PROJECT No.: 417011-00096

Sampling Location	Sample Name	Date (dd-mmm-yyyy)	Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Soluble Calcium (mg/L)	Soluble Chloride (mg/L)	Soluble Potassium (mg/L)	Soluble Magnesium (mg/L)	Soluble Sodium (mg/L)	Soluble Sulphate (mg/L)	Calcium (mg/kg)	Chloride (mg/kg)	Chloride (Calculated) (mg/kg)	Potassium (mg/kg)	Magnesium (mg/kg)	Sodium (mg/kg)	Sulphate (mg/kg)	% Saturation (%)
CCME Industrial Fine Surface			**4**	**12**	**(6 - 8)**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
W22	W22-19-01	24-Aug-2019	2.7	0.55	7.71	480	76	12	50	48	800	190	31	30	4.7	20	19	320	40
	W22-19-02	24-Aug-2019	1.9	0.50	7.66	240	44	9.0	22	30	430	95	17	17	3.5	8.8	12	170	39
	W22-19-03	24-Aug-2019	2.2	0.54	7.71	410	51	10	39	42	800	170	21	21	4.3	16	18	340	42
	W22-19-04	24-Aug-2019	2.0	0.52	7.72	350	60	10	33	38	680	140	25	25	4.2	14	16	280	42
	W22-19-05	24-Aug-2019	3.1	0.60	7.73	570	140	13	55	56	940	240	60	60	5.4	23	24	400	43
W23	W23-19-01	24-Aug-2019	1.0	0.32	7.75	170	19	7.5	16	16	290	71	7.8	8.0	3.1	6.9	6.8	120	42
	W23-19-02	24-Aug-2019	0.79	0.34	7.66	120	30	7.0	12	15	200	54	13	13	3.1	5.2	6.4	89	44
	W23-19-03	24-Aug-2019	0.84	0.37	7.69	130	27	7.1	13	17	250	53	11	11	2.8	5.3	6.7	98	40
	W23-19-04	24-Aug-2019	0.71	0.44	7.71	110	20	6.6	11	18	200	44	8.3	8.2	2.7	4.3	7.3	83	41
	W23-19-05	24-Aug-2019	1.7	0.33	7.71	320	43	9.4	31	23	570	130	17	17	3.7	12	9.1	220	40
W23A	W23A-19-01	24-Aug-2019	3.4	0.53	7.53	670	120	16	74	54	1200	290	54	52	6.9	32	23	500	43
	W23A-19-02	24-Aug-2019	3.9	0.57	7.48	760	160	17	88	62	1300	320	68	67	7.3	37	26	530	42

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold	3. Highlighting indicates parameters above applied guideline/criteria.
< X	4. Highlighting indicates non-detect parameters above applied guideline/criteria.
X	5. Highlighting indicates parameters at applied guideline/criteria.

6. Chloride (Calculated)

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Table 14
Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096

Sampling Location	Sample Name	Date (dd-mmm-yyyy)	Petroleum Hydrocarbons (PHCs)									
			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Fine, Surface, GW Check and Indoor Air Paths Excluded			**11**	**330**	**430**	**230**	**---**	**---**	**---**	**---**	**---**	**---**
CCME PHC in Soil, Industrial, Fine, Surface, Potable GW Excluded [#2]			**---**	**---**	**---**	**---**	**320**	**260**	**2500**	**6600**	**---**	**---**
W7	W7-19-01	24-Aug-2019	0.0086	< 0.050	< 0.010	< 0.045	< 10	80	1600	730	2300	NO
	W7-19-02	24-Aug-2019	0.0079	< 0.050	< 0.010	< 0.045	< 10	84	1600	750	2100	NO
	W7-19-03	24-Aug-2019	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	81	1500	700	1900	NO
	W7-19-04	24-Aug-2019	0.0070	< 0.050	< 0.010	< 0.045	< 10	79	1500	670	2100	NO
W8	W8-19-01	24-Aug-2019	0.029	< 0.050	0.035	0.18	< 10	64	1500	770	3300	NO
	W8-19-02	24-Aug-2019	0.027	< 0.050	0.035	0.15	< 10	69	1600	780	2500	NO
	W8-19-03	24-Aug-2019	0.026	< 0.050	0.032	0.18	< 10	60	1500	720	2500	NO
	W8-19-04	24-Aug-2019	0.034	< 0.050	0.039	0.19	< 10	70	1700	820	2500	NO
	W8-19-05	24-Aug-2019	0.026	< 0.050	0.034	0.18	< 10	61	1400	720	2200	NO
W10	W10-19-01	24-Aug-2019	0.0076	< 0.050	< 0.010	< 0.045	< 10	56	1600	860	2500	NO
	W10-19-02	24-Aug-2019	0.0075	< 0.050	< 0.010	< 0.045	< 10	56	1700	860	3000	NO
	W10-19-03	24-Aug-2019	0.0082	< 0.050	< 0.010	< 0.045	< 10	53	1600	850	3100	NO
	W10-19-04	24-Aug-2019	0.0085	< 0.050	< 0.010	< 0.045	< 10	55	1600	880	3600	NO
	W10-19-05	24-Aug-2019	0.0074	< 0.050	< 0.010	< 0.045	< 10	55	1500	800	2800	NO
W12	W12-19-01	24-Aug-2019	0.043	0.15	0.089	0.45	36	110	1400	630	2200	NO
	W12-19-02	24-Aug-2019	0.037	0.12	0.094	0.39	33	96	1300	600	2400	NO
W13	W13-19-01	24-Aug-2019	0.0094	< 0.050	< 0.010	< 0.045	< 10	30	750	400	1500	NO
	W13-19-02	24-Aug-2019	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	32	730	380	5700	NO
	W13-19-03	24-Aug-2019	0.0087	< 0.050	< 0.010	< 0.045	< 10	31	920	610	1800	NO
	W13-19-04	24-Aug-2019	0.0099	< 0.050	< 0.010	< 0.045	< 10	27	700	360	880	NO
W16	W16-19-01	24-Aug-2019	0.026	< 0.050	0.038	0.18	12	61	1300	700	1900	NO
	W16-19-02	24-Aug-2019	0.034	< 0.050	0.031	0.15	11	70	1500	780	1900	NO
W17	W17-19-01	24-Aug-2019	0.011	< 0.050	< 0.010	0.081	< 10	81	1600	720	2400	NO
	W17-19-02	24-Aug-2019	0.010	< 0.050	< 0.010	0.096	< 10	76	1400	680	2200	NO
W18	W18-19-01	24-Aug-2019	0.038	0.097	0.038	0.18	< 10	57	1200	560	1600	NO
	W18-19-02	24-Aug-2019	0.029	< 0.050	0.036	0.19	< 10	74	1500	730	2300	NO
W19	W19-19-01	24-Aug-2019	0.0069	< 0.050	< 0.010	< 0.045	< 10	54	1400	850	2500	NO
	W19-19-02	24-Aug-2019	0.0070	< 0.050	< 0.010	< 0.045	< 10	57	1500	900	2900	NO
	W19-19-03	24-Aug-2019	0.0073	< 0.050	< 0.010	< 0.045	< 10	53	1500	840	2600	NO
	W19-19-04	24-Aug-2019	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	52	1500	920	3600	NO
W22	W22-19-01	24-Aug-2019	0.032	< 0.050	0.039	0.19	< 10	65	2000	1100	4600	NO
	W22-19-02	24-Aug-2019	0.043	< 0.050	0.041	0.19	< 10	62	1800	1000	3800	NO
	W22-19-03	24-Aug-2019	0.049	< 0.050	0.041	0.20	< 10	66	1900	1100	3700	NO
	W22-19-04	24-Aug-2019	0.056	< 0.050	0.044	0.20	< 10	66	1900	1100	4200	NO
	W22-19-05	24-Aug-2019	0.034	< 0.050	0.038	0.18	< 10	62	1900	1100	4000	NO
W23	W23-19-01	24-Aug-2019	0.0065	< 0.050	< 0.010	< 0.045	< 10	53	1800	1100	3500	NO
	W23-19-02	24-Aug-2019	0.0064	< 0.050	< 0.010	< 0.045	< 10	55	1800	1000	3500	NO
	W23-19-03	24-Aug-2019	0.0064	< 0.050	< 0.010	< 0.045	< 10	58	1900	1100	3700	NO
	W23-19-04	24-Aug-2019	0.0074	< 0.050	< 0.010	< 0.045	< 10	59	1900	1100	3700	NO
	W23-19-05	24-Aug-2019	0.0081	< 0.050	< 0.010	< 0.045	< 10	59	1900	1100	3600	NO
W23A	W23A-19-01	24-Aug-2019	0.0085	< 0.050	< 0.010	< 0.045	< 10	36	1600	870	3800	NO
	W23A-19-02	24-Aug-2019	0.012	< 0.050	< 0.010	< 0.045	< 10	35	1500	870	3500	NO
W24A	W24A-19-01	24-Aug-2019	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	170	**2800** [#2]	1100	4100	NO
	W24A-19-02	24-Aug-2019	0.0087	< 0.050	0.017	0.052	< 10	140	2400	980	3600	NO
	W24A-19-03	24-Aug-2019	< 0.0050	< 0.050	< 0.010	< 0.045	< 10	150	**2600** [#2]	1100	3800	NO
W24B	W24B-19-01	24-Aug-2019	0.0091	< 0.050	0.015	< 0.045	< 10	140	**2500** [#2]	1100	3900	NO
	W24B-19-02	24-Aug-2019	0.0073	< 0.050	< 0.010	< 0.045	< 10	130	2400	1000	4000	NO
	W24B-19-03	24-Aug-2019	0.0064	< 0.050	< 0.010	< 0.045	< 10	140	**2500** [#2]	1000	3900	NO
W25A	W25A-19-01	24-Aug-2019	0.011	< 0.050	< 0.010	0.052	< 10	36	1100	630	2100	NO
	W25A-19-02	24-Aug-2019	0.0083	< 0.050	< 0.010	< 0.045	< 10	31	1100	620	2400	NO

Table 14
Soil Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417011-00096

Sampling Location	Sample Name	Date (dd-mmm-yyyy)	Petroleum Hydrocarbons (PHCs)									
			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Reached Baseline at C_{50} (none)
CCME CSQG, Industrial, Fine, Surface, GW Check and Indoor Air Paths Excluded [1]			**11**	**330**	**430**	**230**	**---**	**---**	**---**	**---**	**---**	**---**
CCME PHC in Soil, Industrial, Fine, Surface, Potable GW Excluded [#2]			**---**	**---**	**---**	**---**	**320**	**260**	**2500**	**6600**	**---**	**---**
W25B	W25B-19-01	24-Aug-2019	0.010	< 0.050	< 0.010	0.081	< 10	29	970	480	2000	NO
	W25B-19-02	24-Aug-2019	0.0076	< 0.050	< 0.010	< 0.045	< 10	35	950	510	2000	NO

NOTES:

Bold	1. --- in guideline row(s) denotes no criteria for that parameter.
	2. --- in detail data row(s) denotes parameter not analyzed.
	3. Highlighting indicates parameters above applied guideline/criteria.
X	6. Highlighting indicates parameters at applied guideline/criteria.

7. Superscript [#1] denotes values exceeding

(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1991 and updates)

8. Superscript [#2] denotes values exceeding

(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 1991 and updates)

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Table 15
Soil Analytical Results: Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417011-00096

Sampling Location	Sample Name	Date (dd-mmm-yyyy)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Acridine (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (CCME) (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (ESRD) (mg/kg)	Benzo(b,j)Fluoranthene (mg/kg)	Benzo(c)Phenanthrene (mg/kg)	Benzo(e)Pyrene (mg/kg)	Benzo(g,h,i)Perylene (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Indexed Value of Additive Cancer Risk (IACR) (none)	Indexed Value of Additive Cancer Risk (IACR) - Coarse Grained Soils (none)	Calculate ESRD IACR (Fine Grained Soils) (none)	Calculate ESRD IACR (Coarse Grained Soils) (none)	Calculate CCME IACR (none)	2-Methylnaphthalene (mg/kg)	Naphthalene (mg/kg)	Perylene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)	Quinoline (mg/kg)
CCME Industrial Fine Surface			**0.28**	**320**	**---**	**32**	**10**	**72**	**0.6**	**0.6**	**---**	**---**	**---**	**---**	**---**	**10**	**---**	**10**	**180**	**0.25**	**10**	**---**	**---**	**---**	**---**	**1**	**---**	**0.013**	**---**	**0.046**	**100**	**---**
W25A	W25A-19-01	24-Aug-2019	< 0.0050	< 0.0050	< 0.010	< 0.0040	< 0.0050	0.0052 [#1]	0.015	0.015	0.015	0.010	< 0.0050	0.043	0.018	< 0.0050	0.0071	0.0077	< 0.0050	< 0.0050	0.0066	< 0.10	< 0.10	0.043	0.022	0.14	0.049	**0.016**	0.025	0.024	0.0097	< 0.010
	W25A-19-02	24-Aug-2019	< 0.0050	< 0.0050	0.012	< 0.0040	< 0.0050	0.0052 [#1]	0.010	0.0098	0.0098	0.011	< 0.0050	0.050	0.018	< 0.0050	0.0090	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.10	< 0.10	0.039	0.020	0.12	0.054	**0.019**	0.025	0.026	0.011	< 0.010
W25B	W25B-19-01	24-Aug-2019	< 0.0050	< 0.0050	< 0.010	< 0.0040	< 0.0050	< 0.0050	< 0.0071	0.0074	0.0074	0.011	< 0.0050	0.038	0.018	< 0.0050	0.0069	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0052	< 0.10	< 0.10	0.037	0.020	0.12	0.046	**0.013**	0.028	0.024	0.011	< 0.010
	W25B-19-02	24-Aug-2019	< 0.0050	< 0.0050	< 0.010	< 0.0040	< 0.0050	0.0054	0.010	0.010	0.010	0.012	< 0.0050	0.040	0.018	< 0.0050	0.0089	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.10	< 0.10	0.040	0.021	0.13	0.050	**0.014**	0.036	0.026	0.011	< 0.010

NOTES:

	1. --- in guideline row(s) denotes no criteria for that parameter.
	2. --- in detail data row(s) denotes parameter not analyzed.
Bold	3. Highlighting indicates parameters above applied guideline/criteria.
X	4. Highlighting indicates parameters at applied guideline/criteria.

5. Benzo(a)Pyrene Total Potency Equivalent (CCME)
   (Benzo(a)Pyrene*1) + (Benzo(a)Anthracene*0.1) + (Benzo(b,j,K)Fluoranthene*0.1) + (Benzo(g,h,i)Perylene*0.01) + (Chrysene*0.01) + (Dibenzo(a,h)Anthracene*1) + (Indeno(1,2,3-c,d)Pyrene*0.1)
   Non-Detect Isomer values calculated as 0.5 x detection limit.
   Final result value rounded to 2 significant digits
6. Benzo(a)Pyrene Total Potency Equivalent (ESRD)
   (Benzo(a)Pyrene*1) + (Benzo(a)Anthracene*0.1) + (Benzo(b,j,K)Fluoranthene*0.1) + (Benzo(g,h,i)Perylene*0.01) + (Chrysene*0.01) + (Dibenzo(a,h)Anthracene*1) + (Indeno(1,2,3-c,d)Pyrene*0.1)
   Non-Detect Isomer values calculated as 0.5 x detection limit.
   Final result value rounded to 2 significant digits
7. Calculate ESRD IACR (Fine Grained Soils)
   (Benzo(a)Pyrene/1.7) + (Benzo(a)Anthracene/1.6) + (Benzo(b,j)Fluoranthene/0.74) + (Benzo(k)Fluoranthene/0.16) + (Benzo(g,h,i)Perylene/32) + (Chrysene/10) + (Dibenzo(a,h)Anthracene/1.1) + (Indeno(1,2,3-c,d)Pyrene/13)
   Non-Detect Isomer values calculated as 0.5 x detection limit.
   Final result value rounded to 2 significant digits.
8. Calculate ESRD IACR (Coarse Grained Soils)
   (Benzo(a)Pyrene/3.4) + (Benzo(a)Anthracene/3.1) + (Benzo(b,j)Fluoranthene/1.4) + (Benzo(k)Fluoranthene/0.31) + (Benzo(g,h,i)Perylene/63) + (Chrysene/19) + (Dibenzo(a,h)Anthracene/2.1) + (Indeno(1,2,3-c,d)Pyrene/24)
   Non-Detect Isomer values calculated as 0.5 x detection limit.
   Final result value rounded to 2 significant digits.
9. Calculate CCME IACR
   (Benzo(a)Pyrene/0.37) + (Benzo(a)Anthracene/0.33) + (Benzo(b,j)Fluoranthene/0.16) + (Benzo(k)Fluoranthene/0.16) + (Benzo(g,h,i)Perylene/6.8) + (Chrysene/2.1) + (Dibenzo(a,h)Anthracene/0.23) + (Indeno(1,2,3-c,d)Pyrene/2.7)
   Non-Detect Isomer values calculated as 0.5 x detection limit.
   Final result value rounded to 2 significant digits
10. Superscript [#1] - Tentatively identified result and may be potentially biased high due to matrix interference.

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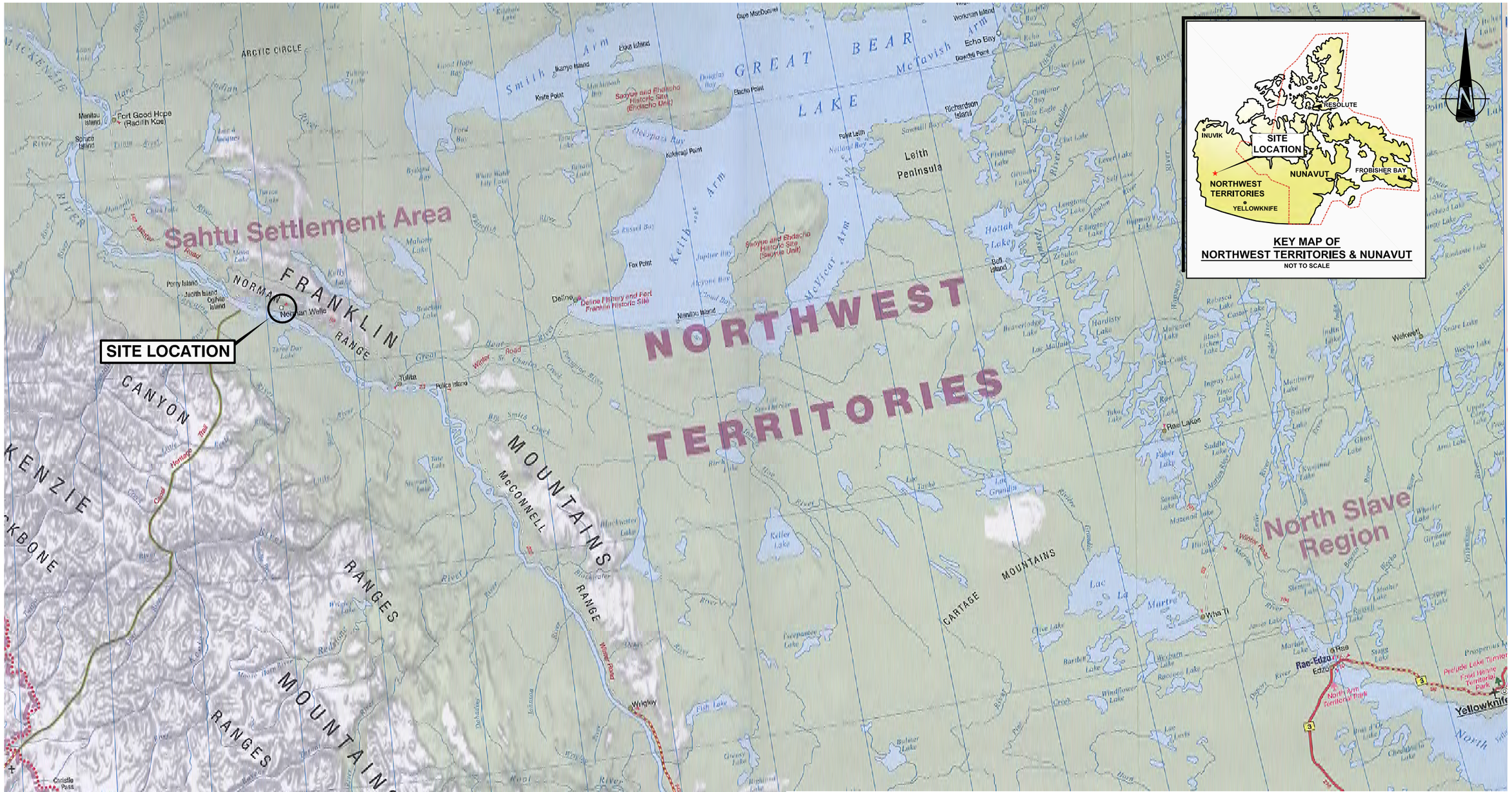
Figures



SCANNING SOURCE: MAPART PUBLISHING, 2002 EDITION

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

SITE LOCATION MAP

Date:	Drawn by:	Edited by:	App'd by:
25-MAR-20	OTHERS	B.M.F.	

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Project No. 417011-00096

FIG No 1 | REV A

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FILE LOCATION: U:\CAL\GBS\417011-00096\20100 - 2020 IES REGULATORY AND PROGRAM SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00096-20100-00-EN-DWG-ROADMAP.DWG

PLOT DATE & TIME: 26/3/2020 9:20:53 AM
SAVE DATE & TIME: 26/3/2020 7:49:21 AM
USER NAME: hlei@ea
ISSUING OFFICE: CALGARY

MAINLAND SUMPS

MAINLAND CENTRAL

MAINLAND WEST

MAINLAND EAST

SEEPAGE LAKE

NORMAN WELLS AIRSTRIP

PATTERN #2 CAMP

MACKENZIE RIVER

LEASE No. 96 E/7-29

LEASE No. 76 E/7-16

LEASE No. 96 E/7-26-4

ISLAND 3 (DEHCHO)

PRODUCING WELLS	INJECTION WELLS
I-22X K-24X	J-19X L-19X
I-24X M-18X	J-21X L-21X
K-17X M-20X	J-23X L-23X
K-20X M-22X	
K-22X M-24X	

ISLAND 4 (EKWE)

PRODUCING WELLS	INJECTION WELLS
I-20X K-25X	H-29-1X L-25X
I-26X K-30X	J-25X L-27X
I-30X M-26X	J-27X L-29X
K-26X M-28X	J-29-1X L-31X
M-30X	

ISLAND 1 (RAYUKA)

PRODUCING WELLS	INJECTION WELLS
G-34X G-40X	F-37X H-35X
G-36X I-36X	F-39X H-37X
G-38X I-38X	H-33X H-39X

ISLAND 2 (RAMPART)

PRODUCING WELLS	INJECTION WELLS
E-42X G-46X	F-41X H-43X
E-44X G-48X	F-43X H-45X
E-46X I-44X	F-45X H-47X
E-48X I-46X	F-47X H-49X
G-44X I-48X	H-41X
F-52X (PROPOSED)	H-52X (PROPOSED)

PLAN 69807 C.L.S.R. (L.T.O. No. 1732)
LOT 1007 LEASE No. 96 E/7-15-2
ISLAND 5 (ITEH K'EE)

PRODUCING WELLS	INJECTION WELLS
M-31X K-36X	J-31X L-33X
M-32X K-37X	J-32X L-34X
M-34X I-32X	J-35X L-35X
M-35X I-34X	J-36X L-36X
K-33X	L-37X
K-34X	

PLAN 69807 C.L.S.R. (L.T.O. No. 1732)
LOT 1008 LEASE No. 96 E/7-14-2
ISLAND 6 (LITTLE BEAR)

PRODUCING WELLS	INJECTION WELLS
I-40X K-40X	J-37X J-43X
I-42X K-42X	J-39X L-39X
K-38X M-40X	J-41X L-41X

GOOSE ISLAND

LEASE No. L-2825T

LOT 8 REMAINDER GROUP 1158
PLAN 52019 C.L.S.R.

BEAR ISLAND

LEASE No. L-2824T

LOT 8 REMAINDER GROUP 1158
PLAN 52019 C.L.S.R.

FRENCHY'S ISLAND

LEASE No. L-3175T

O.H.W.M. PLAN NO. 52019 C.L.S.R.

O.H.W.M. PLAN NO. 52019 C.L.S.R.

SOUTH BOUNDARY OF LOT 8 PLAN 52019 C.L.S.R. (NOT ESSO'S LEASE BOUNDARY)

SANDBAR

RECLAIMED BORROW PIT

G.I.T. 9

G.I.T. 6

LEGEND

- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- ESSO LEASE BOUNDARY
- UTILIDOR LOCATION
- PIPELINE R/W
- O/H POWERLINE
- LEASE BOUNDARY (O.H.W.M.)
- REGISTERED PLAN BOUNDARY
- SITE SUB-AREA
- CSM AREA
- ADDITIONAL AREAS MANAGED BY IES

CSM LEGEND AND CONCORDANCE

1. BATTERY #3 FLARE PIT - APPENDIX 5
2. REFINERY BANK - APPENDIX 6
3. B-38X AREA - APPENDIX 7
4. MAINLAND SUMPS - APPENDIX 8
5. BEAR ISLAND BT1 - APPENDIX 9
6. BEAR ISLAND SUMPS - APPENDIX 10
7. BEAR ISLAND FLARE PIT - APPENDIX 11

SOURCE:
SITE PLAN AS PER UMA ENGINEERING LTD. FILES 0101661101 (REV 0 DATED 95-10-16) AND 98104983 (REV 1 DATED 98-10-08)

UTM NAD27

m 0 100 200 300 400 500 m

1:10000

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

SITE LAYOUT

Date:	27-MAR-20	Drawn by:	OTHERS	Edited by:	B.M.F.	Appr'd by:	
Advisian				Project No.	417011-00096		
				FIG No.	2	REV	A

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FILE LOCATION: I:\GIA\GIS01\1\1\1\1\GIS\GIS\2019\2 – 2020 BIS REGULATORY AND PROGRAM SUPPORT\1\1\2_FIGURES_B_FIG\FIG11_4_GAO_FIE.EIS

LEGEND

SITE SUB-AREA

SOURCES:
1. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017

m 0 50 100 150 m

1:3000

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

MAINLAND WEST AREAS

Date: 27-MAR-20	Drawn by: OTHERS	Edited by: B.M.F.	App'd by:
Advisian Worley Group		Project No. 417011-00096	
		FIG No. 3A	REV A

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FILE LOCATION: U:\CALGARY\17-DOWNSTREAM\DESIGN\DWG\2019 RECLAMATION PROGRESS REPORT\17-DOWNSTREAM_MAINLAND WEST.DWG
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SAVE DATE & TIME: 2020-03-10 10:07 AM BEGUN: OTHERS ACAD

FILE LOCATION: U:\CAL\GBS\417011-00096\20100 - 2020 IES REGULATORY AND PROGRAM SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00096-20100-00-EN-DWG-2019_MAINLANDWEST_PH2.DWG

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SAVE DATE & TIME: 3/13/2020 11:08:07 AM
USER NAME: blair.fink
ISSUING OFFICE: eCAD

LEGEND

- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- BOREHOLE LOCATION
- UTILIDOR LOCATION
- LEASE BOUNDARY (O.H.W.M.)
- REGISTERED PLAN BOUNDARY
- OTHER MONITORING WELL LOCATION
- AREA OF POTENTIAL ENVIRONMENTAL CONCERN (APEC)

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013.
3. ADVISIAN SURVEY 2019.
4. AIR PHOTO VIA PLANET LABS GEOMATICS CORP. DATE: APRIL 6 AND 30, 2017.

NAD27 UTM ZONE 9

m 0 50 100 150 m

1:2500

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

MAINLAND WEST 2019 PHASE II ESA -
FORMER ABOVEGROUND STORAGE TANK AREA (APEC MW-13)

Date:	Drawn by:	Edited by:	App'd by:
31-MAR-20	OTHERS	BMF	

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Worley Group

Project No. 417011-00096

FIG No 3B

REV A

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LEGEND

- SITE SUB-AREA
- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- MONITORING WELL LOCATION
- ABANDONED MONITORING WELL LOCATION
- OTHER MONITORING WELL LOCATION
- OTHER SURFACE WATER SAMPLE LOCATION

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98108003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2016.
3. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017

m 0 50 100 150 m

1:3000

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

MAINLAND WEST - 2019 GROUNDWATER MONITORING

Date: 27-MAR-20	Drawn by: OTHERS	Edited by: B.M.F.	App'd by:
Advisian Worley Group		Project No. 417011-00096	
		FIG No. 3C	REV A

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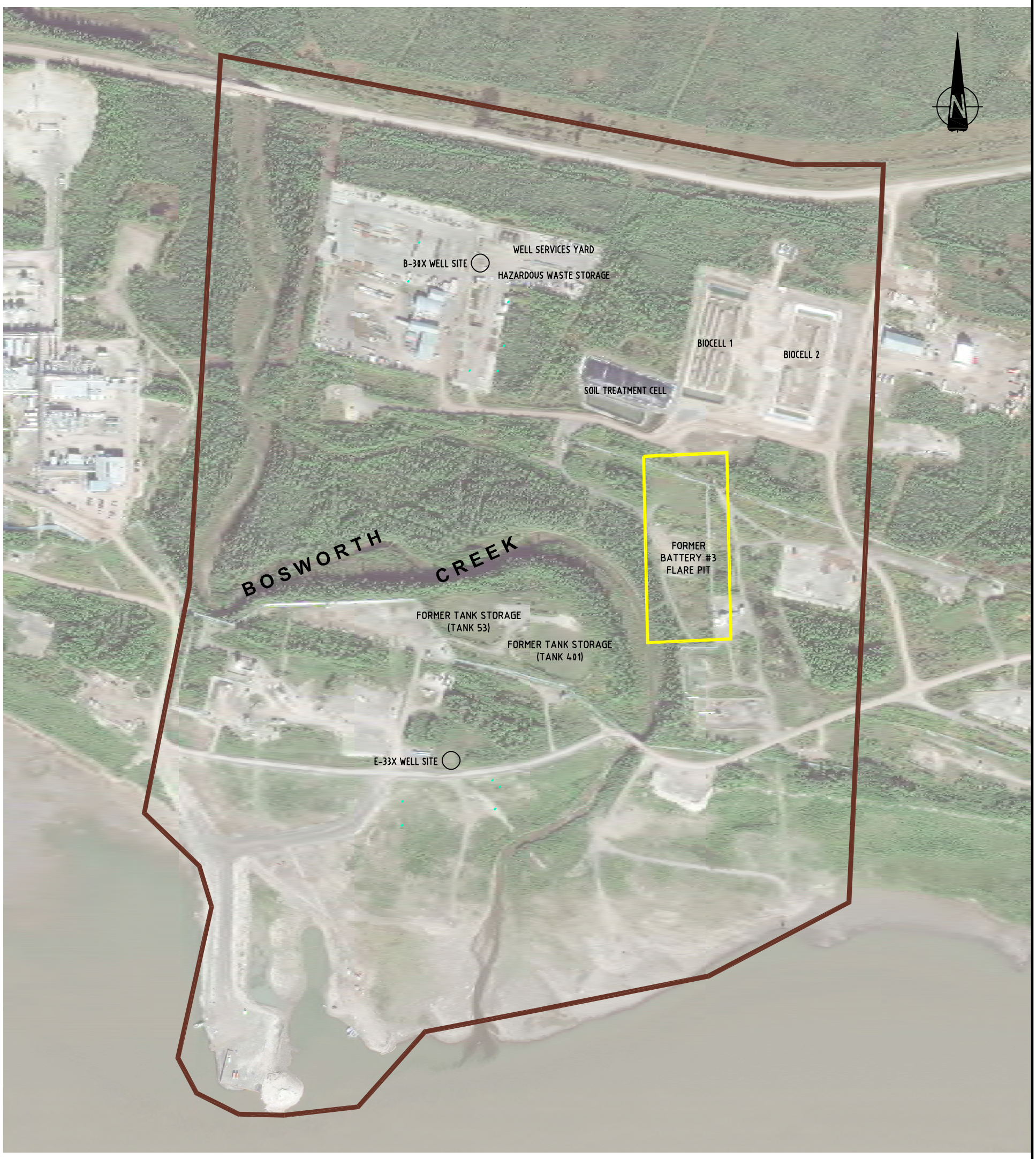
ISSUING OFFICE: eCAD



LEGEND

- SITE SUB-AREA
- CSM AREA (SEE APPENDIX 5)

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2017.
3. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017

m 0 50 100 250 m

1:5000

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

MAINLAND CENTRAL AREAS

Date:	Drawn by:	Edited by:	App'd by:
27-MAR-20	OTHERS	BMF	

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Project No. 417011-00096

FIG No 4A | REV A

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LEGEND

- FORMER INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- MONITORING WELL LOCATION
- BOREHOLE (APPROXIMATE)

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2017.
3. AIR PHOTO VIA PLANET LABS GEOMATICS CORP. DATE: APRIL 6 AND 30, 2017.
4. 2019 BOREHOLES AND MONITORING WELL SURVEYED AUGUST 23 & 25, 2019 BY WSP.

m 0 50 100 150 m

1:3000

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

MAINLAND CENTRAL - 2019 PHASE II ESA -
B-30X WELL SITE (APEC MC-23) SITE PLAN

Date:	Drawn by:	Edited by:	App'd by:
27-MAR-20	OTHERS	BMF	

Project No. 417011-00096

FIG No 4B | REV A

Advisian Worley Group

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ISSUING OFFICE: CALGARY
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SAVE DATE & TIME: 2/3/2020 4:21:43 PM
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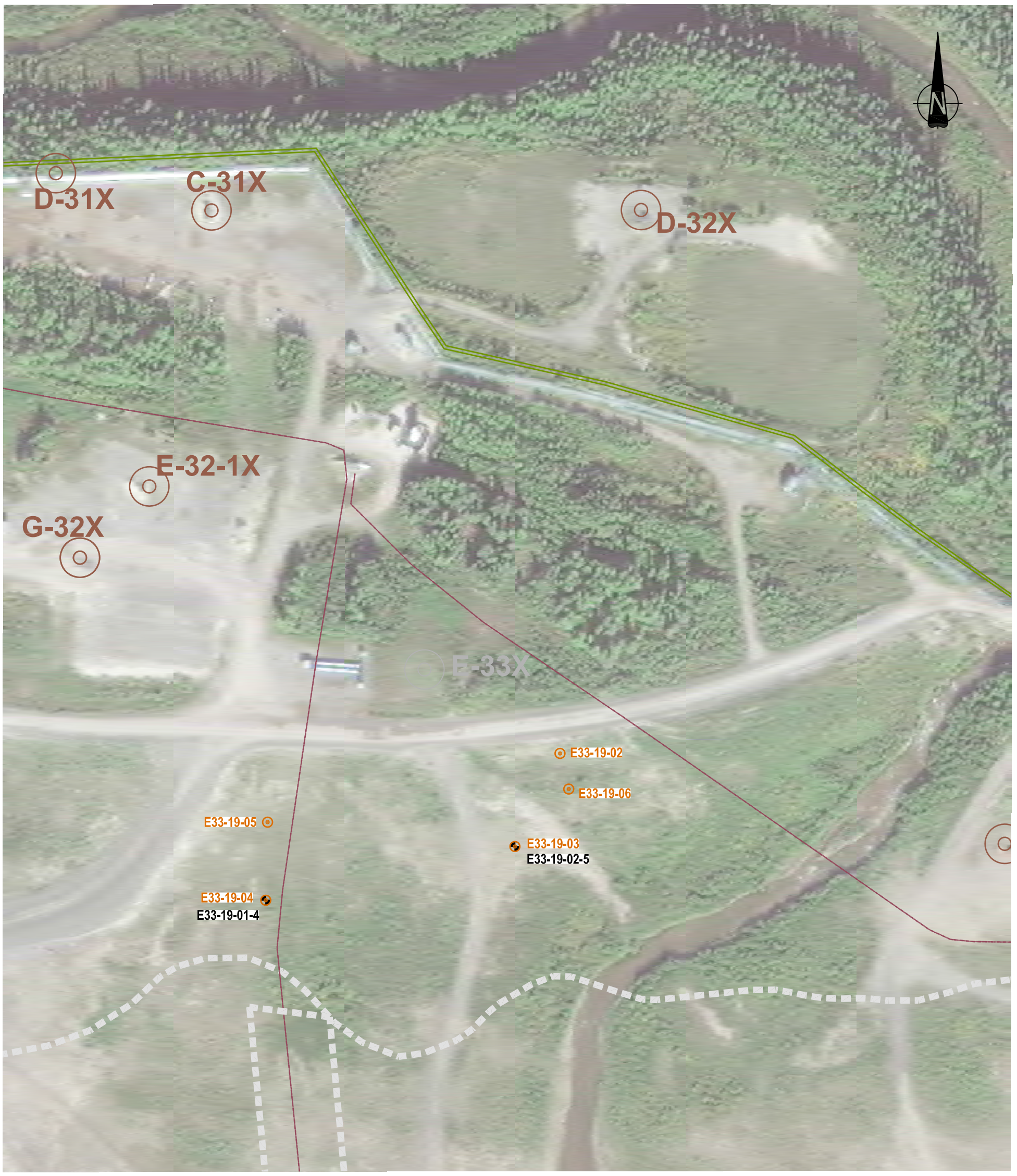
ISSUING OFFICE: eCAD



LEGEND

- UTILIDOR LOCATION
- LEASE BOUNDARY (O.H.W.M.)
- PIPELINE
- PRODUCTION WELL LOCATION
- MONITORING WELL LOCATION

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2017.
3. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017.
4. 2019 BOREHOLES AND MONITORING WELLS SURVEYED AUGUST 23 AND AUGUST 31, 2019 BY WSP.

m 0 10 20 30 40 50 100 m

1:1500

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

MAINLAND CENTRAL - 2019 PHASE II ESA -
E-33X WELL SITE (APEC MC-45)

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27-MAR-20	OTHERS	BMF	

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Project No. 417011-00096

FIG No 4C

REV A

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WPC_B_Enviro

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SAVE DATE & TIME: 3/19/2020 3:35:41 PM
USER NAME: Blair.Fink
ISSUING OFFICE: eCAD

MCBG-12-1-2
CPF97-9-4
B30-13-4-3.9
B30-13-3-4.5
B30X-12-2-4
B-30X
WELL SERVICES YARD
B30-13-2-4.5
MCBG-10-1-3
B30X-12-1-4
B-30X WELL SITE
B30-17-2-3
HAZARDOUS WASTE STORAGE
OPB 09-2-4
WSY 97-1-5
WSY 97-2-4
OPB 09-3-4
BC2-15-1-3
B30-17-1-5
B30-19-01-5
ARB-12-3-3
B30-13-5-4.5
ARB-10-2-3
BC2-15-2-4
BIOCELL 1
BIOCELL 2
ARB-17-1-3
ARB-13-1-4.5
ARB-13-3-4.5
ARB-12-1-4
B-33X
ARB SW01
B30-13-1-5.4
ARB-12-4-2
BC2-15-3-4
B33-10-1-3
SOIL TREATMENT CELL
ARB-17-2-3
ARB-17-SW02
C-30X
ARB-17-3-5
ARB-16-1-3
ARB-17-SW01
ARB-13-4-2.7
C30-10-1-5
ARB-13-5-4.5
BC2-15-4-3
ARB-13-7-SW
C-32X
ARB-10-1-3
BT300-28-44
BT300-29-22
BT3-10-1-3
BT3-18-1-5.5
BT3-10-2-3
C30 98-3-21
BOS SW01
BOS-DP-13-1-1.4
BOS DP 08-3
BOS SW-13-1
C-34X
FORMER BATTERY #3 FLARE PIT
BOSWORTH CREEK
BT3 99-23-13
BOS-DP-13-2-1.35
BOS 99-2-13
BT3 02-33-4
C-34-1X
BT3-12-1-3
BT3 SW01
D-31X
C-31X
D32 09-2-13
D32 09-1-4
BT3 99-21-12
FORMER TANK STORAGE (TANK 53)
D-32X
BT3 02-32-6
LT11 08-1-4
BT3 99-20-13
BOS-DP-13-3-2
BOS98 3-8-3
BOS DP 08-2
FORMER TANK STORAGE (TANK 401)
BT3 98-17-3
F31 98-1-4
F31 00-5-4
BT300 30 29
F31 97-3-5
BT3-12-2-7
BT3 97-2-5
BT3 02-34-4
J-29X
E-32-1X
BOS-DP-13-4-3
BT3 99-12-20
BT3 02-35-4
G-35X
F-31X
G-32X
BT3 97-10-8
BT3 02-36-4
F31 02-4-5
BOS DP98-3
BT3 02-1-4
G32 09-2-15
G32 09-1-4
BT3 97-11-11
MCBG-16-5-4
BT3 99-6-13
BT3 98-7-7
D-36X
E-33X
BT3 98-5-8
G32-10-1-3
F-35X
E-35X (FIELD)
E33-19-02-5
D-34X
E33-18-1-2.5
E33-19-01-4
E32 09-3-2

LEGEND

- SITE SUB-AREA
- CSM AREA (SEE APPENDIX 5)
- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- FORMER INJECTION WELL LOCATION
- MONITORING WELL LOCATION
- OTHER MONITORING WELL LOCATION
- 2019 SURFACE WATER SAMPLE LOCATION
- OTHER SURFACE WATER SAMPLE LOCATION

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2017.
3. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017

m 0 50 100 150 m

1:3000

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

MAINLAND CENTRAL -
2019 GROUNDWATER AND SURFACE WATER MONITORING

Date:	Drawn by:	Edited by:	App'd by:
27-MAR-20	OTHERS	BMF	

Advisian Worley Group

Project No. 417011-00096

FIG No 4D

REV A

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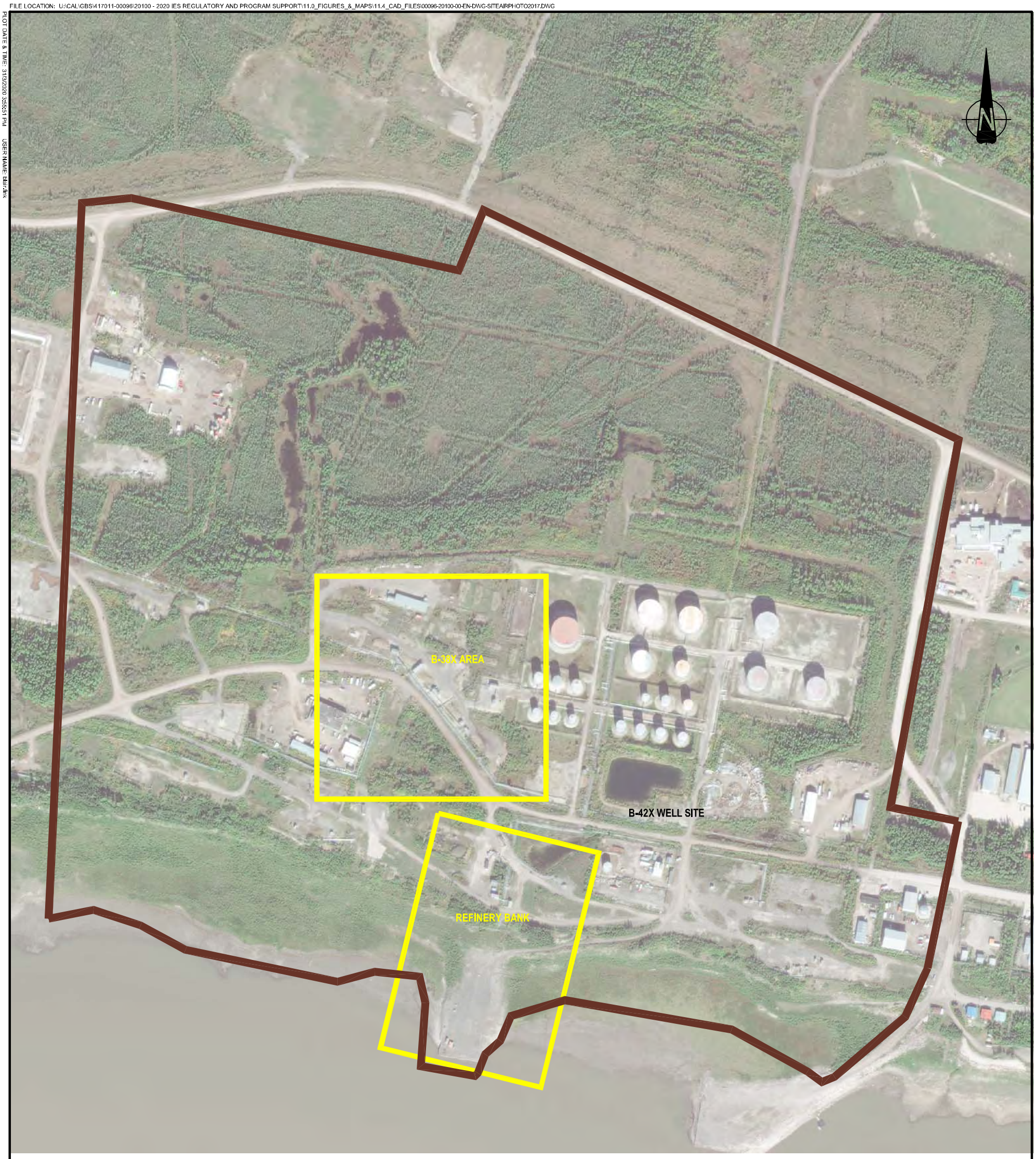
ISSUING OFFICE: eCAD



LEGEND

SITE SUB-AREA

CSM AREA (SEE APPENDIX 6 AND 7)

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2017.
3. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017

m 0 50 100 250 m

1:5000

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

MAINLAND EAST AREAS

Date: 27-MAR-20	Drawn by: OTHERS	Edited by: BMF	App'd by:

Advisian
Worley Group

Project No. 417011-00096

FIG No 5A | REV A

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SAVE DATE & TIME: 1/4/2020 7:43:06 AM
USER NAME: blair.fink
ISSUING OFFICE: eCAD

LEGEND

- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- BOREHOLE LOCATION

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2017.
3. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017.
4. 2019 BOREHOLES SURVEYED AUGUST 28-30, 2019 BY WSP.

m 0 25 50 75 m

1:1250

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

MAINLAND EAST - 2019 PHASE II ESA -
FIRE TRAINING AREA (APEC ME-6)

Date: 27-MAR-20	Drawn by: OTHERS	Edited by: BMF	App'd by:

Advisian
Worley Group

Project No. 417011-00096

FIG No 5B | REV A

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LEGEND

- UTILIDOR LOCATION
- FENCE
- INJECTION WELL LOCATION
- BOREHOLE LOCATION (APPROXIMATE)

N

NOTE:
HISTORICAL SOIL SAMPLING AND MONITORING WELL LOCATIONS NOT SHOWN FOR CLARITY.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2018.
3. 2019 BOREHOLES SURVEYED AUGUST 25 & 26, 2019 BY WSP.
4. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017.

m 0 25 50 75 m

1:1250

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

MAINLAND EAST - 2019 PHASE II ESA - NWR AND REFINERY BANK (APEC ME-7)

Date: 27-MAR-20	Drawn by: OTHERS	Edited by: BMF	App'd by:
Advisian Worley Group		Project No. 417011-00096	
		FIG No 5C	REV A

"This drawing is prepared for the use of our customer as specified in the accompanying report. Worley Canada Services Ltd. assumes no liability to any other party for any representations contained in this drawing."

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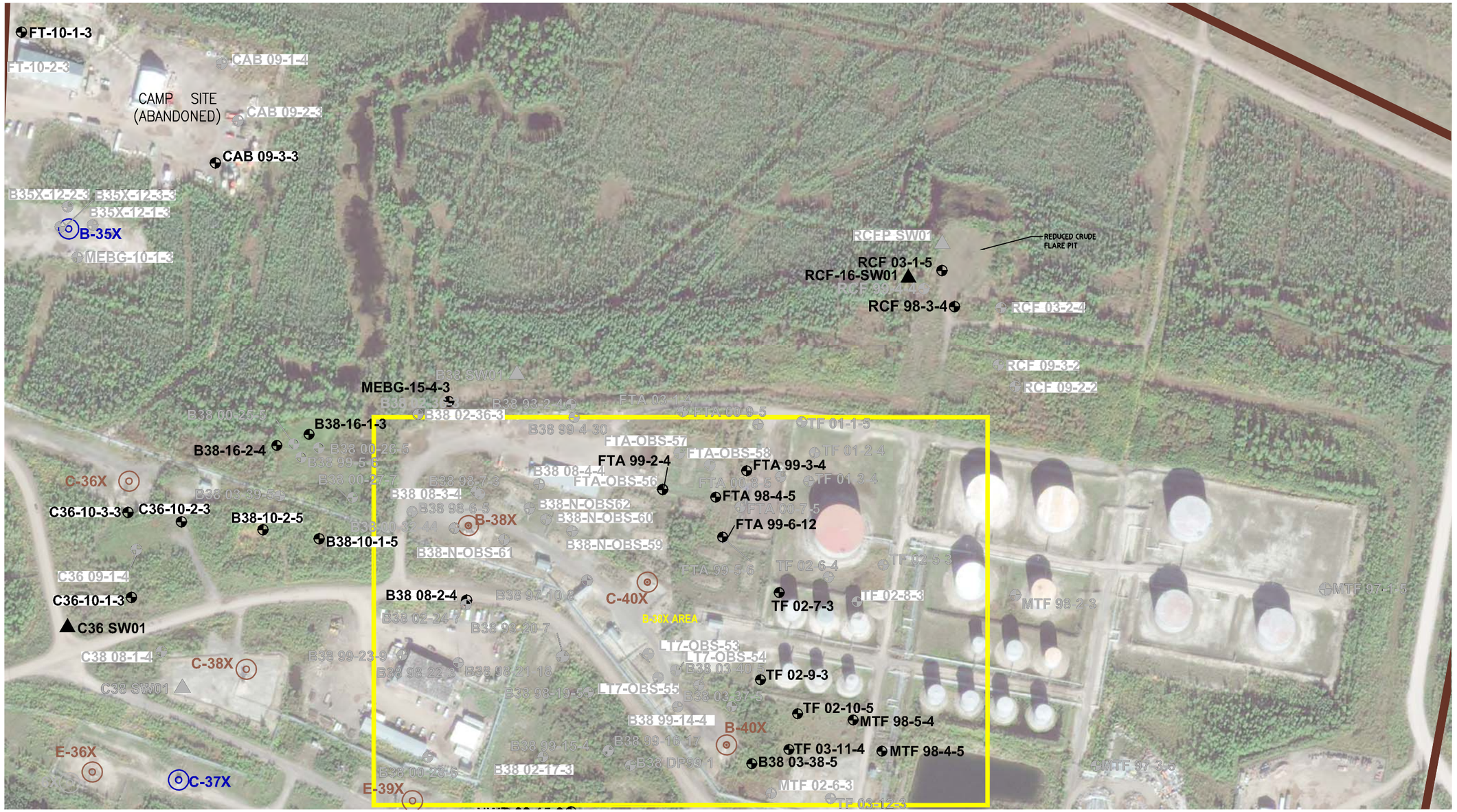
SAVE DATE & TIME: 1/4/2020 7:43:06 AM ISSUING OFFICE: eCAD

FILE LOCATION: U:\CAL\GBS\417011-00096\20100 - 2020 IES REGULATORY AND PROGRAM SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00096-20100-00-EN-DWG-2019_MAINLANDEAST.DWG



LEGEND

- SITE SUB-AREA
- CSM AREA (SEE APPENDIX 7)
- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- MONITORING WELL LOCATION
- 2019 SURFACE WATER SAMPLE LOCATION
- OTHER MONITORING WELL LOCATION
- OTHER SURFACE WATER SAMPLE LOCATION

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2017.
3. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017

m 0 50 100 150 m

1:3000

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

NORTH MAINLAND EAST -
2019 GROUNDWATER AND SURFACE WATER MONITORING

Date:	Drawn by:	Edited by:	App'd by:
28-MAR-20	OTHERS	B.M.F.	

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Worley Group

Project No. 417011-00096
FIG No 5D
REV A

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FILE LOCATION: U:\CAL\GBS\417011-00096\20100 - 2020 IES REGULATORY AND PROGRAM SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00096-20100-00-EN-DWG-2018_MAINLANDEAST.DWG

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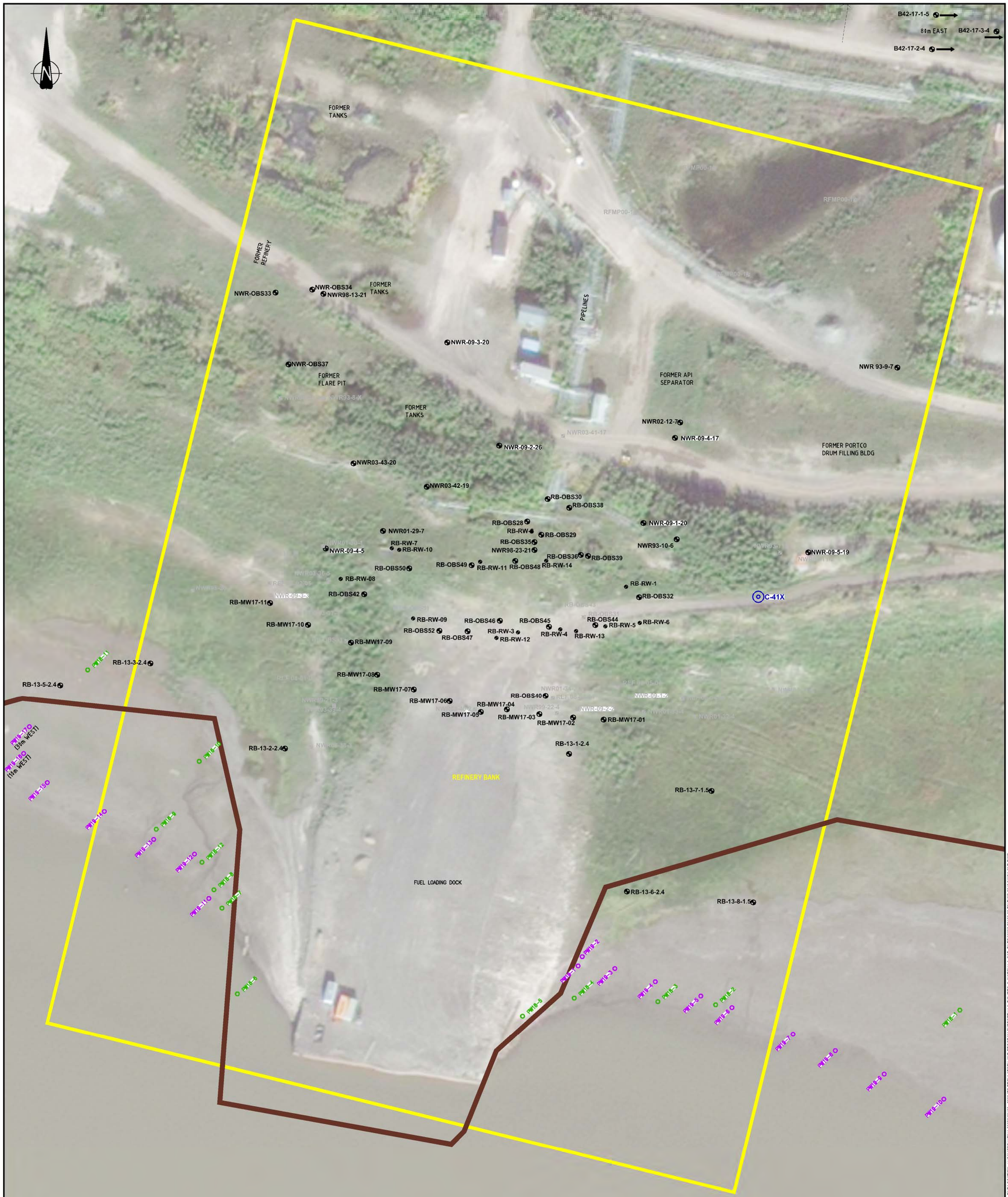
ISSUING OFFICE: CALGARY



LEGEND

- SITE SUB-AREA
- CSM AREA (SEE APPENDIX 6)
- INJECTION WELL LOCATION
- MONITORING WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- 2018 POREWATER SAMPLING LOCATION
- 2019 POREWATER SAMPLING LOCATION

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 018166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2017.
3. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017

m 0 10 20 30 40 m

1:750

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

REFINERY BANK (MAINLAND EAST) - 2019 GROUNDWATER MONITORING

Date: 28-MAR-20	Drawn by: OTHERS	Edited by: BMF	Appr'd by:
Advisian		Project No: 417011-00096	
		FIG No: 5E	REV: A

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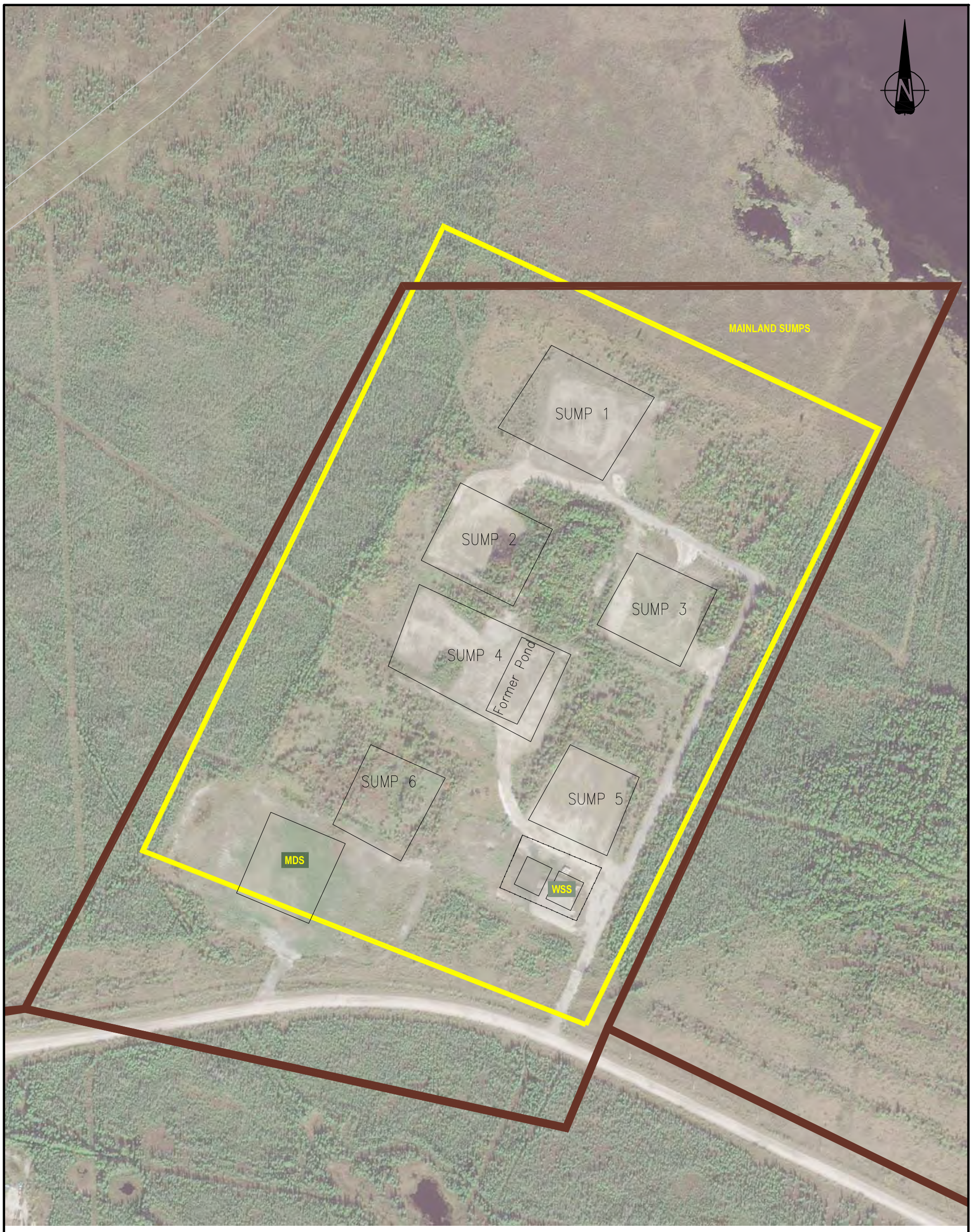
ISSUING OFFICE: dCAD



LEGEND

SITE SUB-AREA

CSM AREA (SEE APPENDIX 8)

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2017.
3. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017

m 0 50 100 150 m

1:3000

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

MAINLAND SUMPS AREA

Date:	Drawn by:	Edited by:	App'd by:
28-MAR-20	OTHERS	BMF	

Advisian Worley Group

Project No. 417011-00096

FIG No 6A | REV A

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ISSUING OFFICE: CALGARY
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SAVE DATE & TIME: 1/4/2020 8:18:50 AM

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MLS92-1-3
MLS SW07
MLS 09-3-3
MLS 09-7-2
MLS-14-4-SW
MLS-14-4-3
MLS SW03
MLS 09-15-3
MLS 93-3-6
MLS-14-8-3
SUMP 2
MLS SW05
MLS-13-5-2
MLS-14-3-3
MLS-14-3-SW
MLS-14-8-SW
MLS 09-4-4
MLS SW04
SUMP 3
MLS 09-6-2
MLS-10-1-7
MLS-14-2-3
SUMP 4
Former Pond
MLS 09-5-3
MLS-14-9-SW
MLS SW01
MLS-14-9-3
SUMP 6
SUMP 5
MLS 02-5-8
MLS 08-2-5
MLS SW06
MLS 09-9-2
MLS-10-2-3
MLS-13-2-3
MLS 08-1-4
MLS 09-8-2
MLS 02-10-8
MDS
MLS 08-3-4
MLS 02-6-9
MLS 02-9-8
MLS 97-12-4
MLS 02-8-8
MLS 02-7-7
MLS-13-3-3
MLS-13-1-3
MLS-13-4-3
ALF 98-1-3
MEBG-12-2-3
MEBG-12-1-3

LEGEND

- SITE SUB-AREA
- CSM AREA (SEE APPENDIX 8)
- MONITORING WELL LOCATION
- OTHER MONITORING WELL LOCATION
- OTHER SURFACE WATER SAMPLE LOCATION

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2017.
3. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017

m 0 50 100 150 m

1:3000

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

MAINLAND SUMPS -
2019 GROUNDWATER MONITORING

Date:	Drawn by:	Edited by:	App'd by:
28-MAR-20	OTHERS	BMF	

Advisian
Worley Group

Project No. 417011-00096

FIG No 6B

REV A

"This drawing is prepared for the use of our customer as specified in the accompanying report.
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ISSUING OFFICE: CALGARY

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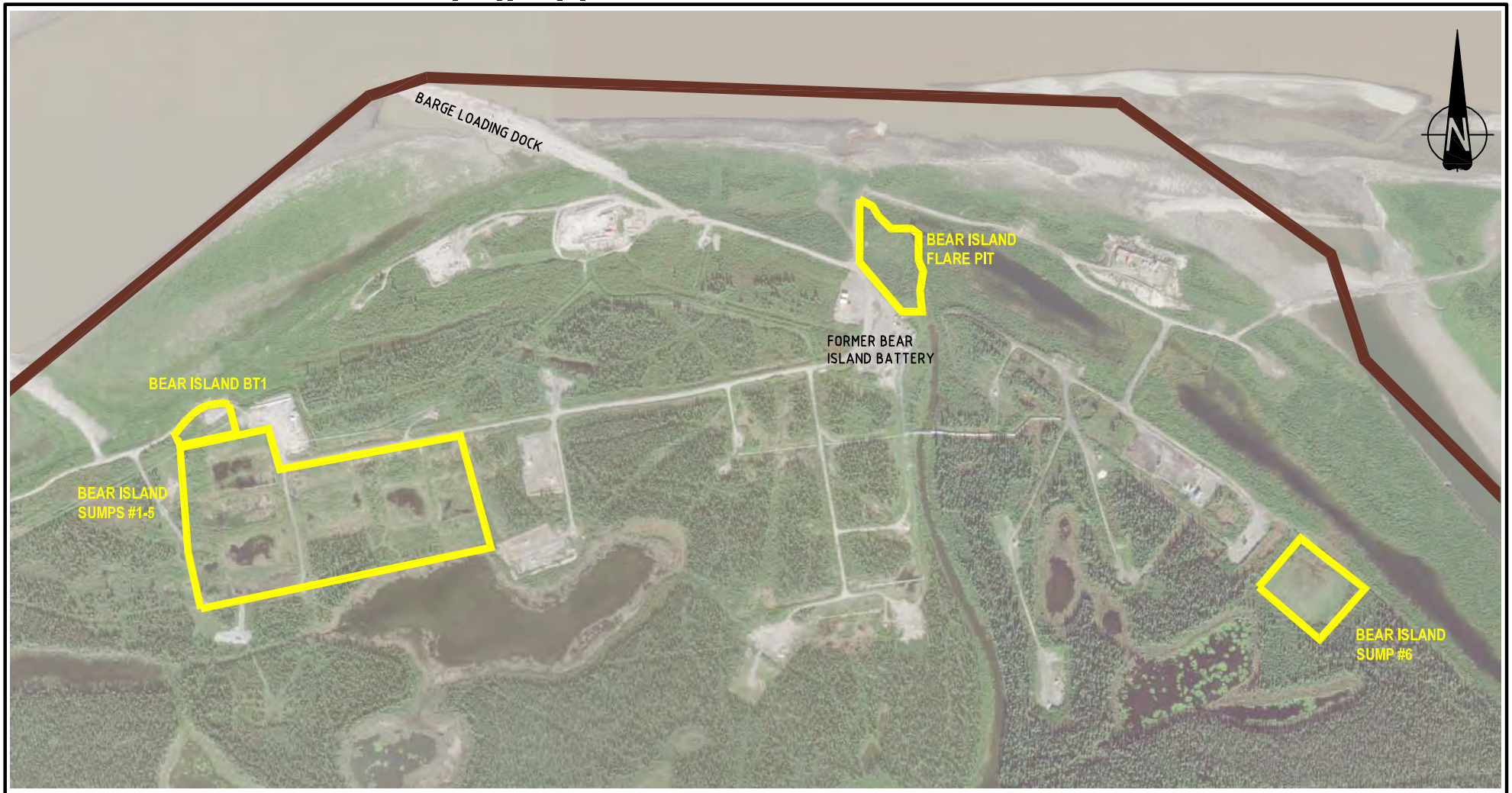

LEGEND

SITE SUB-AREA

CSM AREA

CSM LEGEND AND CONCORDANCE

BEAR ISLAND BT1 - APPENDIX 9

BEAR ISLAND SUMPS - APPENDIX 10

BEAR ISLAND FLARE PIT - APPENDIX 11

AIR PHOTO SOURCE: PLANET LABS GEOMATICS CORP.,
DATE: APRIL 6 AND 30, 2017

3TM NAD27

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1:10000

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

BEAR ISLAND AREAS

Date:	27-MAR-20	Drawn by:	BMF	Edited by:	-	App'd by:	
Advisian Worley Group				Project No.	417011-00096		
				FIG No	7A	REV	A

"This drawing is prepared for the use of our customer as specified in the accompanying report.
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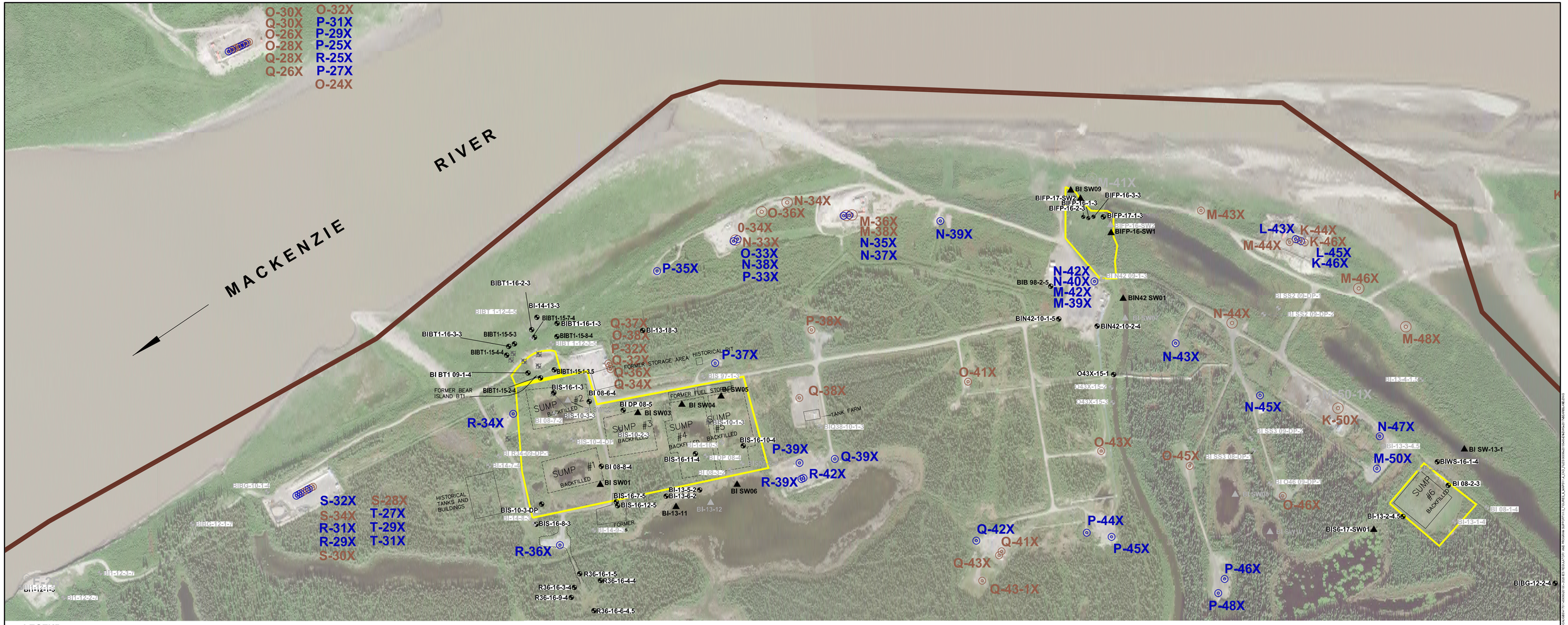
RIVER
MACKENZIE
FORMER STORAGE AREA
HISTORICAL PIT
FORMER BEAR ISLAND BT1
FORMER FUEL STORAGE
TANK FARM
HISTORICAL TANKS AND BUILDINGS
SUMP #1 BACKFILLED
SUMP #2 BACKFILLED
SUMP #3 BACKFILLED
SUMP #4 BACKFILLED
SUMP #5 BACKFILLED
SUMP #6 BACKFILLED
BI SW01
BI SW03
BI SW04
BI SW06
BI SW09
BIN42 SW01
BIFP-16-SW1
BIFP-17-SW2
BIBT1-16-2-3
BI-14-13-3
BIBT1-15-7-4
BIBT1-16-1-3
BI-13-18-3
BIBT1-16-3-3
BIBT1-15-5-3
BIBT1-15-8-4
BIBT1-15-4-4
BIBT1-15-1-3.5
BI BT1 09-1-4
BIBT1-15-2-4
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BI 08-6-4
BI DP 08-5
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BI-13-6-2
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BI-13-11
BI-13-12
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R36-16-9-4
R36-16-6-4.5
BIBG-12-2-4
BIS6-17-SW01
BI-13-2-4.5
BIWS-16-1-4
BI SW-13-1
BI 08-2-3
BI 08-5-4
BI 08-3-4
BIN42-10-1-5
BIN42-10-2-4
BIB 98-2-5
BIFP-17-SW1
BIFP-16-3-3
BIFP-16-1-3
BIFP-16-2-3
BIFP-17-1-3
Q43X-15-1
Q43X-15-2
Q43X-15-3
BIBG-12-2-5
BIBG-12-1-5
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BIBG-12-2-40
BIBG-12-2-41
BIBG-12-2-42
BIBG-12-2-43
BIBG-12-2-44
BIBG-12-2-45
BIBG-12-2-46
BIBG-12-2-47

LEGEND

SITE SUB-AREA

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013.

UTM NAD27

0 100 200 300 400 500m

SCALE 1 : 10,000

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

GOOSE ISLAND AREAS

Date: 31-MAR-20	Drawn by: OTHERS	Edited by: B.M.F.	App'd by:
Advisian Worley Group		Project No. 417011-00096	
		FIG No 8A	REV A

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FILE LOCATION: U:\CAL\GBS\417011-00096\20100 - 2020 IES REGULATORY AND PROGRAM SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00096-20100-00-EN-DWG-2018-GOOSEISLAND.DWG

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SAVE DATE & TIME: 1/4/2020 1:35:52 PM
USER NAME: blair.fink
ISSUING OFFICE: CALGARY

LEGEND

- SITE SUB-AREA
- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- MONITORING WELL LOCATION
- OTHER MONITORING WELL LOCATION
- 2019 SURFACE WATER SAMPLE LOCATION
- OTHER SURFACE WATER SAMPLE LOCATION

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 0101661O1 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013.

UTM NAD27

0 100 200 300 400 500m

SCALE 1 : 10,000

IMPERIAL
2019 ANNUAL RECLAMATION PROGRESS REPORT
NORMAN WELLS, NT

GOOSE ISLAND -
2019 GROUNDWATER MONITORING

Date:	31-MAR-20	Drawn by:	OTHERS	Edited by:	B.M.F.	App'd by:

Advisian
Worley Group

Project No. 417011-00096

FIG No 8B

REV A

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ISSUING OFFICE: CALGARY

MAINLAND SUMPS

MAINLAND CENTRAL

MAINLAND WEST

MAINLAND EAST

SEEPAGE LAKE

SEEPAGE LAKE

NORMAN WELLS AIRSTRIP

MACKENZIE RIVER

LEASE No. 96 E/7-29

LEASE No. 76 E/7-16

LEASE No. 96 E/7-26-4

ISLAND 3 (DEHCHO)

PRODUCING WELLS: I-22X K-24X I-24X M-18X K-17X M-20X K-20X M-22X K-22X M-24X

INJECTION WELLS: J-19X L-19X J-21X L-21X J-23X L-23X

ISLAND 4 (EKWE)

PRODUCING WELLS: I-28X K-28X I-30X M-28X K-30X M-30X

INJECTION WELLS: H-29-1X L-25X J-29X L-27X J-29-1X L-29X J-29-1X L-31X

ISLAND 1 (RAYUKA)

PRODUCING WELLS: G-34X G-40X G-36X I-36X G-38X I-38X

INJECTION WELLS: F-37X H-35X F-39X H-37X H-33X H-39X

ISLAND 2 (RAMPART)

PRODUCING WELLS: E-42X E-44X E-46X E-48X G-42X G-44X G-46X I-42X I-44X I-46X I-48X F-52X (PROPOSED)

INJECTION WELLS: F-41X H-41X F-43X H-43X F-45X H-45X F-47X H-47X H-41X H-49X H-52X (PROPOSED)

PLAN 69807 C.L.S.R. (L.T.O. No. 1732)
LOT 1007 LEASE No. 96 E/7-15-2
ISLAND 5 (ITEH K'EE)

PRODUCING WELLS: M-31X M-32X M-34X M-36X K-32X K-34X

INJECTION WELLS: J-31X L-33X J-33X L-35X J-35X L-37X J-36X L-35X

PLAN 69807 C.L.S.R. (L.T.O. No. 1732)
LOT 1008 LEASE No. 96 E/7-14-2
ISLAND 6 (LITTLE BEAR)

PRODUCING WELLS: I-40X I-42X I-44X K-38X

INJECTION WELLS: K-40X K-42X M-40X J-37X J-39X J-41X J-43X L-41X L-43X

FRENCHY'S ISLAND

LEASE No. L-3175T

BEAR ISLAND

LEASE No. L-2824T

GOOSE ISLAND

LEASE No. L-2825T

LOT 8 REMAINDER GROUP 1158
PLAN 52019 C.L.S.R.

SANDBAR

SOUTH BOUNDARY OF LOT 8 PLAN 52019 C.L.S.R. (NOT ESSO'S LEASE BOUNDARY)

O.H.W.M. PLAN NO. 52019 C.L.S.R.

O.H.W.M. PLAN NO. 52019 C.L.S.R.

RECLAMATION BORROW PIT

FUEL STORAGE

SEWAGE LAGOON

SEWAGE PIT

SUMP #1 INACTIVE

SUMP #2 INACTIVE

SUMP #3 INACTIVE

SUMP #4 INACTIVE

SUMP #5 INACTIVE

SUMP #6 INACTIVE

SUMP #7 INACTIVE

SUMP #8 INACTIVE

SUMP #9 INACTIVE

SUMP #10 INACTIVE

SUMP #11 INACTIVE

SUMP #12 INACTIVE

SUMP #13 INACTIVE

SUMP

Appendix 1
Water Licence S13L1-007

National Energy Board

Office national de l'énergie

File OF-EP-OA-I047-1210 0101
19 December 2014

Jennifer L. Watson
Norman Wells Operations Superintendent
Imperial Oil Resources N.W.T. Limited
1001 Canol Drive
Bag 5000
Norman Wells, NT X0E 0V0

Dear Ms. Watson:

Imperial Oil Resources N.W.T. Limited (Imperial) Operations Authorization Application dated 31 July 2014 for the Norman Wells Field

The National Energy Board (NEB) has considered the Imperial Norman Wells Field Operations Authorization application dated 31 July 2014. Imperial is hereby granted Operations Authorization OA-1210-001 for a ten year term ending on 31 December 2024 subject to the attached terms and conditions.

In addition, the flow system, the flow calculation procedure and the flow allocation procedure for the Imperial Norman Wells operations, as outlined in Section 11 of the Operations Authorization application, are hereby approved in accordance with subsection 7(2) of the *Canada Oil and Gas Drilling and Production Regulations*.

Note that all future well approvals, applications, notifications and reports relating to the Operations Authorization for Norman Wells are to be submitted by Imperial Oil Resources N.W.T. Limited.

If you have questions please contact Gary Woo, Technical Coordinator, by telephone at 403-299-3143.

Yours truly,

Jamie Kereliuk
Chief Conservation Officer

Attachments

cc: Geoff Pearse, SSHE Manager, Imperial
Helga Shield, Senior Environmental and Regulatory Advisor, Imperial

517 Tenth Avenue SW
Calgary, Alberta T2R 0A8

517, Dixième Avenue S.-O.
Calgary (Alberta) T2R 0A8

Canada

Telephone/Téléphone : 403-292-4800
Facsimile/Télécopieur : 403-292-5503
www.neb-one.gc.ca
Telephone/Téléphone : 1-800-899-1265
Facsimile/Télécopieur : 1-877-288-8803

Operations Authorization OA-1210-001
File OF-EP-OA-I047-1210 0101
Terms and Conditions

General

1. Imperial shall implement or cause to be implemented all of the commitments, policies, practices, mitigative measures, recommendations and procedures for safety and/or the protection of the environment referred to in its application and subsequent filings.

Plans

2. Imperial shall submit any changes made to the safety plan, the environmental protection plan (EPP) or contingency plans to the Chief Conservation Officer, and, for the EPP, identify any modifications or deviations to the EPP that relate to commitments made to, or conditions imposed by the Sahtu Land and Water Board Water Licence.

Operations

3. Imperial shall submit an application for any deviation from the authorized work or activities for approval by the Chief Conservation Officer no less than fifteen (15) working days prior to the commencement of the work or activity. The application shall include a description and the objectives of the proposed work and the anticipated impacts.

4. Imperial shall submit an application to abandon any facility or flowline for approval by the Chief Conservation Officer no less than fifteen (15) working days prior to the commencement of the work or activity. The application shall include a description of the facility or flowline to be abandoned and a plot plan.

5. Imperial shall notify the Chief Conservation Officer no less than fifteen (15) working days prior to commencement of any major, non-routine operations and maintenance project work or modifications to flowlines, production storage tanks, the central processing facility or its systems, or work related to remediation (but not work requiring a Well Approval). Imperial shall send the notification by email to the COGOA.notifications@neb-one.gc.ca email address. The notification shall include a description of the proposed work and confirmation that it is within the scope of OA-1210-001 and confirmation that all appropriate safety and environmental protection measures will be applied.

6. Imperial shall notify the Chief Conservation Officer no less than thirty (30) working days prior to commencement of any table-top, functional or full-scale emergency response exercises. Imperial shall send the notification by email to the COGOA.notifications@neb-one.gc.ca email address. The notification shall include a

description of the scope and objectives of the proposed exercise, anticipated dates and exercise locations, and participants to be invited.

7. Imperial shall submit for approval by the Chief Conservation Officer no less than fifteen (15) working days prior to any modifications to the flow system, the flow calculation procedure and the flow allocation procedure (production metering, grouping or proration procedures). The submission shall include the scope and objectives of the proposed changes and anticipated impacts.

Reporting

8. The annual safety, environmental and production reports to be submitted pursuant to *Canada Oil and Gas Drilling and Production Regulations* (COGDPR) sections 85- 87 shall include a confirmation by an officer of the company that the authorized work and activities were completed in compliance with all applicable conditions in OA-1210-00. If compliance with any of these conditions cannot be confirmed, the officer of the company shall provide details as to why compliance cannot be confirmed.

9. Imperial shall submit an Annual "Flowline Integrity and Mackenzie River Breakup" Report no later than 31 October of the reporting year.

10. Each month Imperial shall submit to the Chief Conservation Officer a report about pollution incidents relating to the previous month's operations. The report shall:

    (a) describe each unauthorized discharge (COGDPR paragraph 9(i)), spill and/or release, or each exceedance of the maximum gas flow rate to the flare stack whether reported or not to the NT-NU 24-hour Spill Report Line;

    (b) provide a copy of the investigative report, as per subsection 75(2) of the COGDPR, that identifies the root cause, causal factors and corrective actions taken for each spill and/or release or each exceedance of the authorized maximum gas flow rate to the flare stack that may exceed applicable water, soil or air quality standards, objectives or guidelines; and,

    (c) identify each unauthorized discharge (COGDPR paragraph 9(i)), spill and/or release from previous reports for which further corrective action or clean-up is required or is ongoing.

11. The annual environmental report, required under section 86 of the COGDPR shall include the following additional details for the reported year:

    (a) For monitoring of the central processing facility flare gas discharge stream (authorized limits of discharge (CODPR paragraph 9(i));

        (i) the maximum daily discharge rate, and duration of the maximum rate, per month;

(ii) the average daily flaring duration and flow rate, per month;

(iii) a description of any changes to the system for monitoring compliance with the routine and non-routine daily flare gas discharge limits;

(iv) a summary table of all of routine operation where flaring occurred in exceedance of 200 km^3/d as well as all events of non-routine operation where flaring occurred in exceedance of 700 km^3/d. This table shall include:

(1) date the event was reported to the NEB;

(2) the rate and duration of the exceedance;

(3) the operating conditions (routine or non-routine) experienced at that time;

(4) the probable sources of each identified exceedance; and,

(5) the corrective actions proposed or undertaken for each identified exceedance.

(v) a table of the maximum flow rate and duration per month of all non-routine flaring events which occurred below the authorized discharge limit of 700 km^3/d.

(b) For the purposes of tracking contaminated sites, Imperial shall provide and maintain a listing of all known, suspected and remediated contaminated sites, including but not limited to a description of

(i) the current status,

(ii) the clean-up end points, and

(iii) the actions taken or proposed to be taken to assess, monitor or remediate each site.

(c) Identify any information to be reported that may be delayed and provide the reason for the delay.

12. Imperial shall submit a biannual report summarizing the packer isolation data and findings to the Chief Conservation Officer.

13. Imperial shall submit an annual report summarizing the surface casing vent flow data and findings to the Chief Conservation Officer.

14. With respect to the biannual pressure survey Imperial shall submit the following to the Chief Conservation Officer:

(a) For approval, a proposed biannual pressure survey no less than fifteen (15) working days prior to the commencement of the survey; and,

(b) A biannual pressure survey report summarizing the data and findings.

15. Imperial shall include a summary of the injection volumes for the F-31X well in the annual production report (section 85 of the COGDPR).

16. Imperial shall submit renewed insurance certificates within thirty (30) days following the beginning of each calendar year to the Chief Conservation Officer.

Navigable Waters

17. Imperial shall maintain "No Anchorage" signs on both sides of the Mackenzie River near the cross-river flowline bundles.

Closure

18. Imperial shall submit within one year of water licence S13L1-007 being issued a closure and reclamation plan to the Chief Conservation Officer.

19. Imperial shall submit any revisions to the closure and reclamation plan to the Chief Conservation Officer.

20. Imperial shall submit an annual "closure and Reclamation" report to the Chief Conservation Officer no later 31 May following the calendar year being reported.

21. Imperial shall submit a minimum of 24 months prior to the end of commercial operations, a final closure and reclamation plan to the Chief Conservation Officer.

Biannual Meeting

22. Imperial shall notify the Chief Conservation Officer at least 60 days in advance of undertaking and presenting a bi-annual review of its operations to the National Energy Board, beginning in 2016.

National Energy Board | Office national de l'énergie

MAIL ROOM
SALLE DE COURRIER
2014 DEC 11 P 3:07
NEB/ONE

OPERATIONS AUTHORIZATION

APPLICATION

IMPERIAL OIL RESOURCES N.W.T. LIMITED

(Name of Operator)

Hereby applies for authorization of a proposed:

☐ Drilling Program ☒ Production Program ☐ Installation/Removal Program ☐ Other
Please Specify:

under paragraph 5(1)(b) of the *Canada Oil and Gas Operations Act (R.S.C., 1985, c. O-7) and* Part 2 of the *Canada Oil and Gas Drilling and Production Regulations* (SOR/2009-0315) using equipment and procedures described in the application .

Changes in equipment or procedures, outside the scope of this application, require the approval of the Board in order that this authorization remains valid. An approved copy of this notice is to be posted at each work site and is subject to the terms and conditions attached to this authorization.

Licence No. Other - Norman Wells Proven Area NEB Operating Licence No. 1210

Region NWT Mainland

Field Norman Wells

Anticipated date of commencement January 2015 Proposed Duration 120 months

Scope of Work as per Operations Authorization application dated July 31, 2014

"I certify that the information provided on this form is true and correct"

Name Zaidah Ibrahim Telephone (403) 237-4029 Ext

Job Designation Production Manager E-Mail zaidah.ibrahim@exxonmobil.com

Signature Zaidah Ibrahim Date December 17, 2014

Responsible Officer of Company

NATIONAL ENERGY BOARD AUTHORIZATION

(Board Use Only)

The operator named above is hereby authorized under paragraph 5(1)(b) of the *Canada Oil and Gas Operations Act (R.S.C., 1985, c. O-7)* and is subject to the terms and conditions attached to this authorization.

Job Designation Chief Conservation Officer

Signature Date 19 December, 2014

NEB Authority

Operation Authorization (OA) No. OA-1210-001 Expiry Date 31 December 2014

Canada

Pursuant to the *Mackenzie Valley Resource Management Act* and Regulations, the Sahtu Land and Water Board, hereinafter referred to as the Board, hereby grants to:

Imperial Oil Resources N.W.T. Limited
Norman Wells Operations

(Licensee)

of **Bag Service 5000, Norman Wells, NT, X0E 0V0**

(Mailing Address)

Hereinafter called the Licensee, the right to alter, divert or otherwise use water subject to the restrictions and conditions contained in the *Mackenzie Valley Resource Management Act* and Regulations made there under and subject to and in accordance with the conditions specified in this Licence.

Licence Number:	S13L1-007
Licence Type:	A
Location:	NORMAN WELLS PROVEN AREA, NT
Purpose:	WATER USE AND WASTE DISPOSAL
Description:	FOR INDUSTRIAL UNDERTAKINGS IN OIL AND GAS PRODUCTION, AND ASSOCIATED USES
Effective Date of Licence:	
Term of Licence:	10 YEARS
Expiry Date of Licence:	

This Licence issued and recorded at Fort Good Hope, NT, includes and is subject to the annexed conditions.

Sahtu Land and Water Board:

Witness **Chair – Mr. Larry Wallace**

APPROVED BY: _____

Minister of Indian Affairs and Northern Development

List of Abbreviations

AANDC	Aboriginal Affairs and Northern Development Canada
AEMP	Aquatic Effects Monitoring Program
BTEX	benzene, toluene, ethylbenzene, and xylenes
CPF	Central Processing Facility
EQC	Effluent Quality Criteria
GW	Groundwater
ICP-MS	Inductively coupled plasma mass spectrometry
IORL	Imperial Oil Resources N.W.T. Limited, the Licensee
MVRMA	Mackenzie Valley Resource Management Act
NT	Northwest Territories
NWPA	Norman Wells Proven Area
QA/QC	Quality Assurance and Quality Control
SNP	Surveillance Network Program

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Part D: Conditions Applying to Water Use
Water Use – Schedule 3
Part E: Conditions Applying to Waste and Waste Management
Groundwater Management Plan – Schedule 4
Part F: Conditions Applying to Operation and Maintenance
Flowline Integrity and Mackenzie River Breakup Report – Schedule 5
Part G: Conditions Applying to Modifications
Part H: Conditions Applying to Contingency Planning
Part I: Conditions Applying to Aquatic Effects Monitoring
AEMP Design Plan – Schedule 6
Part J: Conditions Applying to Closure and Reclamation
Closure and Reclamation Report – Schedule 7

Schedules

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Schedule 2: Security Requirements
Schedule 3: Water Use
Schedule 4: Groundwater Management Plan
Schedule 5: Flowline Integrity and Mackenzie River Breakup Report
Schedule 6: Aquatic Effects Monitoring

Annex A: Surveillance Network Program

Part A: Location of Surface Water Surveillance Stations
Part B: Quality Assurance and Quality Control
Part C: Sampling and Analysis Requirements for Surface Water SNP Stations
Part D: Reports
Part E: Sampling and Analysis Requirements for Surface Water Run-Off Facilities
Part F: Surface Water Run-off Facility Categories
Part G: Groundwater Monitoring Wells
Part H: Flow, Volume and Temperature Measurement Requirements

Part A: Scope and Definitions

1. Scope

a) This Licence entitles Imperial Oil Resources N.W.T. Limited to use waters and dispose of Waste for industrial undertakings in oil and gas production, closure and reclamation, and associated uses at the Norman Wells Norman Wells Proven Area located at Latitude 65º 17' N., Longitude 126º51' W., in the Northwest Territories;

b) This Licence is issued, subject to the conditions contained herein, with respect to the use of Waters and the deposit of Waste of any type in any Waters or in any place under any conditions where such Waste or any other Waste that results from the deposits of such Waste may enter any Waters. Whenever new Regulations are made or existing Regulations are amended by the Governor-in- Council under the *Mackenzie Valley Resource Management Act*, or other statutes imposing more stringent conditions relating to the quantity or type of Waste that may be so deposited or under which any such Waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be automatically amended to conform with such Regulations; and,

c) Compliance with the terms and conditions of this Licence does not affect the Licensee's obligation to comply with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. Definitions

"Act" means the *Mackenzie Valley Resource Management Act*.

"Acute Lethality" means an effluent which is deemed acutely lethal if the undiluted (100%) effluent kills 50% or more of the fish or daphnia in the test. (Biological test method: Acute Lethality Test Using Rainbow Trout Report EPS 1/RM/9 July 1990), and (Biological test method: Acute Lethality of Effluents to Daphnia magna EPS 1/RM/14 Second Edition December 2000), as may be amended from time to time.

"Analyst" means an Analyst designated by the Minister under Sub-section 84(2) of the *Act*.

"Aquatic Effects Monitoring Program" means a monitoring program designed to determine the short and long-term effects in the Receiving Environment resulting from Project activities and to evaluate if the Receiving Environment is being adequately protected or Waters used are being adequately managed or additional mitigation measures are necessary.

"Artificial Islands" means the physical structure of the constructed islands, including the sand core, slope and scour protection, drilling equipment and supplies, storage facilities, well head equipment, and temporary or permanent buildings.

"Biocell" comprises the area or engineered cell designed for the treatment of contaminated soil through biological processes by degradation of contaminants. The

bioremediation process may involve the addition of water and nutrients, as well as aeration through mechanical processing.

"Board" means the Sahtu Land and Water Board established under Section 56 of the *Act*.

"Central Processing Facility" means the plant where oil, gas, and Produced Water are collected from the oilfield and separated, with plant cooling being accomplished using Mackenzie River water.

"Commercial Operations" means the period of oil production.

"Discharge" means the direct or indirect release of any Waters or Waste to the Receiving Environment.

"Flowline" means a line that is used to transport fluids from a well to a production facility or vice versa, and includes intrafield export and all gathering lines.

"Grab Sample" means an instantaneous sample of Waters.

"Groundwater" means all Waters below the ground surface.

"**Groundwater Treatment Facilities"** system designed to collect and treat contaminated Groundwater.

"Impermeable Lined Diked Areas" means an area enclosed by a dike incorporating a synthetic liner that is considered to be impermeable to leakage for the purposes of completely containing all drilling fluids and drilling Wastes within the diked and lined area.

"Inspector" means an Inspector designated by the Minister under Sub-section 84(1) of the *Act*.

"Licensee" means the holder of this Licence.

"Minister" means the Minister of Indian Affairs and Northern Development;

"Modification" in respect of a structure, means a change, other than an expansion, that does not alter the purpose or function of a structure.

"Natural Islands" means Bear, Goose, and Frenchy's Islands, including drilling equipment and supplies, waste and storage facilities, well-head equipment, and temporary or permanent buildings.

"Norman Wells Proven Area" means the proven area identified in the Proven Area Agreement between Canada and Imperial Oil Limited dated July 21, 1944, as amended.

"Produced Water" means Waters naturally present in the reservoir or injected into the reservoir to enhance production and produced as a co-product when gas or oil is produced.

"Project" means the undertaking described in Part A, Item 1.

"Receiving Environment" means, for the purpose of this Licence, the natural environment that receives any deposit or Discharge of Waste, including runoff, from the Project.

"Reclamation" means activities which facilitate the return areas affected by the Project to viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment, human activities, and the surrounding environment.

"Regulations" means Regulations proclaimed pursuant to Section 90.3 of the *Act*.

"Representative Grab Sample" means a grab sample consisting of equal portions of Water collected from a minimum of two locations within one site.

"River Ice Breakup" means the period from the time the ice first starts to move in the Mackenzie River at Norman Wells in the spring, to the time when the River is free of pack ice at Norman Wells.

"Single Composite Sample" means a sample composed of proportional sub-samples taken over a time period acceptable to an Inspector, as approved by the Analyst, and submitted to the Board in accordance with the sampling and analysis requirements specified in the "Surveillance Network Program";

"Surface Water Run-Off Facilities" means those locations referred to in Annex A, Part F.

"Surveillance Network Program" refers to the program set out in Annex A.

"Unauthorized Discharge" is a Discharge of any waters or Waste not authorized under this Licence or legislation.

"Waste" means waste as defined in Section 51 of the *Act.*

"Watercourse" a natural body of flowing or standing water or an area occupied by water during part of the year, and includes streams, springs, swamps and gulches but does not include groundwater.

"Waterflood" means the injections of Waters into the Norman Wells oilfield reservoir for pressure maintenance and enhanced oil production.

"Waters" means waters as defined in Section 51 of the *Act*;

"Water Intake" means the wetwell pump and associated facilities installed in the Mackenzie River and the water line to the Central Processing Facility.

Part B: General Conditions

1. The Licensee shall ensure that a copy of this Licence is maintained on the Project site at all times.

2. The water use fee shall be paid annually in advance of any use of Waters, in accordance with the Mackenzie Valley Land and Water Board's *Water Use Fee Policy*.

3. The Licensee shall operate in accordance with any Management Plans (Plans) approved pursuant to the conditions of this Licence and with any revision to the Plans as may be made from time to time pursuant to the conditions of this Licence and as approved by the Board. If any Plan or proposed update is not approved by the Board, the Licensee shall revise the Plan according to the Board's direction and re-submit it to the Board for approval.

4. The Licensee shall comply with the Schedules, which are annexed to and form part of the Licence.

5. The Schedules may be amended at the discretion of the Board through a process which shall include public notice of the Board's intention to consider a change, such Notice to be provided to the Licensee, the Minister, regional AANDC officials and other affected or interested stakeholders. Any such Notice shall be accompanied by an explanation of the proposed change to a Schedule and a reasonable opportunity shall be provided for comments to be provided by interested parties, and considered by the Board, before a decision is made.

6. The matters for which flexibility is required by the Board and where amendments to Schedules may be made by the Board from time to time under Part B Item 5 include the following:

    - Schedule 1 General Conditions;
    - Schedule 2 Conditions Applying to Security;
    - Schedule 3 Conditions Applying to Water Use;
    - Schedule 4 Conditions Applying to Waste and Waste Management;
    - Schedule 5 Conditions Applying to Operations and Maintenance;
    - Schedule 6 Conditions Applying to Aquatic Effects Monitoring; and
    - Schedule 7 Conditions Applying to Closure and Reclamation.

7. The Licensee shall comply with the **Surveillance Network Program**, which is annexed to and forms part of this Licence, and any amendments to the **Surveillance Network Program** as may be made from time to time by the Board.

8. The **Surveillance Network Program** and any compliance dates specified in this Licence may be amended at the discretion of the Board.

9. Meters, devices, or other such methods used for measuring the volumes of Waters used and Waste discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.

10. The Licensee shall post and maintain signs necessary to identify the stations of the **Surveillance Network Program** in a manner satisfactory to an Inspector.

11. Within 60 days following the effective date of this Licence, the Licensee shall submit to the Board for approval, a revised **Engagement Plan**. The Plan shall be in accordance with the Mackenzie Valley Land and Water Board's *Engagement Guidelines for Applicants and Holders of Land Use Permits and Water Licences,* June 2013, or subsequent editions.

12. The Licensee shall review the **Engagement Plan** annually and shall submit updates to the Board for approval at the following times:

    a) If the Licensee seeks changes to the Plan; and

    b) Upon the request of the Board.

13. In each year of the Licence term, the Licensee shall file an **Annual Report** with the Board. The report shall be filed no later than March 31st of the year following the calendar year reported. The report shall contain the information set out in Schedule 1, Item 1.

14. In conducting its activities under this Licence, the Licensee shall make best efforts to consider and incorporate any scientific information and traditional knowledge that is made available to the Licensee.

Part C: Conditions Applying to Security

1. The Licensee shall post and maintain a security deposit in an amount in accordance with Schedule 2, Item 1.

2. The Licensee shall submit an updated Reclamation liability estimate utilizing the current version of RECLAIM, or another method acceptable to the Board,

   a) If the Licensee seeks changes to the Closure and Reclamation Plan; and

   b) Upon request of the Board.

3. The amount of the security deposit required by Part C, Item 1 and Schedule 2, Item 1 may be revised by the Board in accordance with Part B Item 5 based on estimates of the current Reclamation liability referred to in Part C, Item 2 of this Licence or based on such other information as may be available to the Board.

4. If the amount of the security deposit is revised by the Board as described under Part C, Item 3, the Licensee shall post the revised amount with the Minister within 90 days of the Board giving notice of the revised amount.

5. The Licensee shall submit an updated Reclamation liability estimate after approval of the Closure and Reclamation Plan, using the current version of RECLAIM or another method acceptable to the Board.

Part D: Conditions Applying to Water Use

1. The Licensee shall obtain all Waters from the Mackenzie River, unless otherwise approved by the Board, for Central Processing Facility cooling, Waterflood, drilling, and any other industrial or maintenance uses associated with operations utilizing the approved Water Intake.

2. The Licensee may use Waters from the Surface Water Runoff Facilities for dust suppression only if those Waters meets the effluent quality criteria established in Part E, Item 1 of the **Surveillance Network Program** (Annex A), or as otherwise approved by the Board.

3. The annual quantity of Waters withdrawn for any purpose shall not exceed the limits set out in Schedule 3, Item 1.

4. The Licensee shall minimize the total amount of Waters used by the Project using appropriate water conservation methods, such as, but not limited to, the injection of Produced Water into the Norman Wells Proven Area oilfield reservoir.

Part E: Conditions Applying to Waste and Water Management

1. The Licensee shall manage Waters and Waste with the objective of minimizing the effects of Project activities on the quantity and quality of Waters in the Receiving Environment through the use of appropriate mitigation measures, monitoring, and follow-up actions.

Management Plans

2. Within six months following the effective date of this Licence, the Licensee shall submit to the Board for approval, a revised **Groundwater Management Plan**. The Plan shall be in accordance with the Mackenzie Valley Land and Water Board's *Standard Outline for Management Plans* and the requirements as set out in Schedule 4, Item 1. The Plan shall include the groundwater monitoring wells identified in Annex A, Part G.

3. The Licensee shall operate in accordance with the **Groundwater Management Plan**, once approved.

4. The Licensee shall review the **Groundwater Management Plan** annually and shall submit updates to the Plan to the Board for approval at the following times:

   a) If the Licensee seeks changes to the Plan; and

   b) Upon request of the Board.

5. The Licensee shall operate in accordance with the **Environmental Protection Plan**, once approved.

6. The Licensee shall review the **Environmental Protection Plan** annually and shall submit updates to the Plan to the Board for approval at the following times:

   a) If the Licensee seeks changes to the Plan; and

   b) Upon request of the Board.

7. The Licensee shall operate in accordance with the **Waste Management Plan**, once approved. The Plan shall be in accordance with the Mackenzie Valley Land and Water Board's *Guidelines for Developing a Waste Management Plan*, March 2011, or subsequent editions.

8. The Licensee shall review the **Waste Management Plan** annually and shall submit updates to the Plan to the Board for approval at the following times:

   a) If the Licensee seeks changes to the Plan; and

   b) Upon request of the Board.

9. The Licensee shall maintain a copy of the **Waste Management Plan** on-site in a readily available location to the satisfaction of an Inspector.

General Conditions

10. The Licensee shall not use any biocides where they may enter any Watercourse unless approved by the Board.

11. The Licensee shall ensure that any fuels, chemicals or Waste(s) associated with the Project do not enter any Waters, except in the manner described in the **Surveillance Network Program**.

Effluent Quality Criteria

12. The Licensee shall discharge water in a controlled manner designed to avoid flooding or erosion.

13. All sewage Waste(s) shall be disposed of at a licensed sewage disposal facility.

14. The Licensee shall not release hydrostatic test fluids to land and/or Waters. Hydrostatic test fluids shall be handled through the Licensee's injection processes.

15. No Waste(s) discharged at SNP Station S13L1-007 – 2 to the Mackenzie River shall be acutely lethal to fish nor shall it exceed the following effluent quality criteria:

Parameter	Maximum Average Concentration	Maximum Concentration of Any Grab Sample
Total Petroleum Hydrocarbons	3.0 mg/L	5.0 mg/L
Phenols	0.07 mg/L	0.14 mg/L
Chloride	250 mg/L	500 mg/L
Total Suspended Solids	N/A	N/A
Specific Conductivity	N/A	N/A

16. The Waste referred to in Part E Item 15 shall have a pH between 6.0 and 9.0

Part F: Conditions Applying to Operation and Maintenance

1. The Licensee shall drill all wells from within Impermeable-Lined Diked Areas.

2. The Licensee shall undertake any necessary annual maintenance required to preserve the structural integrity of the Artificial Islands, and where required on the Natural Islands.

3. The Licensee shall inspect the riverbeds, channels and banks of the Mackenzie River in the vicinity of the Flowline(s), and shall immediately notify the Inspector of any significant risk to infrastructure, public safety or the environment from erosion and take appropriate remedial action as required.

4. The Licensee shall operate in accordance with the **Flowline Integrity Management Plan**, once approved.

5. The Licensee shall review the **Flowline Integrity Management Plan** annually and shall submit updates to the Plan to the Board for approval at the following times:

   a) If the Licensee seeks changes to the Plan; and

   b) Upon request of the Board.

6. The Licensee shall submit an **Annual Flowline Integrity and Mackenzie River Breakup Report** no later than October 31st of the year being reported. The report shall contain the information set out in Schedule 5, Item 1.

Part G: Conditions Applying to Modifications

1. The Licensee may, without written consent from the Board, carry out Modification(s) to the water supply and Waste disposal facilities, bunkers, docks, bridges, flowlines, creek banks, and river banks provided that the Modification(s) are consistent with the terms of this Licence and the following requirements are met:

    a) the Licensee has provided the details of the proposed Modification(s) to the Board, in writing, at least 60 days prior to the commencement of the Modification(s);

    b) the Modification(s) does not place the Licensee in contravention of either the Licence, the Act or Federal, Territorial or Municipal Legislation;

    c) the Board has not, during the 60 days following notification of the proposed Modification(s), informed the Licensee that review of the proposal will require more than 60 days; and

    d) the Board has not rejected the proposed Modification(s).

2. Modification(s) for which all of the conditions referred to in Part G: Item 1, have not been met, can be carried out only with written approval from the Board.

3. The Licensee shall provide as-built plans and drawing of the Modification(s) referred to in this Licence within 90 days of completion of the Modification(s).

Part H: Conditions Applying to Contingency Planning

1. The Licensee shall operate in accordance with the **Spill Contingency Plan**, once approved. The Plan shall be in accordance with Indian and Northern Affairs Canada's *Guidelines for Spill Contingency Planning,* 2007, or subsequent editions.

2. The Licensee shall operate in accordance with the **Emergency Response Plan**, once approved.

3. The Licensee shall review the Management Plans referred to in Part H, Items 1 and 2 annually and shall submit updates to the Plans to the Board for approval at the following times:

   a) If the Licensee seeks changes to the Plans;

   b) Upon request of the Board.

4. The Licensee shall carry out field and communication exercises annually to demonstrate the capability to contain, recover and report spills under a variety of environmental conditions, such as early and late winter ice conditions, and moderate and high flow conditions.

5. The Licensee shall undertake further field and communication exercises at the request of the Board.

6. If, during the period of this Licence, a spill or an Unauthorized Discharge of Waste(s) occurs, or is foreseeable, the Licensee shall:

   a) Implement the **Spill Contingency Plan**;

   b) report the incident immediately via the 24 Hour NWT Spill Reporting Line (867) 920-8130 in accordance with the instructions contained in the Spill Report Form NWT 1752/0593 or subsequent editions;

   c) report each spill and Unauthorized Discharge of Waste to the Board and an Inspector within 24 hours; and

   d) within 30 days of an Unauthorized Discharge or an incident reported under Part H, Item 6b), the Licensee shall submit a detailed report to the Board and an Inspector. The report shall include descriptions of causes, response actions, and any changes to procedures to prevent similar occurrences in the future.

7. All spills and Unauthorized Discharges of water or Waste shall be cleaned up and the affected area reclaimed to the satisfaction of an Inspector.

Part I: Conditions Applying to Aquatic Effects Monitoring

1. The Licensee shall submit within one year of the effective date of this Licence an Aquatic Effects Monitoring Program (AEMP) Design Plan for approval by the Board. **The Aquatic Effects Monitoring Program Design Plan** should be developed in accordance with AANDC's "Guidelines for Designing and Implementing Aquatic Effects Monitoring Programs for Development Projects in the NWT" and shall satisfy the requirements of Schedule 6, Item 1.

2. The Licensee shall adhere to the approved **Aquatic Effects Monitoring Program Design Plan** and shall annually review the Plan and make any necessary revisions to reflect changes in operations, technology, chemicals or fuels, or as directed by the Board. Revisions to the Plan shall be submitted to the Board for approval.

3. The Licensee shall submit an **AEMP Annual Report** to the Board for approval on or before April 30, 2017 and each year thereafter.

Part J: Conditions Applying to Closure and Reclamation

1. The Licensee shall submit within one year of the Licence being issued a **Closure and Reclamation Plan** for approval by the Board.

2. The Licensee shall adhere to the approved **Closure and Reclamation Plan** and shall annually review the Plan and make any necessary revisions to reflect changes in operations, technology, chemicals or fuels, or as directed by the Board. Revisions to the Plan shall be submitted to the Board for approval.

3. The Licensee shall carry out Progressive Reclamation of areas affected by licensed operations as soon as is reasonably practicable.

4. The Licensee shall provide an **Annual Closure and Reclamation Plan Progress Report** no later than May 31st following the calendar year being reported. The report shall contain the information set out in Schedule 7, Item 1.

5. A minimum of 24 months prior to the end of Commercial Operations, the Licensee shall submit a **Final Closure and Reclamation Plan** to the Board for approval.

Signed the 4th day of December, 2014 on behalf of the Sahtu Land and Water Board

Witness

Mr. Larry Wallace, Chair
Sahtu Land and Water Board

Annex A: Surveillance Network Program (SNP)

SAHTU LAND AND WATER BOARD

LICENSEE: IMPERIAL OIL RESOURCES N.W.T. LIMITED

LICENCE NUMBER: S13L1-007

EFFECTIVE DATE OF LICENCE ISSUANCE:

A. Location of Surface Water Monitoring Stations

Station	Status	Description	Location
S13L1-007 -1	Active	Central Processing Facility Intake water from the Mackenzie River.	W126°53.053' N65°17.230'
S13L1-007 - 2	Active	Central Processing Facility discharge return line to the Mackenzie River.	W126°53.093' N65°17.196'

B. Quality Assurance and Quality Control

1. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of American Public Health Association's (APHA) *Standard Methods for the Examination of Water and Wastewater*, or by such other methods approved by the Analyst.

2. All analyses shall be performed in a laboratory approved by the Analyst.

3. The Licensee shall review the **Quality Assurance and Quality Control Manual** annually and shall revise the manual as necessary to reflect changes in field and laboratory quality control and quality assurance testing, procedures and technology. The proposed revision(s) shall be submitted to the Board for approval. The manual shall be implemented as approved by the Analyst.

4. The Licensee may, upon notifying the Inspector, clean the settling pond at the Central Processing Facility according to the CPF Settling Pond Cleaning Procedure, approved by the Board and amended from time to time.

C. Sampling and Analysis Requirements for Surface Water SNP Stations

1. A Single Composite Sample of water at SNP Station S13L1-007 – 1 shall be sampled and analyzed for the following parameters and frequencies:

Parameter	Sampling Frequency
Phenols	Once per week
Total Petroleum Hydrocarbons	Once per week
Total Suspended Solids	Twice per week
pH	Twice per week
Specific Conductivity	Twice per week

2. A Representative Grab Sample of Water(s) shall be collected at SNP station S13L1-007 - 1 quarterly (four samples throughout the year) and analyzed for the following parameters:

Parameters		
pH	Chloride	Total Alkalinity
Sodium	Calcium	Specific Conductivity
Potassium	Magnesium	Total Suspended Solids
Sulphate	Phenols	Total Dissolved Solids
Total Petroleum Hydrocarbons	Total Phosphorus	Total Hardness

3. A Single Composite Sample of water at SNP Station S13L1-007 – 2 shall be sampled and analyzed for the following parameters and frequencies:

Parameter	Sampling Frequency
Phenols	Once per week
Total Petroleum Hydrocarbons	Once per week
Total Suspended Solids	Twice per week
pH	Twice per week
Specific Conductivity	Twice per week

4. A daily Grab Sample of water at SNP Station S13L1-007 – 2 shall be field analyzed for Total Residual Chlorine.

5. No Wastes discharged at SNP Station S13L1-007 – 2 to the Mackenzie River shall exceed the effluent criteria set out in Part E, Item 15 of the Licence.

6. A Representative Grab Sample of Water(s) shall be collected at SNP Station S13L1-007 – 2 quarterly (four samples throughout the year at the same time as Acute Lethality testing) and analyzed for the following parameters:

Parameters		
pH	Chloride	Total Alkalinity
Sodium	Calcium	Specific Conductivity

Potassium	Magnesium	Total Suspended Solids
Sulphate	Phenols	Total Dissolved Solids
Total Petroleum Hydrocarbons	Total Phosphorus	Total Hardness

7. The Licensee shall determine the Acute Lethality of the Waste Waters at SNP station S13L1-007 - 2 and performed in a quarterly (four samples throughout the year) time frequency.

8. The Licensee shall provide a 28-day average concentration of the parameters outlined in SNP Part C, Items 3 and 4. The average concentration shall be reported in accordance with SNP Part D, Item 1.

D. Reports

1. The Licensee shall within 30 days following the month being reported, submit to the Board, all data and information required by the SNP including the results of the approved **Quality Assurance Plan**.

E. Sampling and Analysis Requirements for Surface Water Run-Off Facilities

1. A Representative Grab Sample and analysis of all Waters collected in the Surface Water Run-Off Facilities (listed in section F of the Surveillance Network Program) discharged to lands and/or Waters, and/or to be used for dust suppressant on roads, shall be obtained prior to Discharge.

    a) Water to be Discharged from Surface Water Run-Off Facilities (listed as Category A in section F of the Surveillance Network Program) shall be analyzed for the following prior to Discharge and weekly during Discharge:

Parameter	Guideline
Visible oil sheen on the water	Presence of
Chlorides (Field Test)	< 500 mg/L
pH (Field Test)	6.0 – 9.0

    b) Water to be Discharged from Surface Water Run-Off Facilities (listed as Category B in section F of the Surveillance Network Program) shall be analyzed for the following prior to Discharge and weekly during Discharge:

Parameter	Guideline
Total Petroleum Hydrocarbons	5.0 mg/L
Phenols	0.14 mg/L
pH	6.0 -9.0
Chlorides	< 500 mg/L
Total Suspended Solids	N/A
Total Dissolved Solids	N/A
Specific Conductivity	N/A

c) Water shall not be released from Surface Water Run-off Facilities if there is exceedance(s) of criteria in 1(a) and 1(b) above without consulting the Board and Inspector. The licensee shall make every effort to investigate exceedance(s) and treat the water before Discharge.

d) When discharging water volumes greater than 10 m^3, the Discharge shall be monitored by obtaining a Representative Grab Sample(s) and conducting subsequent analyses as outlined in SNP Part E, Items 1 (a) or (b). Samples shall be taken before, in the middle, and the end of the Discharge period. For water volumes less than 10 m^3, a single Representative Grab Sample shall be collected and analyzed before the Discharge begins.

e) An estimate of the total volume of water discharged shall be recorded for each Discharge.

f) Water(s) collected in any area associated with Imperial Oil's Norman Wells operations and facilities not listed in Part F shall be sampled and analyzed as per SNP Part E, Items 1 (b-d), as required.

F. Surface Water Run-off Facility Categories

This Section is intended to outline any area associated with Imperial Oil's Norman Wells operations and facilities that may be used to collect surface water, which will ultimately require Discharge to land(s) and/or Water(s).

Surface Water Run-Off Facilities include impound basins and areas, excavations, bunkers, bermed areas, and associated ditches provided for the collection, storage, and Discharge of Surface Water Run-off from Imperial Oil's Norman Wells operations and facilities. Figure 1 provides a colour coded map of the different Surface Water Run-Off Facilities.

Category A – includes excavations (in areas where there are no known historical impacts), bunkers, bermed areas, and associated ditches.

Category B – includes;

Location	**Coordinates**
CPF Impound Area	W126°53.121’ N65°17.132’
LT 11 Impound Basin	W126°51.722’ N65°17.027’
Refinery Impound Basin	W126°50.817’ N65°16.888’
Refinery Water Flood Basin	W126°50.539’ N65°16.938’
Refinery Tank Farm	
Field Services Storage Yard	
Biocell	
Capped Sumps	
Excavations (in areas where there is known historical impacts)	
Or any area where the Surface Water Run-Off from Category A does not meet the requirements outlined in SNP Part E: 1(a).	

Map of Surface Water Monitoring Stations and Surface Water Run-Off Facilities on Figure 1

G. Groundwater Monitoring Wells

Station	Status	Description	Location
CPF 97-7-5	1997	Located between Central Processing Facility and Bosworth Creek.	W126°877.462’ N65°286.553’
CPF-98-8-3	1998	Located between Central Processing Facility and the Mackenzie River.	W126°885.929’ N65°286.553’
WSY-97-1-5	1997	Closest well located between the Well Service/Warehouse Yard and Bosworth Creek	W126°873.608’ N65°288.127’
ARB-12-3-3	2012	Closest groundwater monitoring well to the biocell	W126°86.037’ N65°28.759’

C38-08-1-4	2008	Located between known previous well issues (C36x) and the Mackenzie River	W126°856.857’ N65°283.478’
TF-03-12-3	2003	Located between the Tank Farm and the Mackenzie River and downgradient from a known hydrocarbons source	W126°846.446’ N65°282.365’
MTF-97-1-5	1997	Located between the Tank Farm and the town of Norman Wells	W126°838.576’ N65°283.627’
BIS-97-1-3	1997	Located between Bear Island sump #5 (near P37X) and the Mackenzie River	W126°895.531’ N65°257.705’
BI-13-3-4-5	2013	Located near Bear Island sump #6 (near M50X) and the Mackenzie River	W126°86.266’ N65°25.581’
BIBG-12-1-7	2012	Located at the western edge of the development on Bear Island and the Mackenzie River	W126°91.713’ N65°25.336’
GIBG-10-2-3	2010	Located between well pads on Goose Island and the Mackenzie River	W126°94.244’ N65°26.778’
GIQ8-10-2-4	2010	Located between the fuel storage and handling area on Goose Island and the Mackenzie River	W126°959.796’ N65°274.052’
Contingency Wells			
MEBG-10-1-3	2010	Central Location on the mainland. Located between the Mainland Sumps and the Mackenzie River	W126°857.963’ N65°286.081’
BI-13-1-4	2013	Located near Bear Island sump #6 (near M50X) and the Mackenzie River	W126°85.955’ N65°25.432’
GIP11-09-1-4	2009	Located between a sump and the Mackenzie River on Goose Island	W126°94.889’ N65°27.444’

Map of Groundwater-SNP Stations on Figure 2[1]

1. Sampling of Groundwater monitoring wells shall be conducted twice a year during the months of May to September.

2. The Groundwater monitoring wells selected shall be sampled for the following parameters:

Parameter	Frequency
Chloride	Twice per year
Benzene Toluene Ethylbenzene and Xylenes (BTEX)	Twice per year
ICP-MS Metal Scan (Total)[1]	Twice per year
Major Ions[2]	Twice per year

[1] IORL, Norman Wells Operation – Groundwater Management Plan, September 2014, Appendix C, Groundwater Well Locations, pg. 43.

H. Flow, Volume and Temperature Measurement Requirements

1. The following qualities shall be measured and recorded daily in cubic metres;

   a) the quantity of fresh Water pumped from the Mackenzie River;

   b) the quantity of Waste water returned to the Mackenzie River; and

   c) the quantity of Produced Water and fresh water injected into the oilfield reservoir;

2. The water temperatures shall be measured daily at SNP station S03L1-01 and S03L1-02 in degrees Celsius.

[1]ICP-MS Metal Scan shall include at a minimum, the following regulated parameters:
Aluminum, Cadmium, Chromium, Copper, Lead, Nickel, Zinc.
Once Annually the ICP shall also include the following monitored parameters:
Manganese, Molybdenum, Selenium, Strontium, Uranium.
Total metals shall be analyzed unfiltered and dissolved using a 0.45 micron filter.

[2]Major ions include the following parameters:
Calcium, Chloride, Sulphate, Magnesium, Fluoride, Potassium, Alkalinity, Hardness, Total Dissolved Solids.

Signed the 4th day of December, 2014 on behalf of the Sahtu Land and Water Board

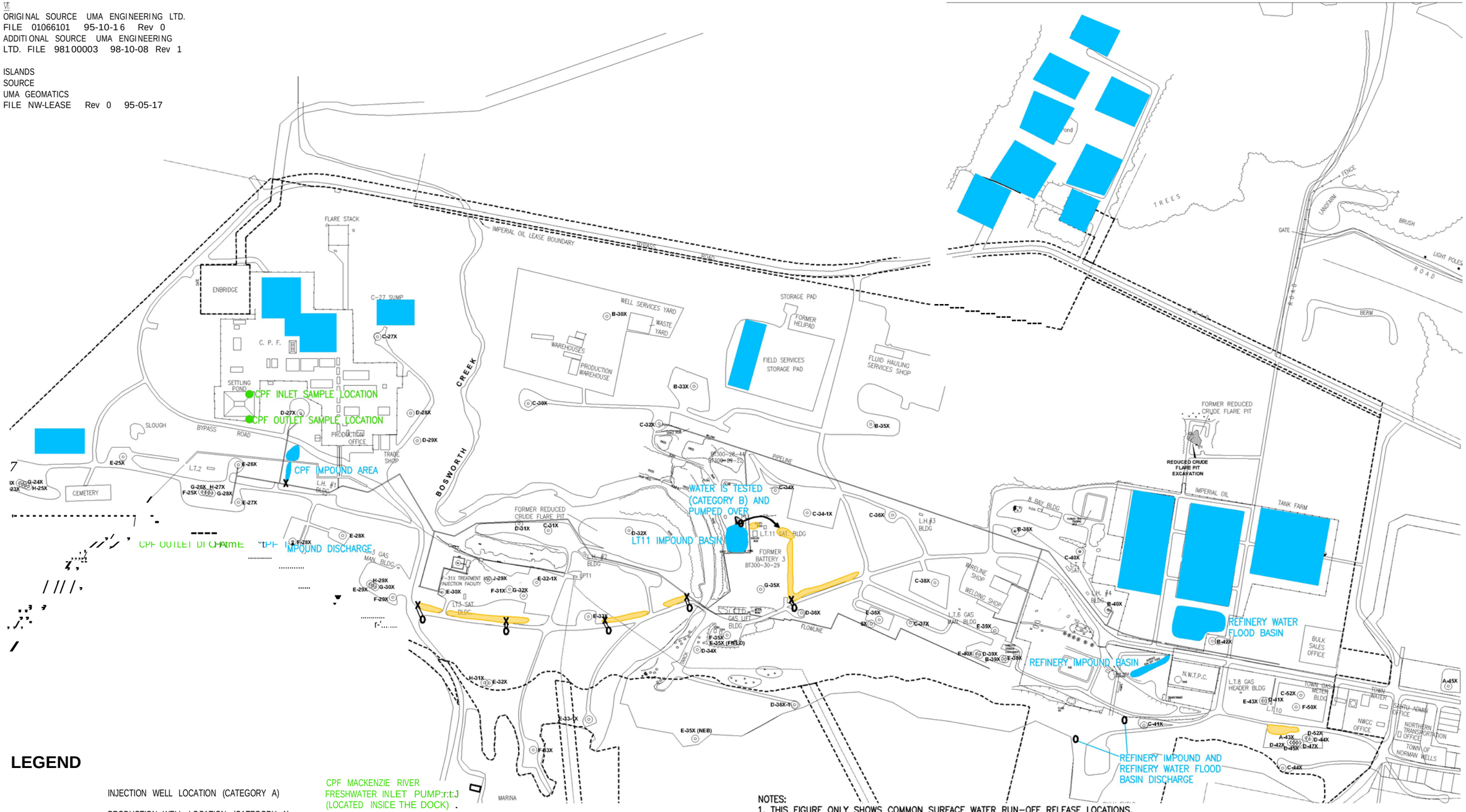
Witness

Mr. Larry Wallace, Chair
Sahtu Land and Water Board

VI

ORIGINAL SOURCE UMA ENGINEERING LTD.
FILE 01066101 95-10-16 Rev 0
ADDITIONAL SOURCE UMA ENGINEERING
LTD. FILE 98100003 98-10-08 Rev 1

ISLANDS
SOURCE
UMA GEOMATICS
FILE NW-LEASE Rev 0 95-05-17



LEGEND

- INJECTION WELL LOCATION (CATEGORY A)
- PRODUCTION WELL LOCATION (CATEGORY A)
- IMPERIAL OIL LEASE BOUNDARY
- FLOWLINE R/W
- UTILIDOR LOCATION
- CPF INLET AND OUTLET SAMPLE LOCATION
- X CULVERT GATE/PUMP LOCATION
- 0 END OF PIPE/CULVERT/PUMP DISCHARGE LOCATION
- CATEGORY A SURFACE WATER RUN-OFF COLLECTION LOCATIONS
- CATEGORY B SURFACE WATER RUN-OFF COLLECTION LOCATIONS

NOTES:
1. THIS FIGURE ONLY SHOWS COMMON SURFACE WATER RUN-OFF RELEASE LOCATIONS.
2. ALL INJECTION AND PRODUCTION WELLS FOR THE ENTIRE SITE FALL UNDER CATEGORY A.

UTM NAD 27 ZONE 9

0 75 150 225 300m

SCALE 1:7,500

Infrastructure & Environment

IMPERIAL OIL RESOURCES
NORMAN WELLS RENEWAL APPLICATION FOR WATER LICENCE

SNP INLET, OUTLET AND SURFACE WATER RUN-OFF COLLECTION LOCATIONS

30-JAN-14	date	B.M.F.	edited by	M.Y.T.	drawn by	app by

PROJECT NUMBER: 307074-01618-1500

FIGURE: 1.0

PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

WorleyParsons
resources & energy

Schedules for Type A Water Licence S13L1-007

Imperial Oil Resources Limited - Norman Wells Operation

Schedule 1 – Annual Report
Schedule 2 – Security Requirements
Schedule 3 – Water Use
Schedule 4 – Groundwater Management Plan
Schedule 5 – Flowline Integrity and Mackenzie River Breakup Report
Schedule 6 – AEMP Design Plan
Schedule 7 – Closure and Reclamation Report
Figure 1 – Map of Surface Water SNP Locations and Surface Water Run-off Facilities
Figure 2 – Map of Active Groundwater SNP Stations

Schedule 1

Part B: General Conditions

1. The Licensee's Annual Report required by Part B: Item 11 of the Licence shall contain the following information:

   a) the monthly and annual quantities, in cubic metres, of fresh Water(s) obtained from all sources;

   b) the monthly and annual quantities, in cubic metres, of each and all Waste discharged;

   c) the monthly and annual quantities, in cubic metres, of Waste discharged to the Mackenzie River at SNP Station S13L1-007 – 2;

   d) the monthly and annual quantities, in cubic metres, of fresh Water(s) and Produced Water injected to the Waterflood;

   e) the monthly and annual quantities, in cubic metres, of Water(s) contained and discharged from the Surface Water Run-Off Facilities;

   f) the monthly and annual quantities, in cubic metres, of Produced Water recovered from the oilfield reservoir;

   g) tabular summaries of all data generated under the **Surveillance Network Program** (SNP);

   h) a list of unauthorized discharges, identification of waterbodies affected and the current status of mitigation measures;

   i) an annual drilling schedule for the upcoming year to the Board with locations of each well;

   j) the annual amounts in cubic metres of Waste(s) generated from all drilling activities;

   k) a summary of the measures taken to minimize net Water(s) withdrawals from all sources as required by Part D: Item 4 of the Licence;

   l) details on the handling, storage, treatment and disposal of all Waste(s) generated by project activities;

m) a review of spill training and communication exercises of the previous year, including the successes and failures, as well as recommendations for improvement;

n) a general schedule for any planned oil spill exercises for the following year;

o) a summary of any Modification(s) and/or major maintenance work carried out as per Part G of the Licence;

p) any other details on Water(s) use or Waste(s) disposal requested by the Board no later than March 31st of the year following the calendar year reported; and

q) a summary of all spills and Unauthorized Discharges and follow-up actions taken that occurred during the previous calendar year.

Schedule 2

Part C: Conditions Applying to Security

1. The Licensee shall post and maintain a security deposit of CDN $178,883,606.00 ($180,883,606.00 less $2,000,000.00 existing security) for the Imperial Oil Resources Norman Wells Operation, in accordance with Section 72.11 of the Act and Part C of this Licence.

Schedule 3

Part D: Conditions Applying to Water Use

1. The Licensee shall not exceed the total allowable Water(s) withdrawal limit of 3,500,000 cubic metres per year, and shall not exceed the withdrawal rate of 16,000 cubic metres per day.

Schedule 4

Part E: Conditions Applying to Waste and Water Management

1. The Licensee's **Groundwater Management Plan** shall contain the following information:

    a) an assessment of available baseline information;

    b) a plan to collect additional information necessary to establish baseline conditions for Groundwater monitoring wells;

    c) proposed criteria for all sampled parameters that indicate contamination;

    d) identification of Groundwater monitoring wells that show contamination;

    e) identification of Groundwater monitoring wells that are indicating a trend towards contamination before end of operations; and

    f) a detailed response plan to address contaminated and potentially contaminated Groundwater.

Schedule 5

Part F: Conditions Applying to Operation and Maintenance

1. The Licensee's Annual **Flowline Integrity and Mackenzie River Breakup Report** required by Part F, Item 6 of the Licence shall contain the following information:

    a) The results of inspections of the physical condition of each Artificial and Natural Island, including channel erosion, island scour holes and erosion, Flowline landfalls, the condition of rip rap and the following information:

        i. locations, depth, and volume of channel scour in the vicinity of any Flowline(s);

        ii. locations and magnitude of Artificial Island slope erosion;

        iii. locations and severity of Artificial Island rip rap disturbance;

        iv. structural integrity of the Artificial Islands, and other related structures; and

        v. structural integrity of the Natural Islands where it is applicable to project activities.

    b) The dates and results of Flowline(s) and fuel storage tank integrity tests; and

    c) Details on necessary repair and maintenance work along with a schedule for completing such work prior to the following spring Mackenzie River Breakup period.

Schedule 6

Part I: Conditions Applying to Aquatic Effects Monitoring

1. Within 90 days after the effective date of the Licence, the Licensee shall develop a **Special Effects Study** which addresses the following:

    a) validation that visible sheen is an effective indicator of the lack of hydrocarbons; and

    b) to establish any threat posed by metals and ions in surface or groundwater by monitoring in the Mackenzie River, upstream of the facility and at the groundwater SNP sites listed in Annex A, Part G, for a period of two years (minimum 12 samples), and submit to the Board for approval.

2. Upon Board approval of the **Special Effects Study** the Licensee shall submit a report to the Board with recommendations on the need for EQC based on the results of the monitoring and trend analysis three months following end of sampling.

Schedule 7

Part J: Conditions Applying to Closure and Reclamation

1. The Licensee's **Annual Closure and Reclamation Report** required by Part J, Item 4 of the Licence shall contain the following information, if applicable to closure and Reclamation work:

   a) a summary of any closure and Reclamation work completed during the year and an outline of any work anticipated for the next year;

   b) activities related to the Water Intake facilities and Water(s) distribution infrastructure;

   c) activities related to Waste disposal sites and facilities;

   d) activities related to the petroleum, chemical, and/or hazardous Waste storage areas;

   e) details related to the restoration of natural drainage and stream banks related to Project activities;

   f) details related to the extent of soil and Groundwater impacts and proposed Remediation;

   g) activities related to the oil collection system, especially any Flowline(s);

   h) activities related to Surface Water Run-Off Facilities;

   i) details on any site affected by unauthorized discharges and/or releases;

   j) activities related to Waterflood facilities and/or infrastructure;

   k) activities related to the Central Processing Facility;

   l) activities related to the Artificial and Natural Islands;

   m) activities related to the former refinery area and associated infrastructure;

   n) activities related to the Groundwater Treatment Facilities;

   o) details on any other facility or infrastructure which could potentially impact land and/or Water(s);

   p) cataloguing of all closed wells and sumps, identifying the status of each, including any planned mitigation measures;

   q) activities related to revegetation; and

   r) post-closure monitoring plans for any facility and/or infrastructure.

Appendix 2
List of Acronyms, Abbreviations and Definitions

Table A2-1 List of Acronyms, Abbreviations and Definitions

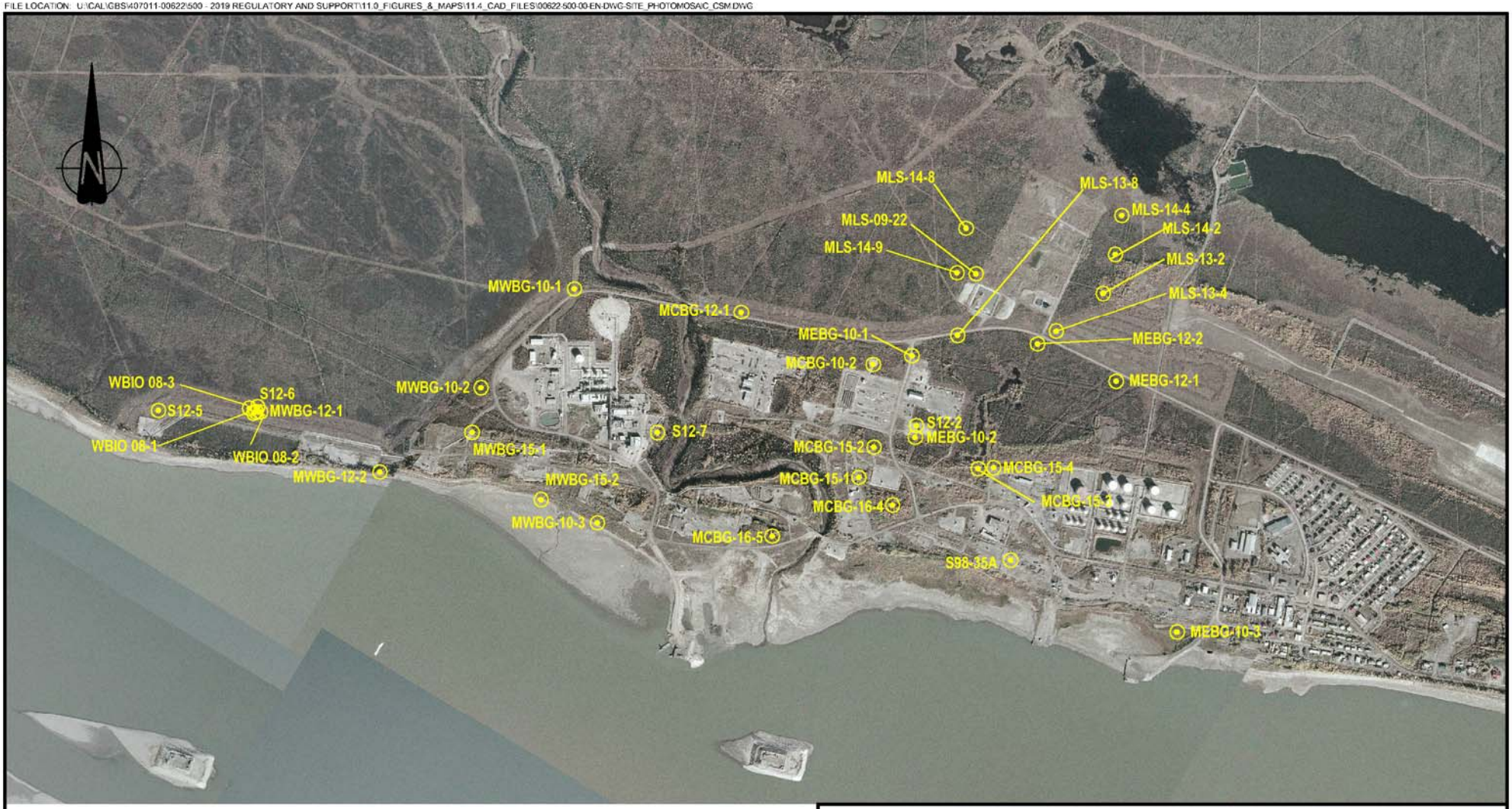
Acronym / Abbreviation	Definition
Al	Aluminum
As	Arsenic
Attenuation mechanisms	Several mechanisms tend to slow the forward migration of dissolved phase constituents (hydrocarbon compounds, metals, anions and cations, etc.) compared to water molecules as they migrate through porous soils or bedrock. Specifically, these mechanisms include intrinsic biodegradation, sorption on hydrophobic or charged particle surfaces, hydrodynamic dispersion, and molecular diffusion. Each dissolved constituent will experience a different degree of attenuation or retardation as it migrates, depending on the geochemical properties of both the specific chemical parameter and the porous media through which it is travelling.
Ba	Barium
Be	Beryllium
Bgs	Below-ground surface
BIT	Bear Island terminal
BTEX	benzene, toluene, ethylbenzene, and xylenes
BV	Bureau Veritas Canada, the analytical laboratory for soil and groundwater samples
CCME	Canadian Council of Ministers of the Environment
Cd	Cadmium
Co	Cobalt
Cr, Cr^{6+}	Chromium and Hexavalent Chromium
Cu	Copper
C & R	Closure and Reclamation program
Dissolved phase hydrocarbon	Some of the more soluble compounds within a hydrocarbon LNAPL will tend to dissolve into groundwater. These typically include BTEX compounds, PHC F1, and PHC F2 fractions.
DPE	Dual phase extraction, an in-situ remediation method involving a combination of groundwater extraction with pumps and application of high vacuum to remove vapour phase hydrocarbon.
Drivepoint	A shallow groundwater monitoring well that is installed without a drill rig, using a post pounder to push the well 1 to 2 m deep into soft ground, often near a muskeg or riverbank.
dS/m	deci-Siemens per metre

Acronym / Abbreviation	Definition
EC	electrical conductivity
EM	Electromagnetic, referring to geophysical surveys
ERT	Electrical resistance tomography, a type of geophysical survey
ESA	Environmental Site Assessment
E & PS	Imperial Environmental and Property Solutions
Free phase hydrocarbon	Also defined as LNAPL. This is hydrocarbon liquid that forms a separate oily phase, which typically floats above groundwater. It may originate from either anthropogenic or natural sources.
FTA	Fire Training Area
FWAL	Freshwater Aquatic Life
GIT	Goose Island terminal
Hg	Mercury
IES	Imperial Environmental Services
IOR	Imperial Oil Resources
kg	Kilogram
L	Litre
LNAPL	Light non-aqueous phase liquid
LT	Land terminal
M or m	Metres
µg/L	micrograms per litre
mbgs	metres below ground surface
mg/L	milligrams per litre
mg/kg	milligrams per kilogram
Mo	Molybdenum
MPE	Multiphase extraction, an in-situ remediation method involving application of high vacuum to remove vapour phase and liquid hydrocarbons simultaneously through the same intake tube
Ni	Nickel
NT	Northwest Territories

Acronym / Abbreviation	Definition
OVA	Organic vapour analyzer
Pb	Lead
PAHs	Polycyclic Aromatic Hydrocarbons
PHC F1	CCME Petroleum hydrocarbon fraction F1, covering the range from C_6 to C_{10}
PHC F2	CCME Petroleum hydrocarbon fraction F2, covering the range from $C_{>10}$ to C_{16}
PHC F3	CCME Petroleum hydrocarbon fraction F3, covering the range from $C_{>16}$ to C_{34}
PHC F4	CCME Petroleum hydrocarbon fraction F4, covering the range from $C_{>34}$ to C_{50+}
PPM or ppm	parts per million
RCFP	Reduced Crude Flare Pit
SAR	Sodium adsorption ratio
Se	Selenium
SLWB	Sahtu Land and Water Board
Subsidence Area	An area of collapsed ground created by uneven settling, sometimes associated with buried sumps
SVE	Soil vapour extraction an in-situ remediation method involving application of vacuum to remove vapour phase hydrocarbon
TDS	Total dissolved solids
Tl	Thallium
TEH	Total extractable hydrocarbon, an analysis for semi-volatile and non-volatile hydrocarbon fractions typically covering the ranges C_{11} to C_{30} or C_{11} to C_{60}
TPH	Total purgeable hydrocarbon, an analysis for volatile hydrocarbon fraction typically covering the range from C_3 to C_{12}
V	Vanadium
Zn	Zinc

Appendix 3
Soil and Groundwater Geochemical Background Conditions

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-SITE_PHOTOMOSAIC_CSM.DWG



LEGEND

- BACKGROUND SOIL/BEDROCK SAMPLE LOCATION

NAD27 UTM ZONE 9N

m 0 500 1000 m

1:20000

IMPERIAL

APPENDIX 3 - BACKGROUND GEOCHEMICAL STATISTICAL SUMMARY

NORMAN WELLS, NT

BACKGROUND SOIL/BEDROCK SAMPLING LOCATIONS (MAINLAND)

Date:	Drawn by:	Edited by:	App'd by:
01-MAY-19	MYT	B.M.F.	

Advisian
Worley Group

WorleyParsons Project No.
407011-00622-500

FIG No 1 | REV A

"This drawing is prepared for the use of our customer as specified in the accompanying report.
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PLOT DATE & TIME: 2/5/2019 11:09:24 AM USER NAME: blair.fink
SAVE DATE & TIME: 2/5/2019 11:09:05 AM ISSUING OFFICE: eCAD

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-SITE_PHOTOMOSAIC_CSM.DWG

LEGEND

- BACKGROUND SOIL/BEDROCK SAMPLE LOCATION

NAD27 UTM ZONE 9N

m 0 500 1000 2500 m

1:50000

IMPERIAL

APPENDIX 3 - BACKGROUND GEOCHEMICAL STATISTICAL SUMMARY

NORMAN WELLS, NT

BACKGROUND SOIL/BEDROCK SAMPLING LOCATIONS (ALL AREAS)

Date:	01-MAY-19	Drawn by:	MYT	Edited by:	B.M.F.	App'd by:	

Advisian
Worley Group

WorleyParsons Project No.
407011-00622-500

FIG No 2 REV A

"This drawing is prepared for the use of our customer as specified in the accompanying report.
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SAVE DATE & TIME: 2/5/2019 11:09:05 AM ISSUING OFFICE: eCAD

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-SITE_PHOTOMOSAIC_CSM.DWG

LEGEND

- BACKGROUND MONITORING WELL LOCATION

NAD27 UTM ZONE 9N

m 0 500 1000 m

1:20000

IMPERIAL

APPENDIX 3 - BACKGROUND GEOCHEMICAL STATISTICAL SUMMARY

NORMAN WELLS, NT

BACKGROUND MONITORING WELL LOCATIONS (MAINLAND)

Date:	Drawn by:	Edited by:	App'd by:
01-MAY-19	MYT	B.M.F.	

Advisian Worley Group

WorleyParsons Project No. 407011-00622-500

FIG No 3 | REV A

"This drawing is prepared for the use of our customer as specified in the accompanying report. WorleyParsons Canada Services Ltd. assumes no liability to any other party for any representations contained in this drawing."

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SAVE DATE & TIME: 2/5/2019 11:09:05 AM ISSUING OFFICE: eCAD

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-SITE_PHOTOMOSAIC_CSM.DWG

LEGEND

- BACKGROUND MONITORING WELL LOCATION

NAD27 UTM ZONE 9N

m 0 500 1000 1500 m

1:25000

IMPERIAL

APPENDIX 3 - BACKGROUND GEOCHEMICAL STATISTICAL SUMMARY

NORMAN WELLS, NT

BACKGROUND MONITORING WELL LOCATIONS (ISLANDS)

Date:	Drawn by:	Edited by:	App'd by:
01-MAY-19	MYT	B.M.F.	

Advisian
Worley Group

WorleyParsons Project No.
407011-00622-500

FIG No 4 | REV A

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PLOT DATE & TIME: 2/5/2019 11:13:11 AM USER NAME: blair.fink
SAVE DATE & TIME: 2/5/2019 11:09:05 AM ISSUING OFFICE: eCAD

Appendix 4
Areas of Potential Environmental Concern (APECs)

Advisian
Worley Group

Table App.4-1
Areas of Proven or Potential Environmental Concern (APECs)

Site Area	APEC #	Description	Contaminant Source(s)	Closest Infrastructure / Reference Point	Environmental Concerns	Information Source	Investigation Work Completed to Date	Current Status (Potential / Proven)	Risk to Receptor
Mainland West									
	MW-1	Cemetery Sump	Buried drilling waste	NW of Town Cemetery	Hydrocarbons and salts in soil	Interviews/Phase II ESA/Aerial Photographs	Phase I & II ESAs, geophysical surveys, capping program, on-going monitoring	Proven, delineated, risk assessment complete	Low
	MW-2	Former Battery #1/LH #1	Leaks and spills from former infrastructure, tanks	East of LH #1	Hydrocarbons, metals, salts. May be material buried on east side of the former battery. Inert debris.	Interviews/Aerial Photographs	Phase I & II ESAs	Proven, surface hydrocarbons in soil	Low
	MW-3	F-28X Wellsite/Former Flare Pits (2), Former Pit (1)	Wellhead casing vent flow, flare pit, possible flowline leak in northern area	F-28X wellsite	Hydrocarbons and metals in soil; chloride in groundwater	Interviews/Aerial Photographs/Phase II ESA	Phase I & II ESAs, geophysical surveys, on-going monitoring	Proven, partially delineated	High
	MW-4	Former Location of Multiple tanks and pits	Possible historical leaks/spills from tanks, buried waste in pits	E of LT #3	Buried debris, metals, hydrocarbons	Aerial photographs	Phase I & II ESAs	Partially investigated, minor F2 issue identified	Low
	MW-5	Old landfill/dump site	Buried debris, leaks from buried tanks/equipment	South of E-29X/G-30X wellsites	Hydrocarbons, metals, inert debris. There may be a small boiler buried here.	Interviews	Geophysical surveys, soil and groundwater sampling	Proven, partially delineated debris. Hydrocarbon soil impact may be partially natural seeps.	Low
	MW-6	Historical Laydown/Camp Area	Possible leaks/spills from former infrastructure, equipment	West of CPF	Hydrocarbons, salts, metals	Aerial photographs	Phase I ESA	Potential. No characterization or delineation activities in the area to date.	Low
	MW-7	CPF	Multiple sources from leaks, drips, spills, tanks, flowlines	Current CPF site	Hydrocarbons, salts and metals in soil. Hydrocarbons in groundwater - particularly near flare stack area	Phase II ESA	Phase II ESA	Proven, limited investigation. Further delineation will be required.	Medium
	MW-8	CPF Flare Stack	Flare stack carry-over, leaks from above ground flare line	NE of CPF	Hydrocarbons in soil and groundwater	Phase II ESA	Phase II ESA	Proven, limited investigation. Further delineation will be required.	High
	MW-9	C-27X Sump	Buried drilling waste	C-27X wellsite	Hydrocarbons, salts, metals and buried drill muds/fluids	Interviews/Phase II ESA/Aerial Photographs	Phase I & II ESAs, geophysical surveys, backfilled subsidence area, on-going monitoring	Proven, soil partially delineated. Groundwater impacts not fully delineated to the north	Low
	MW-10	C-27X Line Break / Wellhead	Wellhead leaks, released fluids from line break	C-27X wellsite	Hydrocarbons, salts	On-site inspection, previous spills reported	Phase II ESA, wellhead abandonment	Proven, limited investigation. Further delineation will be required.	Low
	MW-11	E-27X Well site	Wellhead leaks, potential spill of workover fluids	E-27X Well	Hydrocarbons and salts	Phase II ESA	Phase II ESA, wellhead abandonment	Proven, investigation, not delineated	Low
	MW-12	Historical Excavation by Drill Rig Site	Potential drilling fluids/solids disposed in old pit	N of H-21X wellsite	Hydrocarbons, salts	Aerial photographs	Phase I ESA	Potential. Not investigated	Low
	MW-13	Former AST and Pit West of Cemetery Sump	Potential leaks/spills from AST, buried fluids/solids in pit	W of Cemetery Sump	Hydrocarbons, salts	Aerial photographs	Phase I ESA, Phase II ESA	Investigated, no issues identified to date	Medium
	MW-14	Historical Tank Farm	Potential leaks/spills from ASTs	NW of G-28X wellsite	Hydrocarbons, salts	Aerial photographs	Phase I ESA	Potential. Not investigated	Low
	MW-15	Historical AST and Pit	Potential leaks/spills from AST, buried fluids/solids in pit	NW of G-30X wellsite	Hydrocarbons, salts	Aerial photographs	Phase I ESA	Potential. Not investigated	Low

Table App.4-1
Areas of Proven or Potential Environmental Concern (APECs)

Site Area	APEC #	Description	Contaminant Source(s)	Closest Infrastructure / Reference Point	Environmental Concerns	Information Source	Investigation Work Completed to Date	Current Status (Potential / Proven)	Risk to Receptor
Mainland West (cont'd)	MW-16	Historical Pit	Potential buried fluids/solids in pit	SE of G-30X wellsite	Hydrocarbons, salts	Aerial photographs	Phase I ESA	Potential. Not investigated	Low
	MW-17	Historical AST	Potential leaks/spills from AST	W of Backwash Pond	Hydrocarbons	Aerial photographs	Phase I ESA	Potential. Not investigated	Low
	MW-18	Historical AST	Potential leaks/spills from AST	E of E-26X wellsite	Hydrocarbons, salts	Aerial photographs	Phase I ESA	Potential. Not investigated	Low
	MW-19	Historical AST	Potential leaks/spills from AST	Near E-25X wellsite	Hydrocarbons, salts	Aerial photographs	Phase I ESA	Potential. Not investigated	Low
	MW-20	Potential historical dump site	Potential buried equipment leaks	S of E-28X wellsite	Hydrocarbons, salts, metallic debris	Interviews	Phase I ESA	Potential. Not investigated	Low
	Footnote 1	All Wellsites and Supporting Infrastructure	Spills & leaks from wellheads, workover fluids, tanks	Mainland West	Hydrocarbons and salts from operations	Phase I & II ESA	Phase I ESA; Phase II ESA and wellhead abandonment at select sites	Proven, initial investigation at E-27X and C-27X	
Mainland Central									
	MC-1	Buried metal/scrubbers	Leaks from buried equipment	NW of J-29X	Buried metal debris	Interviews	Phase I & II ESAs	Partially investigated, no issues identified to date F31	Low
	MC-2	E-32X/Former flare pit	Leaks/spills at wellhead, fluids/solids historically disposed in pit	Wellhead and NE of E-32X	Black staining apparently showed on ground surface periodically. The Flare Pit was reportedly backfilled in 1960s. Hydrocarbons in soil at wellhead and a natural seepage zone down gradient.	Interviews/Phase II ESA	Phase I & II ESAs, geophysical surveys	Proven, limited investigation. Further delineation will be required.	Medium
	MC-3	Historical Flowline Release	Residual PHCs in soil inaccessible under flowline bundle	NW of F-31X Well Site	Residual hydrocarbons remaining in soils from a flowline break under active flowlines	Spill report, Phase II ESA, Soil Remedial Excavation	Geophysics, Phase II ESA	Proven, remediation. Residual impacts.	Low
	MC-4	Buried Pit/Old pump station site	Pit contents, leaks from pump station equipment	E-32-1X/S of E-32-1X; ENE of G-32X	Buried metal, hydrocarbons, salts	Interviews/Aerial photographs	Phase I & II ESAs, geophysical surveys	Proven, partially delineated. Soil, groundwater G32	Medium
	MC-5	Two historical pits	Pit contents	N of F-33X on bank	Buried metal, hydrocarbons	Aerial photographs	Phase I & II ESAs, geophysical surveys	Investigated. Hydrocarbons may be due to natural seeps.	Medium
	MC-6	Well Services Yard	Leaks and drips from stored tanks, equipment	NW of B-33X wellsite	Hydrocarbons, metals and salts in soil	Phase II ESA	Phase I and II ESAs, geophysical surveys	Potential. Further investigation required.	Low
	MC-7	Historical Flowline Release	Released emulsion fluids	SE of C-32X wellsite, N bank of Bosworth Creek	Residual hydrocarbons and salts from flowline break	Initial spill response/cleanup by Operations, subsequent Phase II ESA	Geophysical surveys, Phase II ESA	Proven. Delineated.	Low
	MC-8	Former Tank 53	Historical tank spills/leaks of PHCs	W of D-32X wellsite	Residual hydrocarbons in soil under access road and south berm	Interviews/Phase II ESA/Remediation reports	Tank removed, Phase I & II ESAs, soil remediation and reclamation partially complete	Proven, delineated, partially remediated. Hydrocarbons in soil.	Medium
	MC-9	Potential Historical Dump site, Potential Grave Site in area	Leaks, spills from buried equipment, buried oil	N of E-33X	Hydrocarbons. Buried oil from Tank 401/53 area. Potential Cultural / Heritage site concern	Interviews / operations excavation	Phase I ESA	Proven during Operations work, no investigation. Delineation required.	Low
	MC-10	Potential old wax pit	Pit contents	N of Tank 401	Hydrocarbons. Historically waxy sludge from Tank 401 bottom shoveled out & disposed to this pit.	Interviews/Aerial photographs	Phase I & II ESAs	Investigated, pit presence not confirmed at this location, no issues identified D32	Low

Table App.4-1
Areas of Proven or Potential Environmental Concern (APECs)

Site Area	APEC #	Description	Contaminant Source(s)	Closest Infrastructure / Reference Point	Environmental Concerns	Information Source	Investigation Work Completed to Date	Current Status (Potential / Proven)	Risk to Receptor
Mainland Central (cont'd)	MC-11	Former Tank 401	Historical tank spills/leaks of PHCs	SE of D-32X wellsite	Residual hydrocarbons in soil	Phase II ESA/Remedial Excavation	Tank removed, Phase I & II ESAs, soil remediation and reclamation partially complete	Proven, delineated, partially remediated. Residual hydrocarbons in soil under berm and flowline to south.	Medium
	MC-12	Potential buried pit	Pit contents	S of Tank 401 pumphouse	Buried metals, hydrocarbons	Interviews	Phase I & limited II ESAs	Limited investigation, potential PHC impact	Low
	MC-13	Possible grave site	None	S of Tank 401 pumphouse	Anecdotal information suggests there may have been a grave site in this treed area.	Interviews	Phase I ESA	Potential	Low
	MC-14	Possible site of old Well #6.	Wellhead leaks, workover fluids	NW of D-34X	Hydrocarbons. On Bosworth Creek bank south of lower bridge. Marked by valve sticking up above ground.	Interviews, Old Site Maps	Phase I & II ESAs	Site visit at wellsite. No further investigation at wellsite but area incorrectly identified as Well #6 was investigated. Proven, hydrocarbon impacts. Further delineation required. D34	Low
	MC-15	Former pit (active fire noted in 1965 air photo)	Pit contents	SW of D-34X on bank. Likely pits on both sides of Bosworth Creek	Buried debris, hydrocarbons	Aerial photographs	Phase I & II ESAs	Proven, limited investigation. Further delineation will be required. BOSD	Medium
	MC-16	A&R and Operations Biocells / ARB Area	Unverified but suspected fuel spill	Field Services Storage Pad / Yard D	Hydrocarbons in soil and groundwater from historical site use	Phase I ESA, Phase II ESA	Phase I & II ESAs, RAP, remedial excavations completed	Proven, delineated, RAP developed, remedial excavations completed, area re-seeded	Medium
	MC-17	Land farm area and dump site	Dump contents - metallic debris, potential leaked fluids	N of former Battery #3 flare pit	Buried metal, hydrocarbons, possible airplane?	Interviews/Aerial photographs/Phase II ESA	Phase I & II ESAs, geophysical surveys	Proven, not delineated	Low
	MC-18	Former Battery #3 Flare Pit	Fluids disposed to flare pit	N of LT #11	Hydrocarbons, salts in soil. Historical Battery #3 flare pit. Residual metals impact on surface previously removed and disposed off-site.	Phase II ESA	Phase II ESA, RAP, remedial excavation/soil treatment, supplementary Phase II ESA	Proven, delineated, RAP developed, remedial excavation completed and soil washing pilot test underway	Medium
	MC-19	East Bosworth Creek Bank	Historical releases from Battery #3 tankfarm area, leaking flowline down side slope, asbestos wrapped pipe	W of former Battery #3 Area	Residual asbestos and hydrocarbons in soil on creek bank, metal debris exposed at surface	Phase II ESA	Phase II ESAs, restoration activities	Proven, further delineation required, stabilized, monitoring	Medium
	MC-20	Bosworth Delta/Old hydrocarbon pit	Potential for PHC fluids disposed in pit	Between D-34X and D-36X-1	Proven hydrocarbons in localized areas on the delta. Pit used in 1942 for crude (?) disposal. Location not verified to date.	Interviews/Phase II ESA	Phase I & II ESAs, geophysical surveys	Investigated. PHCs, metals, salts impact in shallow soil.	Medium
	MC-21	LT #11 Area	Leaks and spills from operational activities	N of G-35X	Hydrocarbons and salts in soil; hydrocarbons and chloride in groundwater	Phase II ESA	Preliminary Phase II ESA	Proven	Medium
	MC-22	Former Battery #3 Process Area	Numerous - process buildings, treater, tank farm, meter building, etc.	G-35X well site	Hydrocarbons and salts in soil; hydrocarbons and chloride in groundwater	Phase I and Phase II ESAs	Phase II ESAs	Proven. Delineated. Metals impacted soil excavated from former meter building footprint.	Medium
	MC-23	B-30X Well Site	Leaks/spills at wellhead, possible workover fluids, possible historical fuel spill in vicinity.	E of Production Warehouse	Hydrocarbons in soil and groundwater.	Phase II ESA	Phase II ESAs, geophysical survey, well abandoned, cut & capped.	Proven, further delineation required to the west.	Medium
	MC-24	Historical AST	Potential leaks/spills	Field Services Storage Pad / Yard D	Hydrocarbons in soil	Aerial photographs	Phase I ESA	Potential. Not investigated.	Low

Table App.4-1
Areas of Proven or Potential Environmental Concern (APECs)

Site Area	APEC #	Description	Contaminant Source(s)	Closest Infrastructure / Reference Point	Environmental Concerns	Information Source	Investigation Work Completed to Date	Current Status (Potential / Proven)	Risk to Receptor
Mainland Central (cont'd)	MC-25	Former Helicopter Pad	Potential for fuel leaks/spills	N of Field Services Storage Pad	Hydrocarbons	Aerial photographs	Phase I ESA	Potential. Not investigated directly under pad. Some soil investigation to east of pad.	Low
	MC-26	Warehouse Storage Yard	Potential for leaks/spills from multiple years of equipment storage on ground. Some bermed areas. Barrel dock.	Production Warehouse Yard	Hydrocarbons, metals and salts.	Aerial photographs	Phase I & II ESAs	Preliminary Phase II ESA, not fully investigated.	Low
	MC-27	Ground disturbance and bermed area	Unknown - potential for spills from C-30X well	W of C-30X Well Site	Hydrocarbons and salts	Aerial photographs	Phase I ESA, limited Phase II ESA	Potential. Little investigation.	Medium
	MC-28	Material (metal, wood debris) pushed over bank	Leaching from debris	Area NW of F-31X Injection Facility potentially extending to N of D-31X	Hydrocarbons, metallic debris, etc.	Aerial photographs, Preliminary site visit	Phase I ESA	Potential. Not investigated in detail.	Low
	MC-29	Bermed area.	Potential for impact from bermed fluids	S of F-31X Injection Facility	Hydrocarbons and salts	Aerial photographs	Phase I ESA	Potential. Not investigated.	Low
	MC-30	Historical Pit	Pit contents	SW of H-31X Well Site	Hydrocarbons and salts	Aerial photographs	Phase I ESA	Potential. Not investigated.	Low
	MC-31	Historical Pit	Pit contents	NW of F-33X wellhead	Hydrocarbons and salts	Aerial photographs	Phase I ESA	Potential. Not investigated.	Low
	MC-32	Historically cleared and bermed area	Potential buried oil/wax area	West of Tank 401 pump building	Hydrocarbons and salts	Aerial photographs	Phase I ESA	Potential. Not investigated.	Low
	MC-33	Historical Pit	Pit contents	D-35-1X Well Site	Hydrocarbons and salts	Aerial photographs	Phase I ESA	Potential. Not investigated.	High
	MC-34	Historical Pit	Pit contents	E of F-35X well pad	Hydrocarbons and salts	Aerial photographs	Phase I ESA	Potential. Not investigated.	Low
	MC-35	Historical Building and AST	Potential for leaks/spills from tank/building	E of Battery #3	Hydrocarbons and salts	Aerial photographs	Phase I ESA	Potential. Not investigated.	Medium
	MC-36	Historical Pit	Pit contents	Southwest corner of Battery #3 Flare Pit	Hydrocarbons and salts, buried debris	Aerial photographs	Phase I ESA, Preliminary Phase II ESA, Remedial Excavation	Proven, investigated, remediated	NA
	MC-37	Historical AST	Spills/leaks from AST	Along road NE of Battery #3 Flare Pit, NW of C-34X wellsite	Hydrocarbons and salts	Aerial photographs	Phase I ESA, geophysical surveys	Potential. Not investigated.	Low
	MC-38	Historical ground disturbance	Unknown	S of D-34X well	Hydrocarbons and salts	Aerial photographs	Phase I ESA	Potential. Not investigated.	Medium
	MC-39	Potential dump site	Dump contents - metallic debris, potential leaked fluids	S of Biocells and Warehouse Access Road	Metal, household garbage	Interviews, Preliminary Phase II ESA/Remedial Excavation (ARB)	Phase I ESA, Remedial Excavation (ARB)	Impacts associated with MC16 have been removed. No evidence of MC-39 encountered during remedial excavation activities and subsequent delineation test-pitting	NA
	MC-40	Potential buried pit	Pit contents	NE of E-32-1X wellsite	Contents unknown	Aerial Photographs	Phase I ESA	Potential. Not investigated.	Low
	MC-41	Potential buried pit	Pit contents	N of C-34-1X wellsite	Contents unknown	Interviews	Phase I ESA	Potential. Not investigated.	Low
	MC-42	Historical flowline release	Residual PHCs in soil inaccessible during initial cleanup	N of D-36X wellsite	Hydrocarbons in soil, potentially groundwater	Operations spill	Very limited Phase II investigation in 1993, 2002 to W of spill area.	Potential.	Medium
	MC-43	Potential Historical spill site	Unknown	SE of C-30X wellsite	Hydrocarbons in subsurface soil, potentially groundwater	Phase II ESA	Limited Phase II ESA - one borehole	Proven. Not fully characterized or delineated	Medium
	MC-44	Potential grave site	None	SE of D-36X wellsite	Cultural / Heritage concern only	Anecdotal	Site reconnaissance	Potential	Low

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	MC-45	E-33X Wellsite	Wellhead leaks, potential spill of workover fluids	E-33X Wellsite	Hydrocarbons in soil	Phase II ESA	Phase II ESA	Proven. Not fully delineated	Medium
	MC-46	EnGlobe Soil Washing Pad	Potential spill of soil treatment chemicals, potential overflow of salt-impacted water from holding pond	Former B-33X Wellsite, Biocell 1	Salts	Visual / Site Inspection	Limited Phase II ESA	Investigated, no impacts identified	Low
	Footnote 1	Wellsites and Supporting Infrastructure	Spills & leaks from wellheads, workover fluids, tanks	Mainland Central	Hydrocarbons and salts from operations	Phase I & II ESAs	Phase I & II ESAs at select well sites	Proven. Preliminary investigation at E-33X	
Mainland East									
	ME-1	Historical dump site	Buried debris	NW of C-36X wellsite	Inert debris, metals from buried pipe and metal debris	Interviews	Phase I & II ESAs	Preliminary investigation. Hand auger. No issues identified.	Low
	ME-2	Historical dump site	Buried debris, PHC from historical well blowout	SW of C-36X wellsite	Hydrocarbons, metals and salts. Possible buried small drill rig. C-36X well had historic blowout that covered surrounding area/buildings (e.g. church) with oil.	Interviews	Phase I & II ESAs, geophysical surveys, on-going monitoring	Proven. Partially delineated.	Medium
	ME-3	C-38X Wellsite	Historical flowline release - PHCs and salts	W of Old Fire Hall	Residual hydrocarbons in excavation walls following flowline break (Line 405)	Phase II ESA	Phase II ESA	Proven, partially delineated, partially remediated.	Low
	ME-4	Historical B-38X Buried Pit	Pit contents - drilling waste with PHCs	W of B-38X wellsite	Residual hydrocarbons after remediation, hydrocarbons in groundwater	Aerial photographs/Phase II ESA	Phase I & II ESAs, geophysical surveys, remedial soil excavation & backfill, on-going monitoring	Proven. Partially remediated, further delineation required.	Low
	ME-5	Two pits/ponds	Pit contents - suspected flare/burn pits so PHCs, salts, metals	S of B-39X	Buried metal, hydrocarbons	Aerial photographs	Preliminary Phase II ESA	Proven. Further delineation required. Hydrocarbons in soil. SAR. E38	Medium
	ME-6	B-38X Area (Fire Training Area etc.)	B-38X well fluids, historical naphtha spill, spills from former ASTs, fluids released in FTA, 8 Bay Warehouse (earthen floor)	W of Mainland Tank Farm	Hydrocarbons in soil and groundwater; salt in soil near the B-40X wellsite	Phase I & II ESAs	Phase I and II ESAs, geophysical surveys, installation of groundwater remediation system dual phase extraction trenches, ongoing groundwater monitoring	Proven. Delineation. Partially remediated.	High
	ME-7	Former Refinery Site	Multiple sources associated with historic infrastructure spills, leaks	S of Mainland Tank Farm & B-38X area	Hydrocarbons, metals and salts in soil and groundwater	Phase II ESAs	Phase I and II ESAs, geophysical surveys	Proven. Partially delineated. Selective excavation & off site landfill of surface metal impacted soil. Issue with dated Phase II information - most collected pre-2003.	High
	ME-8	Former Drum Cleaning Area	Spills and leaks from drums, cleaning fluids	E of old API Separator	Caustic used to clean drums	Interviews	Phase I & II ESAs	Potential	Low
	ME-9	Old garage site, possible pit/sump	Pit contents, spills/leaks from garage activities	Current N.W.T.P.C. site	Hydrocarbons and metals from garage waste, fuel spills, etc.	Interviews	Phase I & II ESAs	Investigated. No issues identified but access was somewhat limited due to current infrastructure proximity.	Low
	ME-10	Historical Reduced Crude Flare Pit	Fluids disposed to flare pit	N of Mainland Tank Farm	Chloride in groundwater, some residual salt in soil	Phase II ESA	Phase II ESA, Remedial excavation	Proven, delineated, remediated, restoration ongoing	Low
	ME-11	Potential Historical Pit and debris	Pit contents	N of Mainland Tank Farm (Tanks 103/101)	Buried debris, metal, hydrocarbons	Aerial photographs	Phase I ESA, limited Phase II and geophysical surveys	Investigated. No issues identified.	Low

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	ME-12	Mainland Tank Farm	Leaks & spills from ASTs	N of former Refinery site	Hydrocarbons in soil and groundwater	Phase II ESA	Phase I & II ESAs	Proven, not delineated	High

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Site Area	APEC #	Description	Contaminant Source(s)	Closest Infrastructure / Reference Point	Environmental Concerns	Information Source	Investigation Work Completed to Date	Current Status (Potential / Proven)	Risk to Receptor
Mainland East (cont'd)	ME-13	Former pipe racks and storage yard	Metal debris, leaks & spills	Under current Mainland Tank Farm	Buried metal, hydrocarbons	Interviews	Phase I ESA	Potential	Low
	ME-14	Historical Dump site	Leaks from buried drums	Exact location not known. Assumed to be NE of RCFP, S of main access road	Hydrocarbons and metals. Possible buried barrels (6,000 old diesel barrels), beside old ball diamond.	Interviews	Phase I ESA	Potential. Not investigated.	Low
	ME-15	Former B-42X Wellsite	Wellhead leaks, workover fluid spills	SE of Mainland Tank Farm	Hydrocarbons and metals in soil east of the wellsite	Phase II ESA	Preliminary Phase II ESA, well abandonment, wellhead cut & cap, supplementary Phase II ESA	Proven. Not delineated to East.	Medium
	ME-16	Old well #3	Wellhead leaks, workover fluid spills	Under road down to Public Works dock	Hydrocarbons, salts. Well was drilled in 1939. Unknown use/owner	Interviews	Phase I ESA	Potential	Low
	ME-17	Refinery Bank	Former API separator, historical fuel line & loadline valve leaks	Bulk Fuels Unloading Dock	Hydrocarbons in soil and groundwater.	Phase II ESA	Phase I & II ESAs, geophysical surveys, installation of groundwater remediation system, ongoing groundwater monitoring	Proven. Partially remediated.	High
	ME-18	Former Construction Campsite	Leaks and spills from ASTs in NE corner of site	NE of B-35X well site	Hydrocarbons, metals, salts in soil.	Phase I ESA	Phase I & II ESAs	Investigated. Some metals exceedances.	Low
	ME-19	Former Fuel Tanks / Pumps	Leaks and spills from fuel ASTs	Flint Shop / Frontier Warehouse / Fluid hauling services shop	Hydrocarbons in soil.	Phase I ESA	Phase I & II ESAs	Proven, partially delineated.	Low
	ME-20	Drum Storage Yard	Leaks and spills from drums	South of N.W.T.P.C. Yard	Hydrocarbons in soil	On-site observations	Phase I ESA, Preliminary Phase II ESA	Proven, partially delineated.	Medium
	ME-21	Town Lease 3	Leaks and spills from historical site operations (materials storage, wellsite activities)	East of D-44X wellsite	Salts and hydrocarbons in soil	Aerial Photographs	Phase I & II ESAs, geophysical survey	Investigated, proven, delineated, remediated.	Low
	ME-22	D-42X	Historical spill location	D-42X wellsite	Hydrocarbons and salts	Spill Report	Preliminary Phase II ESA	Investigated, proven, not delineated.	Low
	ME-23	East End of Lease. Historical Storage area	Leaks and spills from stored materials	ESE of C-44X wellsite	Hydrocarbons, debris	Aerial Photographs	Historical photo review	Potential, not investigated.	Low
	ME-24	Wireline Shop and Contractor Shop	Leaks and spills from shop activities	Wireline Shop, Vehicle Wash Bay	Hydrocarbons, salts, solvents	Long Term Operations. On-site Observations	Soils not investigated in detail. One piezometer on west side of wireline shop.	Potential	Low
	ME-25	Bermed Area - potential former AST location	Leaks and spills from potential former tank	Northeast Corner of Flint Yard	Hydrocarbons	Aerial Photographs	Not investigated to date	Potential	Low
	ME-26	ASTs	Leaks and spills	South Side of Flint Yard	Hydrocarbons	Aerial Photographs	Not investigated to date	Potential	Low
	ME-27	Ground Disturbance AST	Unknown	West side of B-35X wellsite adjacent main access road	Hydrocarbons	Aerial Photographs	Partial coverage by geophysical survey completed for B-35X wellsite	Potential	Low
	ME-28	Unknown historical structure on Embankment, Location of Discovery Well #1	Potential leaks and spills from well drilling, operation	SW of C-37X wellsite, S of E-36X well	Hydrocarbons and salts	Aerial Photographs, Site Inspection	Not investigated to date	Potential	Low
	ME-29	Unknown structures on Embankment	Unknown	West of D-39X wellsite	Hydrocarbons and salts	Aerial Photographs	Not investigated to date	Potential	Low
	ME-30	ASTs	Leaks and spills from tanks	North of D-39X wellsite	Hydrocarbons and salts	Aerial Photographs	Not investigated to date	Potential	Low
	ME-31	Bulk Sales Yard	Fuel leaks and spills	Bulk Sales Yard	Hydrocarbons, solvents	Long term Operations. Aerial Photographs	Not investigated to date	Potential	NA
	ME-32	Storage Area	Leaks and spills from historical site operations (materials storage)	East of B-42X Wellsite	Hydrocarbons, salts, solvents, metals	Long term Operations. Aerial Photographs	Not investigated to date	Potential	Low

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Areas of Proven or Potential Environmental Concern (APECs)

Site Area	APEC #	Description	Contaminant Source(s)	Closest Infrastructure / Reference Point	Environmental Concerns	Information Source	Investigation Work Completed to Date	Current Status (Potential / Proven)	Risk to Receptor
Mainland East (cont'd)	ME-33	Historical AST	Leaks and spills from tank	North of road past C-38X pad to Tank Farm	Hydrocarbons	Aerial Photographs	Not investigated to date	Potential	Low
	ME-34	Potential dump site	Leaks, spills from buried drums, metal debris, etc.	Southwest of RCFP	Hydrocarbons and debris	Interview, IOL map of known dump sites	Phase I ESA, limited Phase II ESA	Proven, not delineated, access restricted.	Low
	ME-35	Potential old warehouse site	Leaks and spills from stored materials	West of D-41X well	Metals, hydrocarbons, salts, metal debris	Interviews	Phase I ESA	Potential, not investigated.	Low
	ME-36	Sheet pile, metal debris	Unknown	North of C-41X well	Metal debris	Interviews	Phase I ESA	Potential, not investigated.	Low
	ME-37	A-45X Wellsite	Wellhead leaks, workover fluid spills	West side of Town Site	Hydrocarbons, salts, metals	Phase I ESA	Phase I & II ESAs, geophysical surveys, remedial soil excavation & backfill, groundwater monitoring	Proven, investigated, remediated	NA
	ME-38	Former Drill Pad	Leaks and spills from historical site activities	N of 8-Bay Building in muskeg area	Hydrocarbons, salts, metals	Aerial Photographs	Site visit, surface solids sample collected	Potential, not investigated.	Low
	Footnote 1	Wellsites and Supporting Infrastructure	Spills & leaks from wellheads, workover fluids, tanks	Mainland East	Hydrocarbons and salts from operations	Phase I ESA	Phase I & II ESAs at selected well sites	Proven. Preliminary investigation at B-42X	
Mainland Sumps	MS-1	Former Mainland Drilling Sump	Buried drilling waste	W of Airport	Residual salts and metals in soil; chloride and metals in groundwater	Phase II ESA, Remediation Report	Phase I & II ESAs, geophysics, sump capped	Proven, delineated. Sump contents remain in place.	Low
	MS-2	Former Well Services Sump	Residual bedrock impact following source removal	W of Airport	Chloride and hydrocarbons in groundwater near East Cell, residual hydrocarbons in bedrock.	Phase II ESA, Remediation Report	Phase I & II ESAs, geophysics, sump contents excavated, sump backfilled	Proven, delineated, remediated.	Low
	MS-3	Former Sumps 1 - 6	Buried drilling waste	N of Mainland and Well Services Sump	Hydrocarbons, salts in soil, chloride in groundwater.	Phase I ESA, Phase II ESA	Phase I & II ESAs, geophysics, sumps infilled	Proven, delineated. Sump contents remain in place. Subsidence areas backfilled and capped with clean fill to grade.	Low
Mainland Other									
	MO-1	Historical Dump site	Leaks, spills from buried metal, drums, etc.	SW of Seepage Lake	Possible diesel impact	Interviews	Phase I ESA	Potential	NA
	MO-2	Seepage Lake	Debris potentially on lake bottom	Seepage Lake	Anecdotal information suggests historically disposed of warehouse debris on ice in winter, let sink to lake bottom in spring.	Interviews	Phase I ESA	Potential	NA
	MO-3	Historical Dump site	Leaks, spills from dump contents	West end of airport runway / South Side	Buried debris, metals, hydrocarbons	Aerial photographs	Phase I ESA	Potential	NA
	MO-4	Former Operations Landfarm over Historical Dump Site	Leaks, spills from dump contents, residual PHC from landfarmed soil	West end of airport runway / North Side	Hydrocarbon impacted soil. Near surface. Buried debris.	Aerial photographs	Phase I & II ESAs for surface soils only.	Proven. Delineated, Landfarm Area Remediated.	NA
	MO-5	Historical Dump Site	Leaks, spills from dump contents	West end of airport runway / North Side	Buried debris, metals, hydrocarbons	Aerial photographs	Phase I ESA	Proven metal debris, not investigated	NA
	MO-6	Potential buried crushed barrels	Leaks, spills from dump contents	SW of Mainland Sumps area	Buried debris, metals, hydrocarbons	Interview, IOL map of known dump sites	Phase I ESA	Potential	NA
	MO-7	Potential historic drainage ditch	Unknown	Between Seepage Lake and Bosworth Creek	Unknown	Interview	Phase I ESA	Potential	NA

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Site Area	APEC #	Description	Contaminant Source(s)	Closest Infrastructure / Reference Point	Environmental Concerns	Information Source	Investigation Work Completed to Date	Current Status (Potential / Proven)	Risk to Receptor
Bear Island									
	BI-1	Old drill pad for Bear Island #1 well	Wellhead leaks, workover fluid spills	W of B.I.T. #5	Buried debris, drill muds/fluids	Aerial photographs	Phase I & II ESAs, remedial excavation	Proven, delineated, remediated. BI1	Low
	BI-2	Historical Tanks and Buildings	Leaks, spills from infrastructure, activities	W of Sump #1	Buried metal, hydrocarbons, debris	Aerial photographs	Phase I & II ESAs	Limited investigation, no issues identified but visible debris in trees. BIR34	Low
	BI-3	Former Tank Farm (BIBT1)	Leaks, spills from crude oil / fuel tanks	North of Sump #2	Hydrocarbons, limited salts	Phase I ESA	Phase I & II ESAs, geophysics, remedial excavation with soils stockpiled at B.I.T. #5	Proven, delineated, remedial action plan developed. Soils and Groundwater.	High
	BI-4	Sumps 1 to 5	Buried drilling waste	E of B.I.T. #5	Proven hydrocarbons and salts in soil, proven chloride in groundwater	Phase I/Phase II ESA	Phase I & II ESAs, geophysics	Proven, delineation partially completed.	High
	BI-5	Former Tank Farm	Leaks and spills from ASTs	North of Sump #3	Hydrocarbons in soil	Aerial photographs	Phase I ESA	Potential	Low
	BI-6	Former Fuel Storage Area	Leaks and spills from ASTs	SW of P-37X	Hydrocarbons in soil	Phase II ESA	Phase I & II ESAs	Proven, not delineated. However, area was lined so impact expected to be in surface soil only.	Low
	BI-7	Tank Farm	Leaks and spills from ASTs	Q-38X well pad	Hydrocarbons and metals in soil	Phase II ESA	Phase I & II ESAs	Proven. Minor surface impacts. Tank area is lined and bermed so limited impact.	Low
	BI-8	B.I.T. #4 Pigging Station	Leaks and spills from pigging operations	B.I.T. #4	Hydrocarbons, waxes	Phase I ESA	Phase I & II ESAs	Proven. Not delineated	Low
	BI-9	B.I.T. #4 Flowline break	Released flowline fluids	S of B.I.T. #4	Hydrocarbons	Phase I ESA	Phase I ESA	Potential. Not investigated.	Low
	BI-10	Former Bear Island Flare Pit, potential drill pad	Fluids disposed in flare pit, flare line leaks	N of N-42X	Hydrocarbons and metals from buried debris or drill muds/fluids	Aerial photographs	Phase I & II ESAs, geophysics	Proven, delineated, remedial action plan developed. Flare Pit source removal completed. Proven impact to east and south of pit.	High
	BI-11	Former Battery and tank farm	Leaks and spills from battery infrastructure, ASTs, flowlines	N-42X well pad	Hydrocarbons and salts in soil and groundwater	Phase II ESA	Phase I & II ESAs, geophysics	Proven	Medium
	BI-12	N-44X (Also called BISS2)	Fluids released from flowline	E of N-44X	Residual hydrocarbons in soil	Phase II ESA	Phase II ESA, Geophysics	Proven. Delineated, remediated. Operations conducted source excavation to groundwater and backfilled.	Low
	BI-13	N-45X (Historical spill site, also called BISS)	Fluids released from flowline	N of N-45X	Residual hydrocarbons in soil	Phase II ESA	Phase II ESA, Geophysics	Proven. Delineated, remediated. Operations conducted source excavation to groundwater and backfilled.	Low
	BI-14	O45X/O46X Spill site (Also called BISS3)	Fluids released from flowline break	N of O-46X	Residual hydrocarbons and salinity impacts in soil	Phase II ESA	Phase II ESA, Geophysics	Proven.	Low

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	BI-15	Sump #6	Buried drilling waste	SE of N-47X	Hydrocarbons, Barium and salts in soil, chloride in groundwater	Phase II ESA	Phase I & II ESAs	Proven. Delineated.	Medium
	BI-16	M-43X Line Break	Fluids released from flowline break	M-43X	Hydrocarbons and salts	Spill Report	Phase II ESA, remedial excavation	Proven, delineated, RAP developed, remediated. M43	NA
	BI-17	Former Tank Farm	Leaks and spills from ASTs	South of R-36X	Hydrocarbons and salts. Debris	Aerial photographs	Phase I & II ESAs	Proven. Partially delineated.	Medium
	BI-18	Former Tank Farm	Leaks and spills from ASTs	B.I.T. #5	Hydrocarbons and salts	Aerial photographs	Preliminary Phase II ESA	Potential. Not fully investigated. Shallow PHC F2 impact at BIBG-10-3.	Medium
	BI-19	Former Storage Area	Leaks and spills from stored equipment/materials	Q Pad	Hydrocarbons	Aerial photographs	Phase I ESA	Potential. Not investigated.	Low
	BI-20	Historical Pit	Pit contents	P-37X	Hydrocarbons and salts	Aerial photographs	Phase I ESA	Potential. Not investigated.	Low
	BI-21	Unexplained Clearing	Unknown	P-38X	Hydrocarbons and salts	Aerial photographs	Phase I ESA	Potential. Not investigated.	Low
	BI-22	Historical Pit	Pit contents	N-39X	Hydrocarbons and salts	Aerial photographs	Phase I ESA	Potential. Not investigated.	Low
	BI-23	Historical Pit / Soil Pile	Unknown	O-43X	Hydrocarbons and salts	Aerial photographs	Phase I ESA	Potential. Not investigated.	Low
	BI-24	Historical Pit	Unknown	N-45X	Hydrocarbons and salts	Aerial photographs	Phase I ESA	Potential. Not investigated.	Low
	BI-25	Unexplained Clearings	Unknown	O-46X	Hydrocarbons and salts	Aerial photographs	Phase I ESA, Geophysics	Potential. Not investigated.	Low
	BI-26	Former AST location	Leaks and spills from AST	SE of Sump #1	Hydrocarbons	Aerial photographs Phase II ESA	Phase I & II ESAs	Proven. Not delineated.	High
	BI-27	Pipeline release at O-43X	Fluids from flowline	O-43X	Hydrocarbons and salts	Preliminary Phase II ESA	Preliminary Phase II ESA	Proven. Not delineated.	Medium
	BI-28	Pipeline release at Q-43X	Fluids from flowline	Q-43X	Hydrocarbons and salts	Preliminary Phase II ESA	Preliminary Phase II ESA	Proven. Not delineated.	Medium
	Footnote 1	Wellsites and Supporting Infrastructure	Spills & leaks from wellheads, workover fluids, tanks	Bear Island	Hydrocarbons and salts from operations	Phase I	Preliminary Phase II ESAs at selected sites	Potential	

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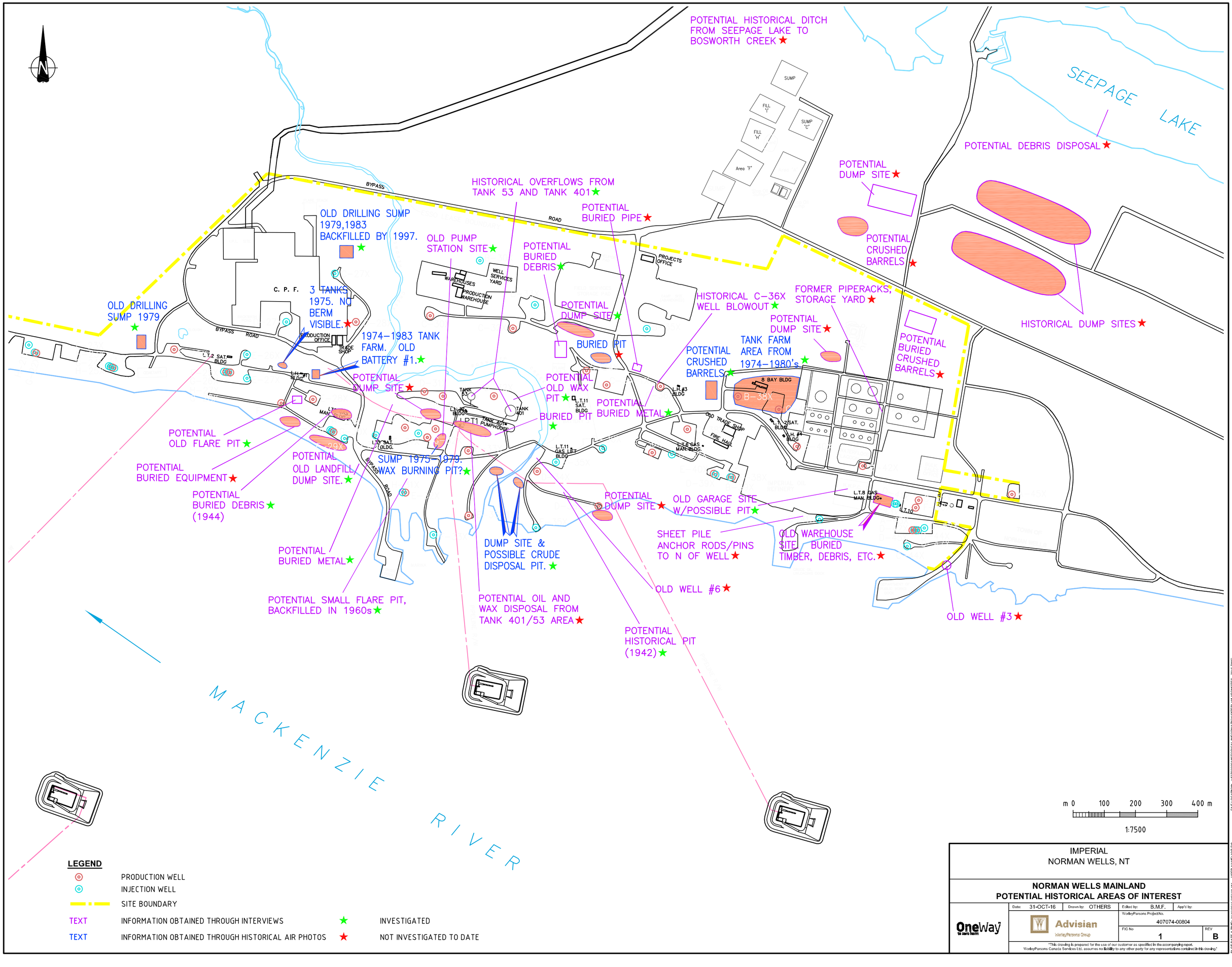
Goose Island									
	GI-1	Fuel Storage Area	Fuel tank leaks and spills	E of Q-8X	Hydrocarbons and salts in soil	Phase II ESA	Phase I & II ESAs, geophysical survey	Proven, delineated. Soils GIQ8	Low
	GI-2	Former Camp	Leaks and spills from stored equipment/materials	NE of Q-10X	Buried debris, metal, hydrocarbons	Aerial photographs	Phase I & II ESAs	Investigated, no issues identified to date. GIQ10	Low
	GI-3	Former sump or borrow pit	Sump contents?	SE of P-9X	Buried debris, metal, hydrocarbons	Aerial photographs	Phase I & II ESAs	Investigated, no issues identified to date. GIP9	Low
	GI-4	Former Tank Farm	Leaks and spills from tanks	SW of P-11X	Hydrocarbons and salts	Aerial photographs	Phase I & II ESAs	Proven chloride impact in subsurface soils, not delineated to south. Soils GIP11	Low
	GI-5	Historical Spill Site	Spilled fluids - likely emulsion	O-14X Well Pad	Hydrocarbons and salts	Spill Reports	Phase I & II ESAs	Investigated, no issues identified. GIQ14	Low
	GI-6	O-18X Pipeline Break	Spilled fluids - emulsion	O-18X Well Site	Hydrocarbons and Salts	Spill Reports	Phase II ESA, remedial excavation	Investigated. Proven, delineated. RAP prepared. Partially remediated (source removal). Monitoring in place.	Medium
	GI-7	Q-06X Pipeline release	Spilled fluids - emulsion	Q-06X Well Site	Hydrocarbons and Salts	Spill Reports	Phase II ESA, geophysical survey	Investigated. Proven. Delineated. RAP prepared. Partially remediated.	Low
	GI-8	Possible old Burn Pit	Fluids/gases disposed and/or combusted in pit	G.I.T. 4	Hydrocarbons, salts	Anecdotal report from Operations personnel	Preliminary soil investigation	Potential (limited investigation completed to date)	Low
	Footnote 1	Wellsites and Supporting Infrastructure	Spills & leaks from wellheads, workover fluids, tanks	Goose Island	Hydrocarbons and salts from operations	Phase I & II ESAs	Phase I & II ESAs, wellhead/bunker removal at selected sites	Proven, initial investigations at O-29X and T-08X.	
Frenchy's Island									
	FI-1	Wellsites	Leaks and spills from wellheads, workover fluids	J-52X wellsite	Hydrocarbons, salts	Phase I ESA	Phase I ESA, preliminary Phase II ESA	Initial investigation, no issues identified.	
Artificial Island 1	AI1-1	Former Barrel Dock	Spills & leaks	AI1	Hydrocarbons in surface soils	Phase I ESA	Preliminary Phase II ESA	Proven	
	AI1-2	Wellsites and Storage Tanks	Spills & leaks from wellheads, workover fluids, tanks	AI1	Hydrocarbons	Phase I ESA	Phase I ESA	Potential	
Artificial Island 2	AI2-1	Wellsites and Storage Tanks	Spills & leaks from wellheads, workover fluids, tanks	AI2	Hydrocarbons, salts	Phase I ESA	Phase I ESA	Potential	
Artificial Island 3	AI3-1	Wellsites and Storage Tanks	Spills & leaks from wellheads, workover fluids, tanks	AI3	Hydrocarbons, salts and glycols	Phase I ESA	Phase I ESA	Potential	
Artificial Island 4	AI4-1	Wellsites and Storage Tanks	Spills & leaks from wellheads, workover fluids, tanks	AI4	Hydrocarbons, salts and glycols	Phase I ESA	Phase I ESA	Potential	
Artificial Island 5	AI5-1	Wellsites and Storage Tanks	Spills & leaks from wellheads, workover fluids, tanks	AI5	Hydrocarbons, salts	Phase I ESA	Phase I ESA	Potential	
Artificial Island 6	AI6-1	Wellsites and Storage Tanks	Spills & leaks from wellheads, workover fluids, tanks	AI6	Hydrocarbons, salts	Phase I ESA	Phase I ESA	Potential	

Footnote 1 APECs for most individual wellsites and supporting infrastructure are not illustrated on figures accompanying this table.
AG = above ground; UG = underground
AST = above ground storage tank; UST = underground storage tank



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NORMAN WELLS MAINLAND
POTENTIAL HISTORICAL AREAS OF INTEREST

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		FIG No 1	REV B

OneWay to zero harm

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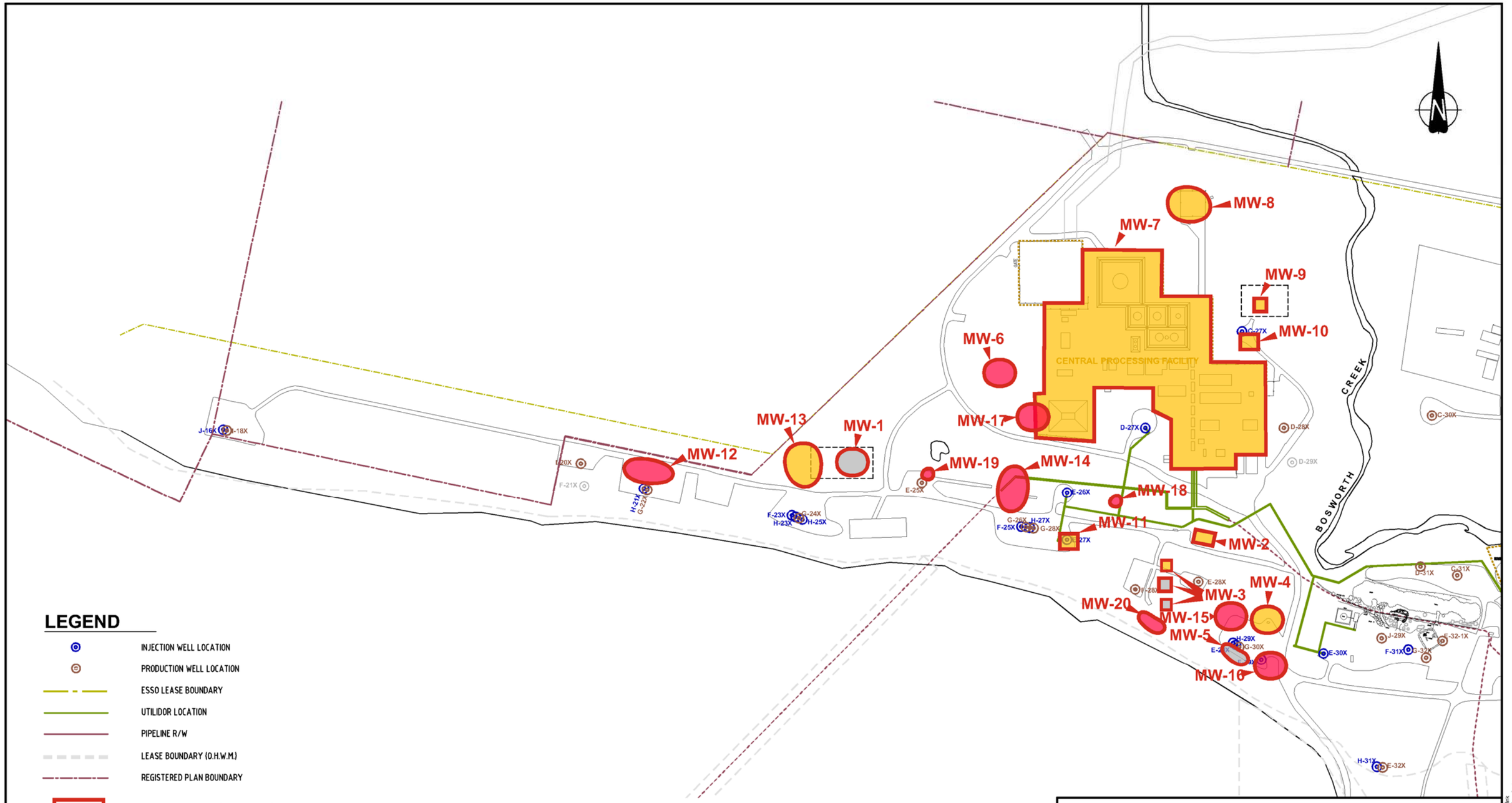

LEGEND

- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- ESSO LEASE BOUNDARY
- UTILIDOR LOCATION
- PIPELINE R/W
- LEASE BOUNDARY (O.H.W.M.)
- REGISTERED PLAN BOUNDARY
- APEC AREA BOUNDARY (APPROXIMATE)
- NOT INVESTIGATED
- INVESTIGATED - PROVEN - NOT DELINEATED
- INVESTIGATED - PROVEN - DELINEATED
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m 0 100 200 300 m

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AREAS OF PROVEN OR POTENTIAL ENVIRONMENTAL CONCERN MAINLAND WEST

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		FIG No 2	REV A

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ISSUING OFFICE: CALGARY

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MC-26
MC-23
MC-6
MC-25
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MC-7
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MC-44
MC-2
MC-5
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MC-20
MC-30
MC-15
MC-33
MC-31

FLARE STACK
IMPERIAL OIL LEASE BOUNDARY
CANOL DRIVE
C-27Z SUMP
C-27X
C. P. F.
AL PROCESSING FACILITY
PRODUCTION OFFICE
TRADE SHOP
BOSWORTH CREEK
WAREHOUSES
PRODUCTION WAREHOUSE
B-30X
SERVICES YARD
WASTE YARD
STORAGE PAD
FORMER HELIPAD
FIELD SERVICES STORAGE PAD
FLUID HAULING SERVICES SHOP
B-33X
B-35X
C-32X
PIPELINE
C-34X
C-34-1X
C-36X
L.H.#3 BLDG
MDS
BOSWORTH CREEK/BATTERY #3
FORMER REDUCED CRUDE FLARE PIT
LT3 GAS MAN. BLDG
WIRELINE SHOP
WELDING SHOP
L.T.6 GAS MAN. BLDG
GAS LIFT BLDG
FLOWLINE
C-38X
C-37X
E-36X
E-39X
D-39X
B-39X
E-40X
D-34X
E-35X (NEB)
E-35X (FHEL)
F-35X
MARINA
ONSITE DOCK
L.H. #1 BLDG
LT1
BLDG

LEGEND

- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- ESSO LEASE BOUNDARY
- UTILIDOR LOCATION
- PIPELINE R/W
- LEASE BOUNDARY (O.H.W.M.)
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- APEC AREA BOUNDARY (APPROXIMATE)
- NOT INVESTIGATED
- INVESTIGATED - PROVEN - NOT DELINEATED
- INVESTIGATED - PROVEN - DELINEATED
- INVESTIGATED - NO ISSUES/REMEDIATED

m 0 100 200 300 m

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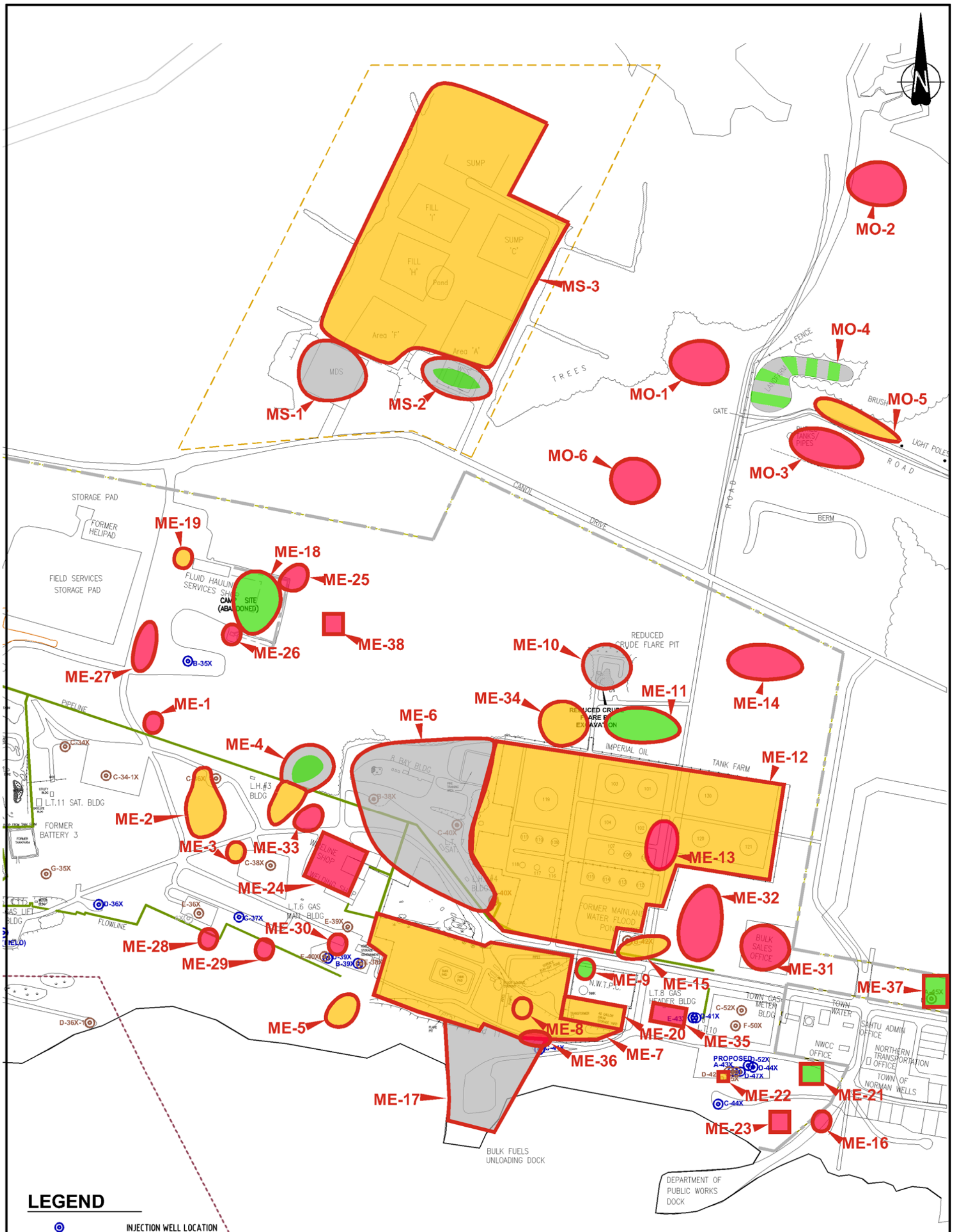

LEGEND

- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- ESSO LEASE BOUNDARY
- UTILIDOR LOCATION
- PIPELINE R/W
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- INVESTIGATED – PROVEN – DELINEATED
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AREAS OF PROVEN OR POTENTIAL ENVIRONMENTAL CONCERN MAINLAND EAST AND MAINLAND SUMPS

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FIG No 4 | REV A

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LOT 1007 LEASE No. 96 E/7-15-2
ISLAND 5 (ITEH K'EE)

PRODUCING WELLS		INJECTION WELLS	
M-31X	K-36X	J-31X	L-33X
M-32X	K-37X	J-33X	L-34X
M-34X	I-32X	J-35X	L-35X
M-37X	I-34X	J-36X	L-36X
K-32X	I-36X		L-37X
K-33X			
K-34X			

PLAN 69807 C.L.S.R. (L.T.O. No. 1732)
LOT 1008 LEASE No. 96 E/7-14-2
ISLAND 6 (LITTLE BEAR)

PRODUCING WELLS		INJECTION WELLS	
I-40X	K-40X	J-37X	J-43X
I-42X	K-42X	J-39X	L-39X
K-38X	M-40X	J-41X	L-41X

MACKENZIE RIVER

FRENCHY'S ISLAND
LEASE No. L-3175T

BEAR ISLAND
LOT 8 REMAINDER GROUP 1158
PLAN 52019 C.L.S.R.

LEASE No. L-2824T

LEASE No. 96 E/7-26-4

BI-1 BI-2 BI-3 BI-4 BI-5 BI-6 BI-7 BI-8 BI-9 BI-10 BI-11 BI-12 BI-13 BI-14 BI-15 BI-16 BI-17 BI-18 BI-19 BI-20 BI-21 BI-22 BI-23 BI-24 BI-25 BI-26 BI-27 BI-28

FI-1

LEGEND

- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- ESSO LEASE BOUNDARY
- UTILIDOR LOCATION
- PIPELINE R/W
- LEASE BOUNDARY (O.H.W.M.)
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- INVESTIGATED - PROVEN - DELINEATED
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FIG No: 5
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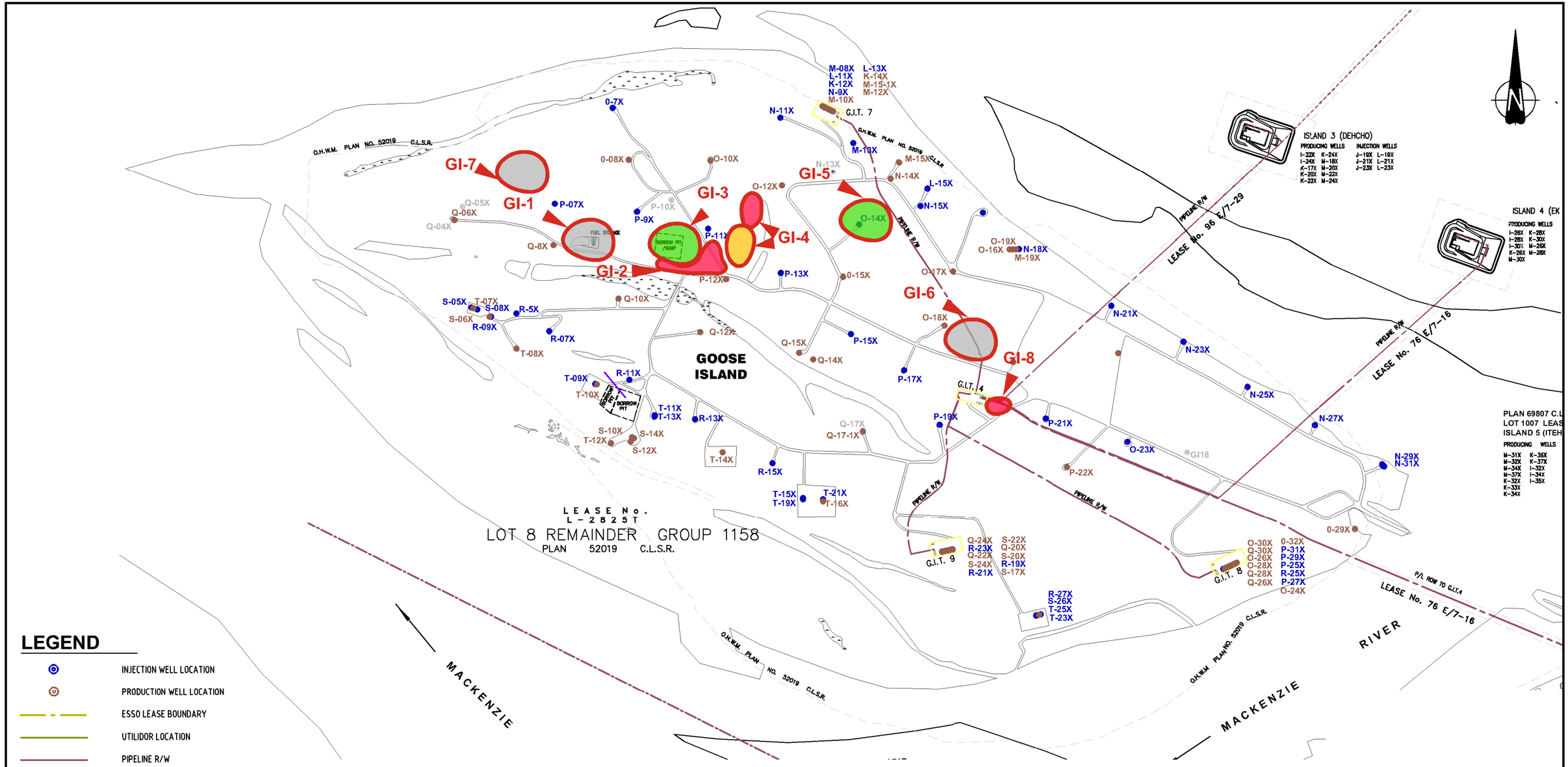

LEGEND

- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- ESSO LEASE BOUNDARY
- UTILIDOR LOCATION
- PIPELINE R/W
- LEASE BOUNDARY (O.H.W.M.)
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FIG No 6 | REV B

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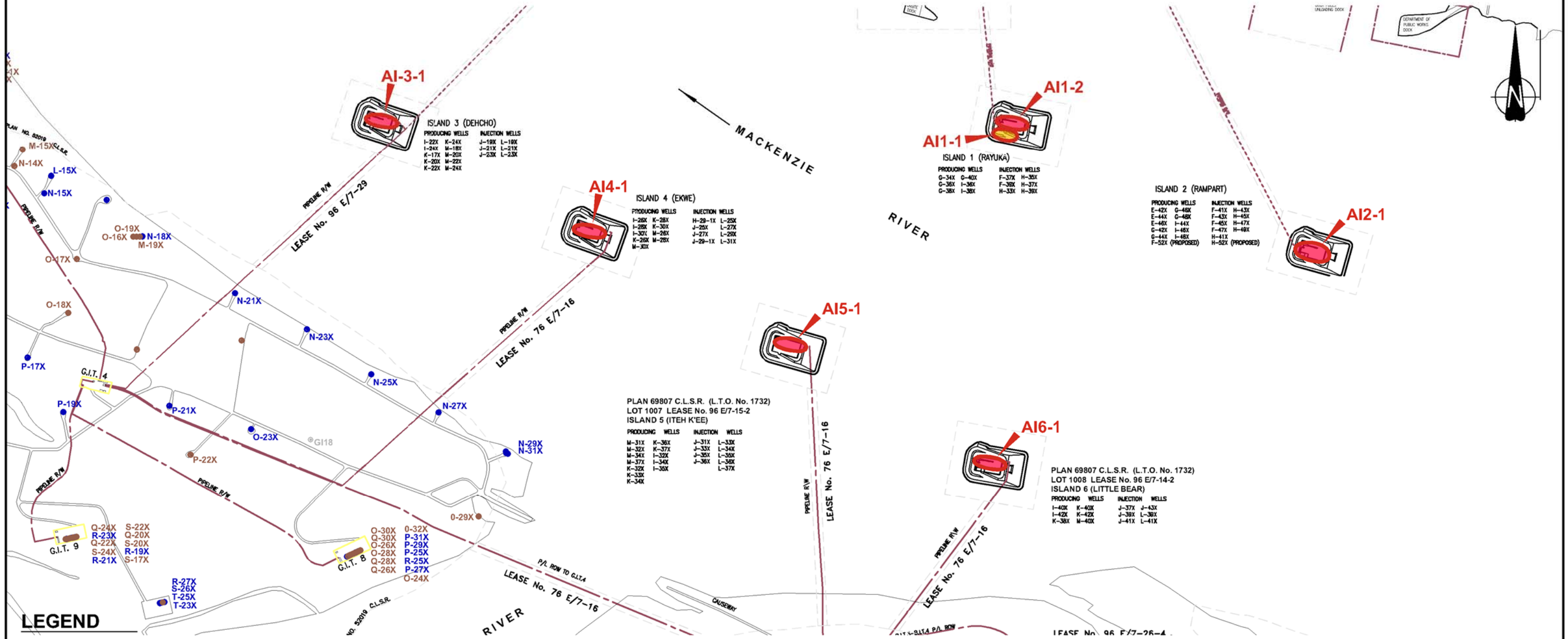

SOURCES:
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2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013.

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AREAS OF PROVEN OR POTENTIAL ENVIRONMENTAL CONCERN
ARTIFICIAL ISLANDS

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FIG No 7 | REV A

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Appendix 5
Conceptual Site Model: Battery #3 Flare Pit

Imperial

Conceptual Site Model

Battery #3 Flare Pit (APEC MC-18), Norman Wells, NT

30 May 2019

407011-00622-500 – CA-REP-0005

Advisian
Suite 500, 151 Canada Olympic Rd SW
Calgary, AB T3B 6B7 CANADA
Phone: +1 403 247 0200
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Project No. 407011-00622-500-CA-REP-0005 - Conceptual Site Model: Battery #3 Flare Pit (APEC MC-18), Norman Wells, NT

Rev	Description	Originator Approval	Reviewer Approval	Project Manager Approval	Date
0	Issued as Final	L. Glatiotis / A. Haigh	M. Brown	S. Gibb	30-May-19

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1. Conceptual Site Model Summary 1

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Figure 1 Site Location Map

Figure 2 Historical Air Photo 1985

Figure 3 Site Plan Showing Topography

Figure 4A Site Plan Showing Sampling Locations

Figure 4B Excavation Site Plan Showing Sampling Locations

Figure 5A Site Plan 3-D Visualization

Figure 5B Cross Section A-A' (Southwest to Northeast)

Figure 5C Cross Section B-B' (North to South)

Figure 6A Soil Analytical Results: Salinity Parameters

Figure 6B Excavation Soil Analytical Results: Salinity Parameters

Figure 6C Soil Analytical Results: Organic Parameters

Figure 6D Excavation Soil Analytical Results: Organic Parameters

Figure 7A Groundwater and Surface Water Analytical Results: Dissolved Chloride

Figure 7B Groundwater and Surface Water Analytical Results: Petroleum Hydrocarbon Parameters

Figure 8 Conceptual Site Model

Figure 9 Conceptual Exposure Model, Current Land Use and Site Conditions

Tables

Table 1 Soil Analytical Results: Inorganic Parameters

Table 2 Soil Analytical Results: Organic Parameters

Table 3 Water Analytical Results: Inorganic Parameters

Table 4 Water Analytical Results: Total Metals

Table 5 Water Analytical Results: Organic Parameters

1. Conceptual Site Model Summary

Site Description

LAND USE	
Site Description:	Situated to the North of the former Battery #3 (Figures 1 and 2). Access road to the Northwest of the site. Aboveground utilidor to the East of the site. Former Battery #3 Land Farm to the North of the site. Above ground power line to the North of the site.
Current Land Use:	CCME Industrial land use.
Future Land Use:	CCME Industrial land use.
HISTORICAL LAND USE	
Infrastructure type:	Flare pit.
Notes:	Hydrocarbons and salts in soil. Residual metals impact on surface previously removed and disposed off-site.
Years Active:	Pre-1950 to pre-1996 (exact dates unavailable, based on air photo database).
SITE SETTING	
Topography and Drainage:	Steep slope to the West of site, down to Bosworth Creek. Surface drainage is generally South to a wetland/marsh area, which limits delineation of impacts in that direction (Figures 3 and 5C).
Nearby Surface Water Bodies (Distance and Direction):	Bosworth Creek (~ 45 m SW of remedial excavation, 65 m SW of former flare pit). Wetland/marsh area. (~ 5 m South of remedial excavation, 30 m South of former flare pit).
SOIL AND GROUNDWATER CONDITIONS	
Surficial Materials:	Sand, silt, loam, peat, fill (Figures 5B/C).
Depth to Permafrost:	Observed in two boreholes (BT97-13 and BT02-35) at 4.5 mbgs (metres below ground surface) and at 2.6-4.5 mbgs, respectively. Not encountered in other local borehole locations.
Depth to Bedrock:	~ 5 to 8 mbgs

Bedrock Lithology:	Siltstone/shale.
Number of Groundwater-Bearing Zones:	3 (overburden, upper bedrock and lower bedrock).
Number of Piezometers - Overburden:	Active - 2; Inactive – 5 (Figures 4A/B)
Number of Piezometers - Upper Bedrock:	Active - 3; Inactive – 5 (Figures 4A/B)
Number of Piezometers - Lower Bedrock:	Active - 0; Inactive – 2 (Figures 4A/B)
Free Product in Upper Groundwater-Bearing Zone:	Not encountered.
Free Product in Secondary Groundwater-Bearing Zone:	Encountered at wells BT3 93-25-X and BT3 99-22-26, between the Former Flare Pit and Bosworth Creek, and other upper bedrock well screens 20+ mbgs in the area. Interpreted to be natural crude oil seepage based on depth and chemistry.
<u>First Groundwater-Bearing Zone</u>	
Primary Soil Type/Lithology:	Silt
Dominant Grain Size:	Fine
Depth to Groundwater Surface:	4.5 mbgs
Hydraulic Conductivity (Minimum):	8.5×10^{-9} m/s
Hydraulic Conductivity (Maximum):	$> 1 \times 10^{-5}$ m/s
Hydraulic Conductivity (Geometric Mean):	2.3×10^{-7} m/s
Lateral Hydraulic Gradient	Not calculated
Groundwater Flow Direction and Velocity:	West towards Bosworth Creek.
Vertical Hydraulic Gradient:	Upwards vertical gradient observed in BT3 97-2-5 and BT3 97-3-8 (P97-30A/B), across bedrock and overburden interface.
<u>Second Groundwater-Bearing Zone</u>	
Primary Soil Type/Lithology:	Siltstone/shale
Dominant Grain Size:	Fine
Depth to Groundwater Surface:	9.0 mbgs
Hydraulic Conductivity (Minimum):	2.9×10^{-7} m/s
Hydraulic Conductivity (Maximum):	$>1 \times 10^{-5}$ m/s
Hydraulic Conductivity (Geometric Mean):	1.3×10^{-6} m/s
Lateral Hydraulic Gradient	i = 0.04 based on 2017 water levels measured at BT3 99-23-13 near flare pit and drivepoint BOS-DP-13-2-1.35 beside Bosworth Creek

Groundwater Flow Direction and Velocity:	West towards Bosworth Creek; velocity of a non-reactive tracer such as chloride estimated to be 8.2 m/year (based on v = Ki/n) and dissolved PHC velocity of 2.1 m/year or less.
Vertical Hydraulic Gradient:	Upwards vertical gradient observed across bedrock and overburden interface.
Third Groundwater-Bearing Zone	
Primary Soil Type/Lithology:	Siltstone/shale
Dominant Grain Size:	Fine
Depth to Groundwater Surface:	~25 mbgs (limited local monitoring wells in this zone due to natural seepage of crude oil and saline water at this depth and below).
Hydraulic Conductivity:	2.0 x 10^{-9} m/s (based on one K-test conducted at BT3 99-22-26.
Hydraulic Conductivity (Geometric Mean):	NA
Groundwater Flow Direction and Velocity:	West towards Bosworth Creek
Vertical Hydraulic Gradient:	Downwards vertical gradient observed in the bedrock units at BT3 00-28-44 and BT3 00-29-22 (nested piezometer pair, both completed in bedrock).
HISTORICAL ENVIRONMENTAL ACTIVITIES	
	Soil and groundwater characterization and impact delineation (1993 to present). Remedial pilot testing, GW pumping and dual phase extraction (1999-2000). Remedial excavation - partially complete (2016) with physical limitations due to proximity of adjacent aboveground utilities (North and East) and surface water/wetland (South). Approximately 5,760 m^3 of impacted soil removed. Excavation backfilled with 6,260 m^3 of clay fill material from the Town of Norman Wells' Clay Pit.
CURRENT STATUS	
	Remaining soil and groundwater impacts (Figures 6A-D and 7A-B).

Sources and Impacts

SOURCES	
Historical Sources:	Flare Pit (APEC #MC-18, Appendix 4). Flare line(s) running from Flare Pit to Battery #3 infrastructure (South of site). Battery #3 (South of site). Aboveground utilidor (East of site).
Current Sources:	Impacted soil (secondary source). Aboveground utilidor (East of site).
KNOWN ENVIRONMENTAL CONCERNS	
a. Soil	
Potential Contaminants of Concern:	Hydrocarbons, PAHs, and salinity. Residual metals impacts on surface previously removed and disposed off-site.
Proven Contaminants of Concern:	Hydrocarbons, salinity (EC, SAR) - partially attributed to natural crude and saline water seepage up from bedrock
Lateral Delineation:	Salinity impacts in the excavation were delineated to the southeast, south and southwest. Impacts to the northeast, north and north west remain. Salinity impacts in soil outside of the excavation are delineated to the south, west and east. Delineation to the north and northeast incomplete. The northeast area is blocked by above-ground infrastructure. Hydrocarbon impacts in the excavated area were delineated to the south, west, east and northwest. Impacts to the northeast remained. Outside of the excavation area, hydrocarbon impacts are delineated to the south. Delineation to the west, east and north is incomplete but complicated by natural seepage.
Vertical Delineation:	Salinity impacts within the excavation were not delineated vertically and impacts remained at the base which is at the bedrock interface. Vertical delineation of salinity impacts inside and outside of the excavation is incomplete past 6.0 mbgs. Delineation is complicated by natural salinity of the upper bedrock.

	Hydrocarbons were vertically delineated in the excavation and appear to be vertically delineated in general around 4.5 mbgs.
b. Groundwater	
Potential Contaminants of Concern:	Hydrocarbons, chloride, metals, PAHs
Proven Contaminants of Concern:	Hydrocarbons, chloride, some PAH's - partially attributed to natural crude and saline water seepage from underlying bedrock.
Presence of Free Product:	Crude oil encountered historically at BT3 93-25-X and BT3 99-22-26, between the Former Flare Pit and Bosworth Creek; these locations are not actively monitored at present. This hydrocarbon is attributed to natural seepage.
Lateral Delineation:	Chloride exceedances in the first and second groundwater bearing zones are not delineated to the west, south and southwest. North and east are up-gradient of associated impacts. Note that only chloride values above approx. 300 mg/L in upper bedrock would be considered related to the former flare pit.
	Groundwater reaching an inferred discharge point to Bosworth Creek about 65 m southwest of the former flare pit (drive point well BOS-DP-13-2-1.35 on Figure 7A) exhibited chloride values ranging from 320 to 650 mg/L between 2013 and 2017, indicating some degree of impact from the flare pit, above the inferred background value of about 300 mg/L chloride originating from the underlying bedrock. Light-end PHC values at this sentinel location, particularly benzene, toluene and ethylbenzene (BTE), are below detection limits. Some PAH's are measurable at the well but are considered most likely attributable to crude oil seepage from upper bedrock. Surface water sampling in the wetland to the south of the former flare pit indicated no elevated chloride values or detectable PHC's when last sampled between 2009 and 2012.

Vertical Delineation:	Groundwater chloride and hydrocarbon impacts are not vertically delineated below the second groundwater bearing zone. The third groundwater bearing zone has limited local monitoring wells due to natural seepage of crude oil and saline water at this depth and below. Note that only chloride values above approx. 300 mg/L in bedrock would be considered related to the former flare pit.

Migration Pathways and Receptors

MIGRATION PATHWAYS	Summarized in Figures 8 and 9. Potential pathways include leaching from soil to groundwater, lateral migration in groundwater, discharge to surface water, shallow vapour migration in soil, water and wind erosion.
RECEPTORS	Summarized in Figures 8 and 9. Main receptor of interest is Bosworth Creek, in relation to human, wildlife and freshwater aquatic life receptors. Secondary receptor of interest is the wetland to the South of the site. Plants and soil invertebrates may also be receptors in the rooting zone of shallow soils.
EXPOSURE PATHWAYS	Summarized in Figures 8 and 9.

Synopsis of Conceptual Risk

In terms of soil related exposure pathways, the remedial excavations completed to date on the former flare pit removed readily accessible PHC and salinity impacted soils. Other impacted soils/bedrock remain in place, along with elevated PHC's and salinity related to natural seepage in the bedrock. Due to physical obstacles to further excavation including the active utilities and bedrock, some residual soil impacts exceeding guidelines remain in place. Risks related to potential exposure pathways for human, ecological, microbial and wildlife contact or ingestion have been reduced by the remedial excavations, but not eliminated. The clayey backfill used in the excavation should reduce the potential for further leaching of chloride from the residual soil source material to the underlying groundwater.

The pathway for leaching from soil to groundwater is active, although partially mitigated by the excavations and backfill. Groundwater sampled southwest of the former flare pit at the inferred discharge point to Bosworth Creek exceeds the applied guidelines and expected background for chloride, but light end PHC values are below detection limits at this sentinel location. Trace PAH’s in this well are detectable, but considered most likely attributable to

natural crude oil seepage in the area.

In terms of groundwater related exposure pathways, Figure 7A indicates that chloride exceeding applied guidelines and natural background persist under the footprint of the former flare pit in the upper bedrock water-bearing zone, and westward toward Bosworth Creek. As such the exposure scenarios related to wildlife watering and freshwater aquatic life at Bosworth Creek are complete and active. Shallow groundwater discharge to the wetland south of the former flare pit is also a potentially active scenario, but surface water sampling in this area has not indicated measurable exceedances of the applied guidelines. In terms of groundwater consumption, the exposure scenario is incomplete for humans. Human drinking water is sourced locally from the Mackenzie River upstream of this site, and is treated by the Town of Norman Wells before use.

Limitation of Liability, Scope of Report, and Third Party Reliance

This report has been prepared and the work referred to in this report has been undertaken by WorleyParsons for Imperial Oil Limited. It is intended for the sole and exclusive use of Imperial Oil Limited, its affiliated companies and partners and their respective [insurers], agents, employees, and advisors (collectively, "Imperial Oil"). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and WorleyParsons make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigation undertaken by WorleyParsons with respect to this report and any conclusions or recommendations made in this report reflect WorleyParsons' judgment based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. This report has been prepared for the specific application to this site and it is based, in part, upon visual observation of the site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site, substances addressed by the investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions, and recommendations in this report may be necessary.

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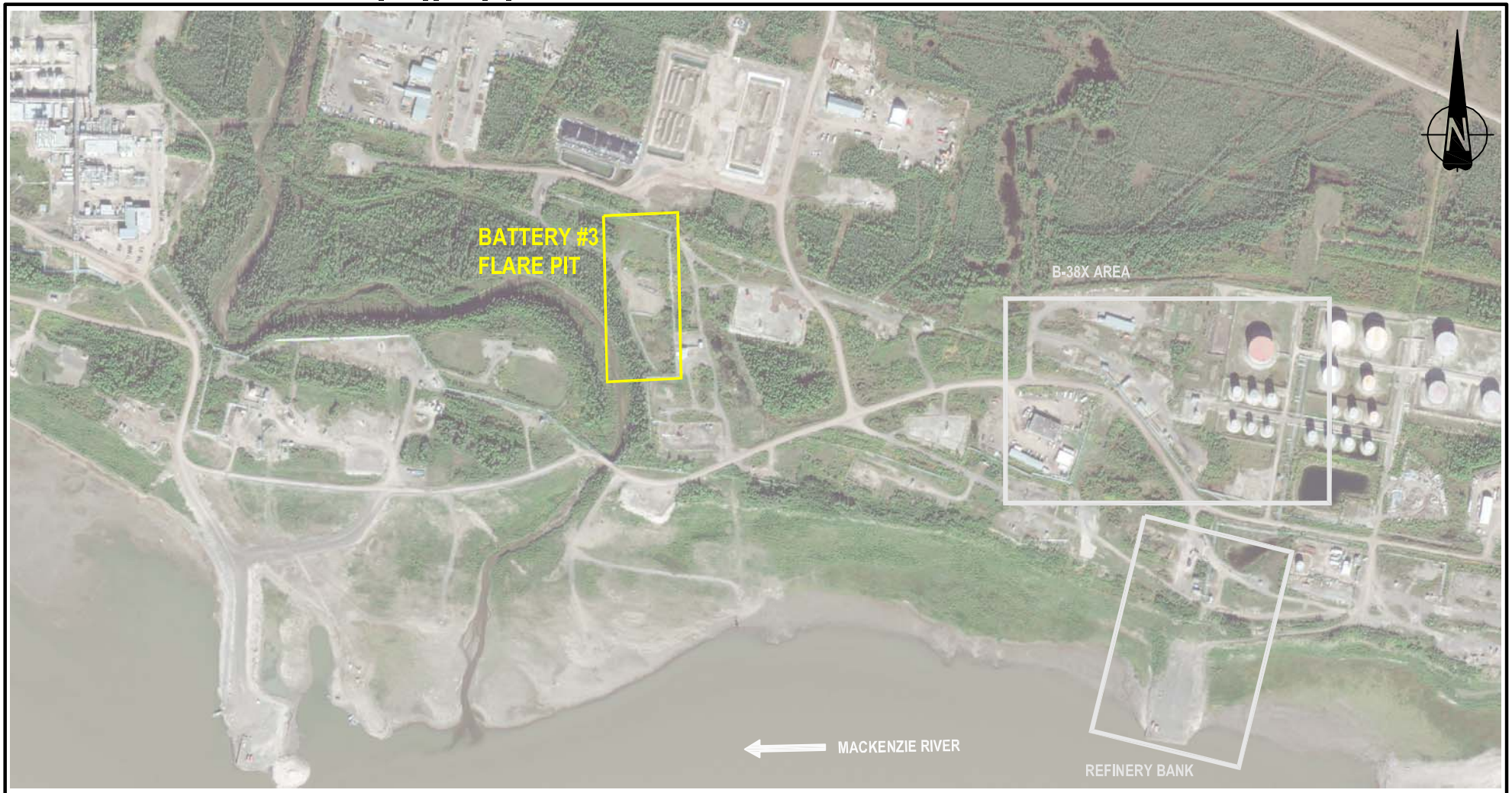
Figures

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-SITEAIRPHOTO2017.DWG



AIR PHOTO SOURCE: PLANET LABS GEOMATICS CORP.,
DATE: APRIL 6 AND 30, 2017

3TM NAD27

m 0 100 200 400 m

1:8000

IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

SITE LOCATION MAP

Date:	02-MAY-19	Drawn by:	BMF	Edited by:	BMF	App'd by:	

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FIG No
1

REV
A

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IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

HISTORICAL AIR PHOTO 1985

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02-MAY-19	BMF	BMF	

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FIG No 2

REV A

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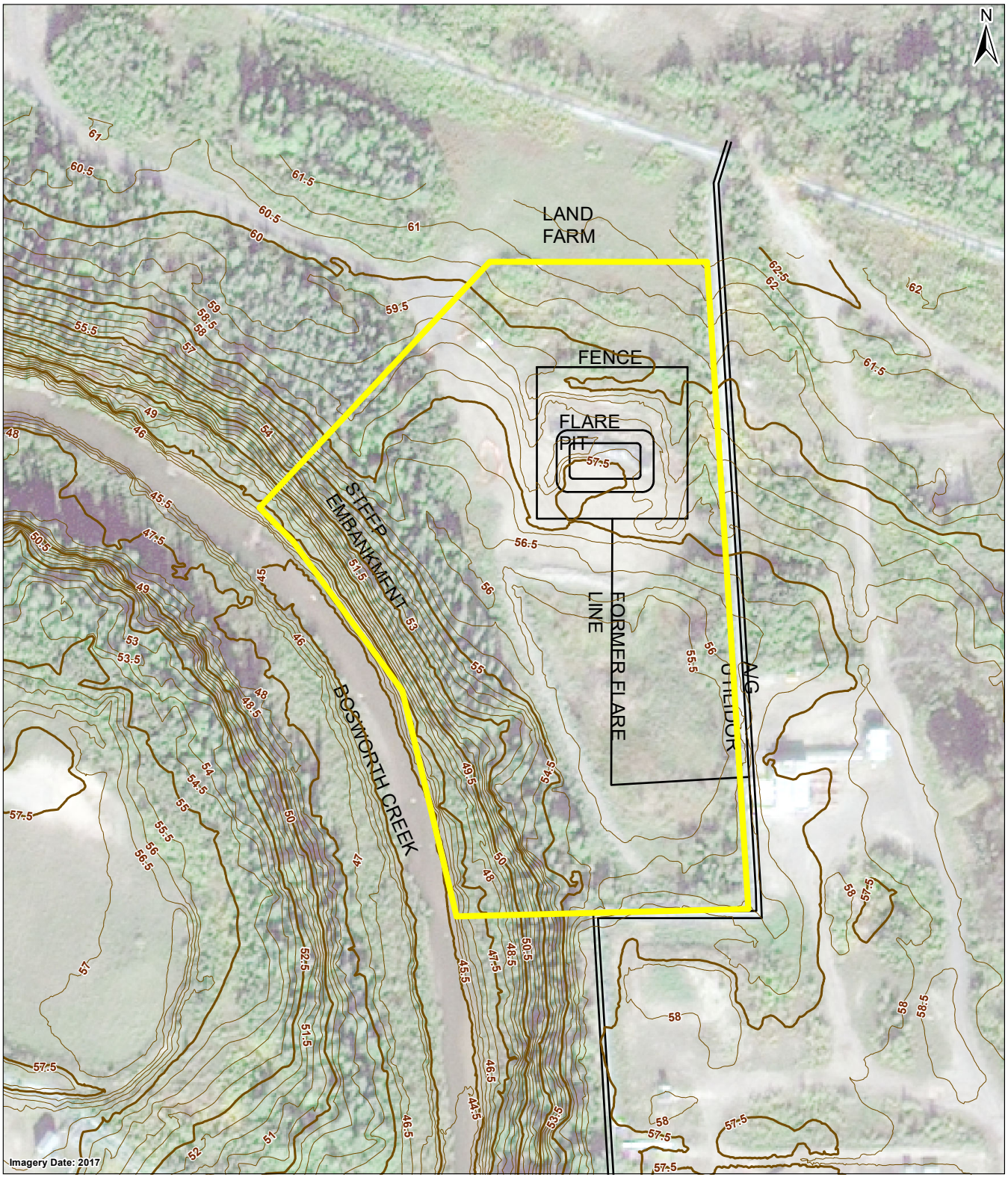

Site Boundary

Elevation Contour (2.5m interval)

Elevation Contour (0.5m interval)

Source:
Airborne Imaging; 2012

0 25 50
Metres

1:1,500

IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

SITE PLAN SHOWING TOPOGRAPHY

Date:	Drawn by:	Edited by:	App'd by:
03-MAY-19	T.G.	T.G.	. .

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FIG No 3

REV A

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USER NAME: Tom.Graham
ISSUING OFFICE: CALGARY GIS

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SAVE DATE & TIME: 28/5/2019 3:57:35 PM
USER NAME: blairfink
ISSUING OFFICE: eCAD

LEGEND

- PRODUCTION WELL LOCATION
- MONITORING WELL LOCATION
- SURFACE WATER SAMPLE LOCATION
- SOIL SAMPLING LOCATION (APPROXIMATE)
- TEST PIT LOCATION
- 2016 EXCAVATION BOUNDARY

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2017.
3. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017

m 0 25 50 75 m

1:1250

IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

SITE PLAN SHOWING SAMPLING LOCATIONS

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29-MAY-19	OTHERS	BMF	

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FIG No: 4A
REV: B

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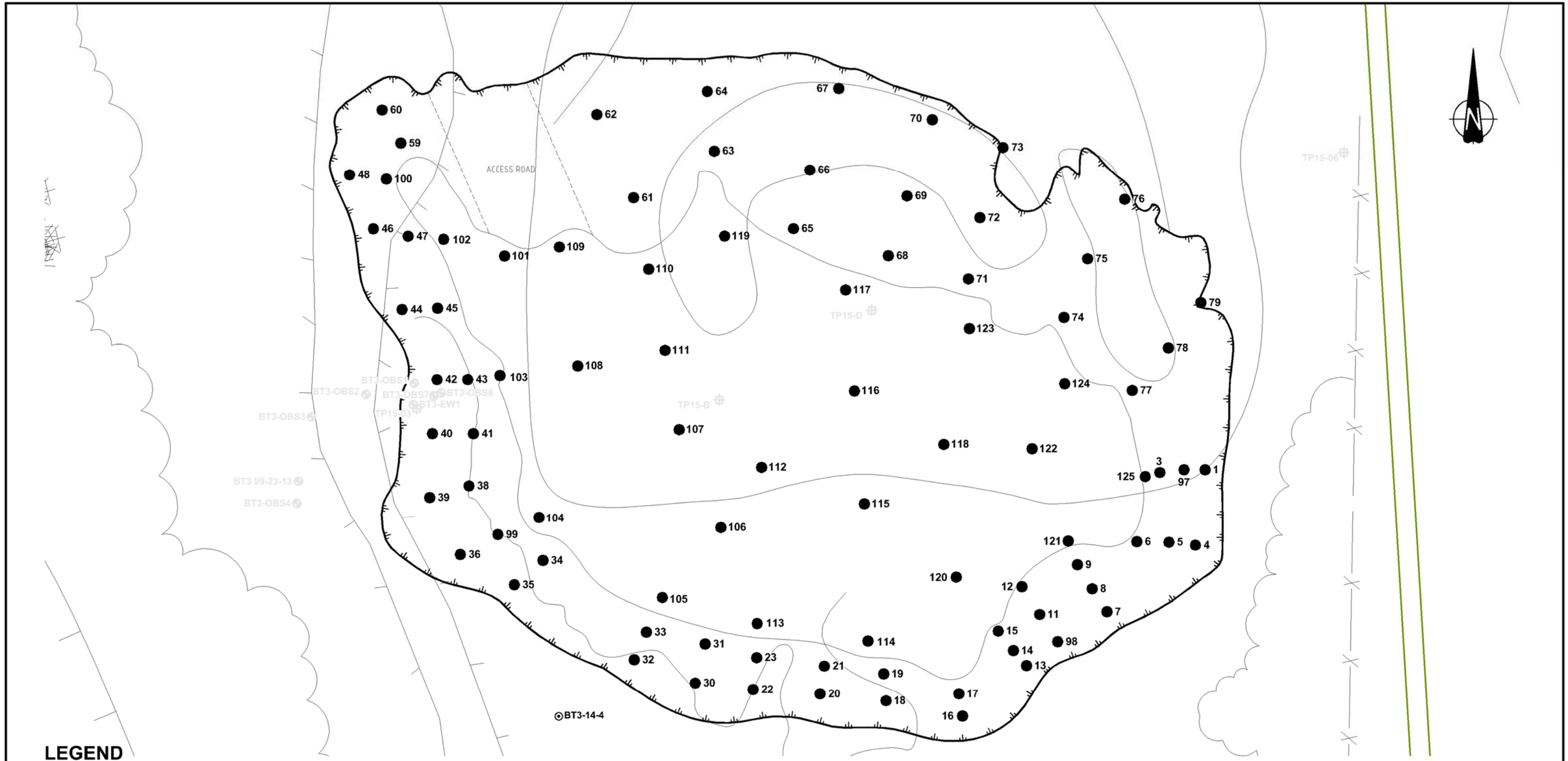

LEGEND

- UTILIDOR LOCATION
- SOIL SAMPLING LOCATION
- ENGLOBE TEST PIT LOCATION
- MONITORING WELL LOCATION
- PERIMETER OF EXCAVATION
- EXCAVATION BASE (APPROXIMATE)
- EXCAVATION SOIL SAMPLE (BT3-16-XX)

IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

EXCAVATION SITE PLAN SHOWING SAMPLING LOCATIONS

Date: 01-MAY-19	Drawn by: OTHERS	Edited by: B.M.F.	App'd by:
Advisian WorleyParsons Group		WorleyParsons Project No. 407011-00622-500	
		FIG No 4B	REV A

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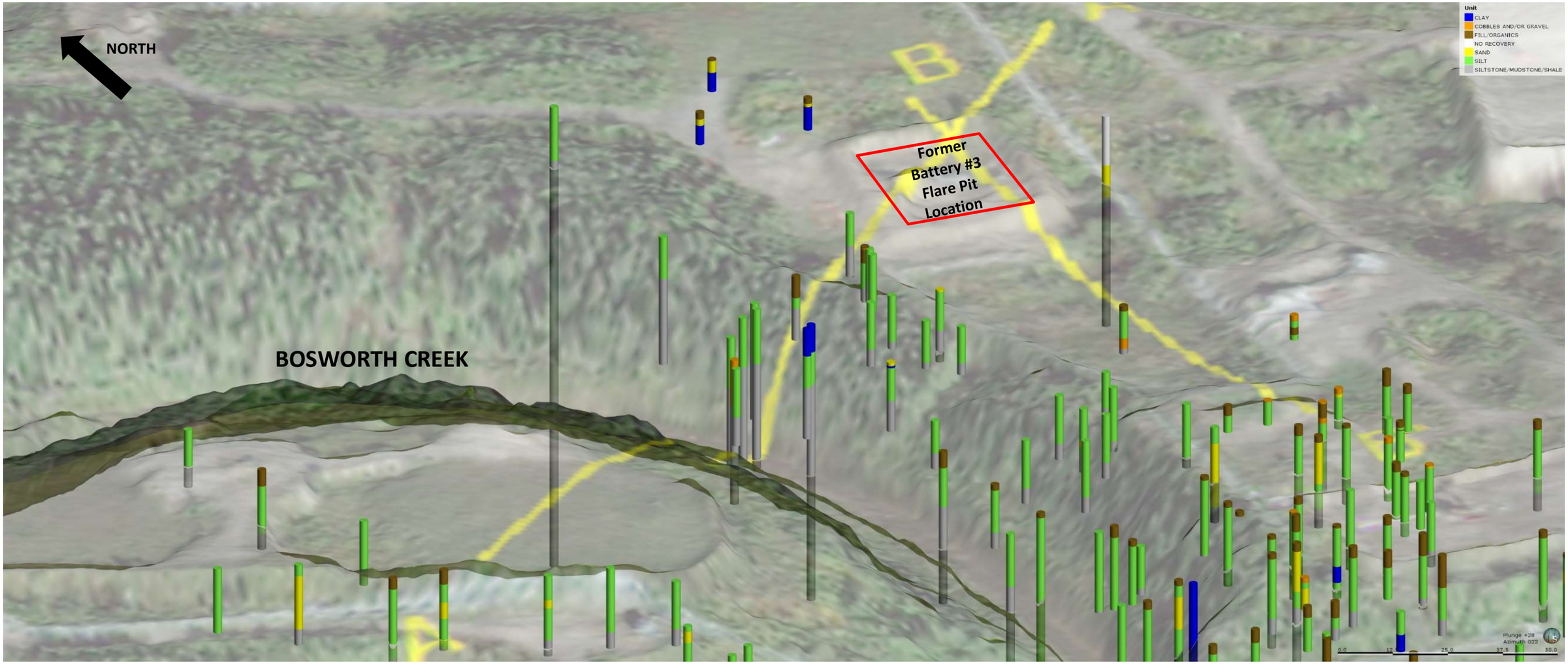

IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

SITE PLAN 3-D VISUALIZATION

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FIG No. 5A

REV B

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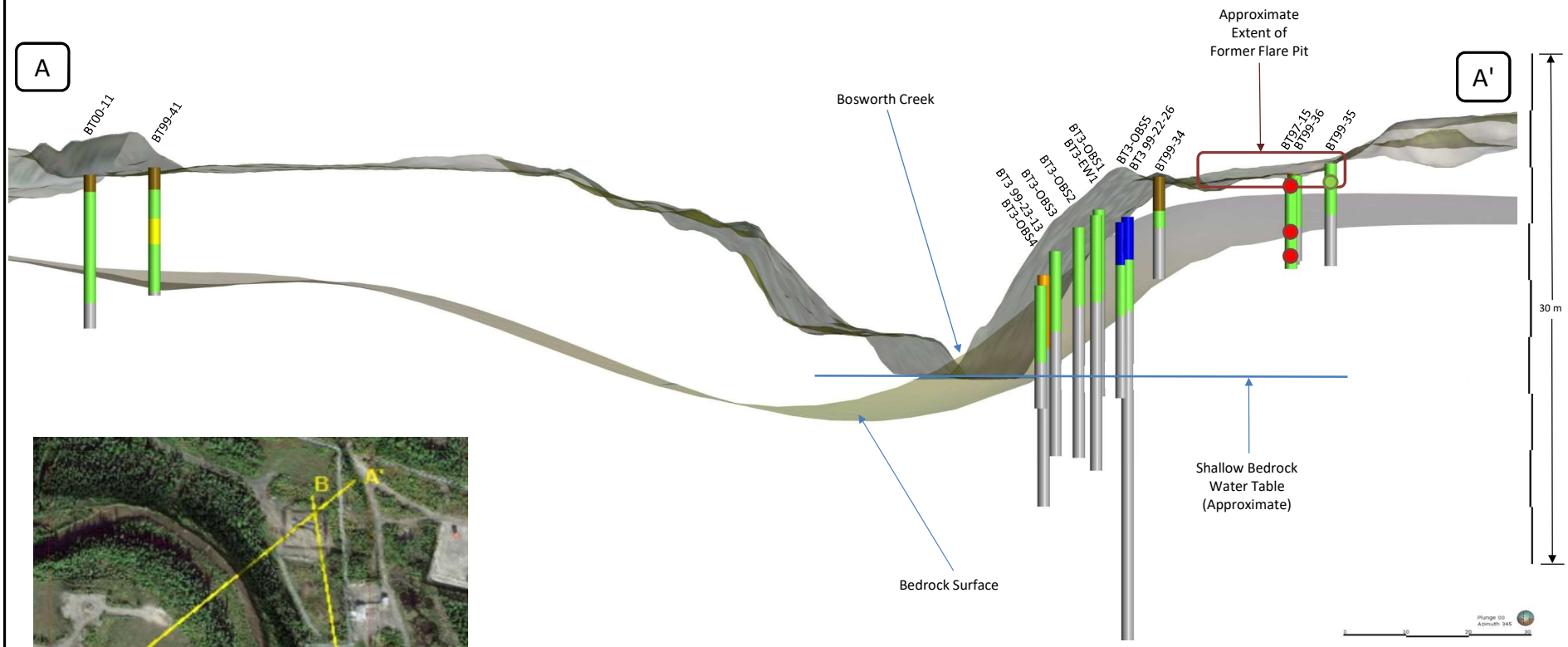

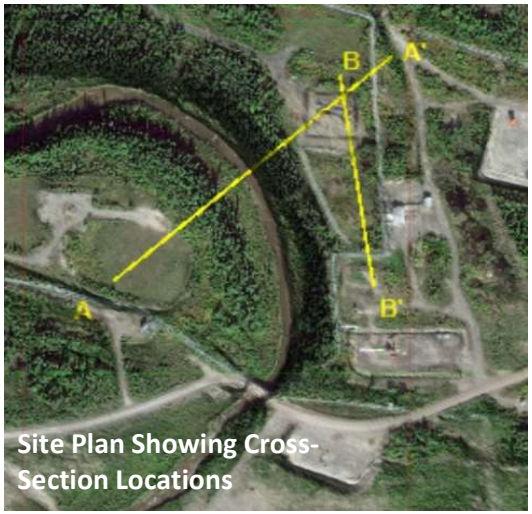

LOCATION WHERE SALINITY PARAMETERS MET GUIDELINES, SHOWN IN GREEN

LOCATION WHERE SALINITY PARAMETERS EXCEEDED GUIDELINES, SHOWN IN RED

Unit
- CLAY
- COBBLES AND/OR GRAVEL
- FILL/ORGANICS
- NO RECOVERY
- SAND
- SILT
- SILTSTONE/MUDSTONE/SHALE

IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

CROSS-SECTION A-A' (SOUTHWEST TO NORTHEAST)

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FIG No. 5B

REV B

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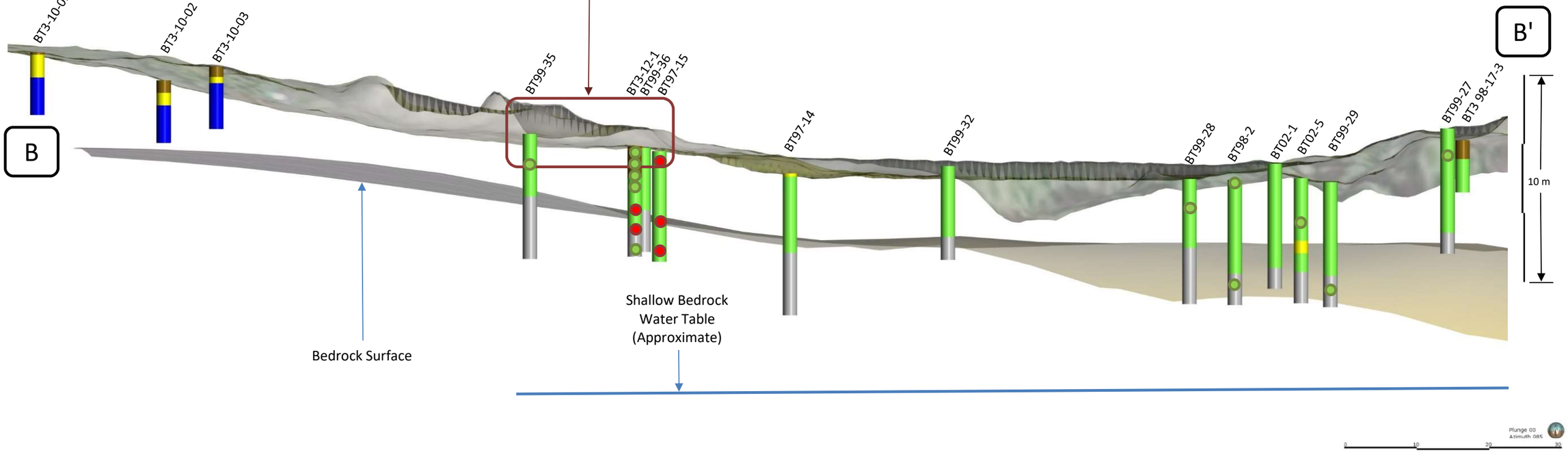
FILE DIRECTORY: U:\CALGBS\407011-00622\400-CONCEPTUAL SITE MODEL\11.0_FIGURES_&_MAPS\11.5_PDF_FINAL_FIGURES\BT3

Site Plan Showing Cross-Section Locations



Unit

- CLAY
- COBBLES AND/OR GRAVEL
- FILL/ORGANICS
- NO RECOVERY
- SAND
- SILT
- SILTSTONE/MUDSTONE/SHALE

LOCATION WHERE SALINITY PARAMETERS MET GUIDELINES, SHOWN IN GREEN

LOCATION WHERE SALINITY PARAMETERS EXCEEDED GUIDELINES, SHOWN IN RED

Note: 3x Vertical Exaggeration
Transect Width: ~30m

IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

CROSS-SECTION B-B' (NORTH TO SOUTH)

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10-May-19	AM	LG	MB

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WorleyParsons Project No.: 407011-00622-500

FIG No.: 5C

REV: B

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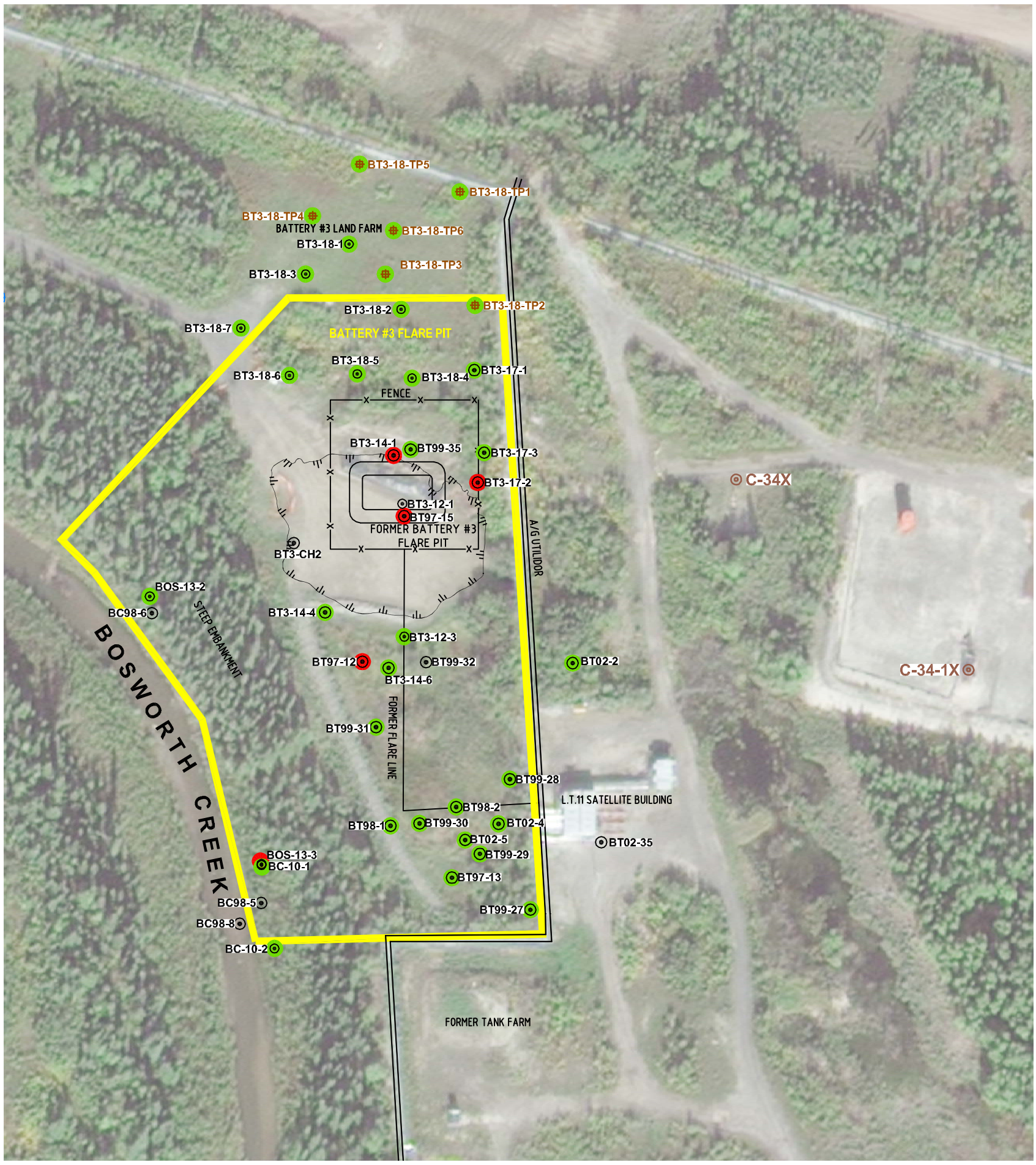
ISSUING OFFICE: eCAD



LEGEND

- PRODUCTION WELL LOCATION
- SOIL SAMPLING LOCATION (APPROXIMATE)
- 2016 EXCAVATION BOUNDARY

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLIED ASSESSMENT CRITERIA FOR ALL SALINITY PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE SALINITY PARAMETER THAT WAS ANALYZED, SHOWN IN RED

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2017.
3. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017

m 0 25 50 75 m

1:1250

IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

SOIL ANALYTICAL RESULTS:
SALINITY PARAMETERS

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28-MAY-19	OTHERS	BMF	

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WorleyParsons Project No. 407011-00622-500

FIG No 6A | REV B

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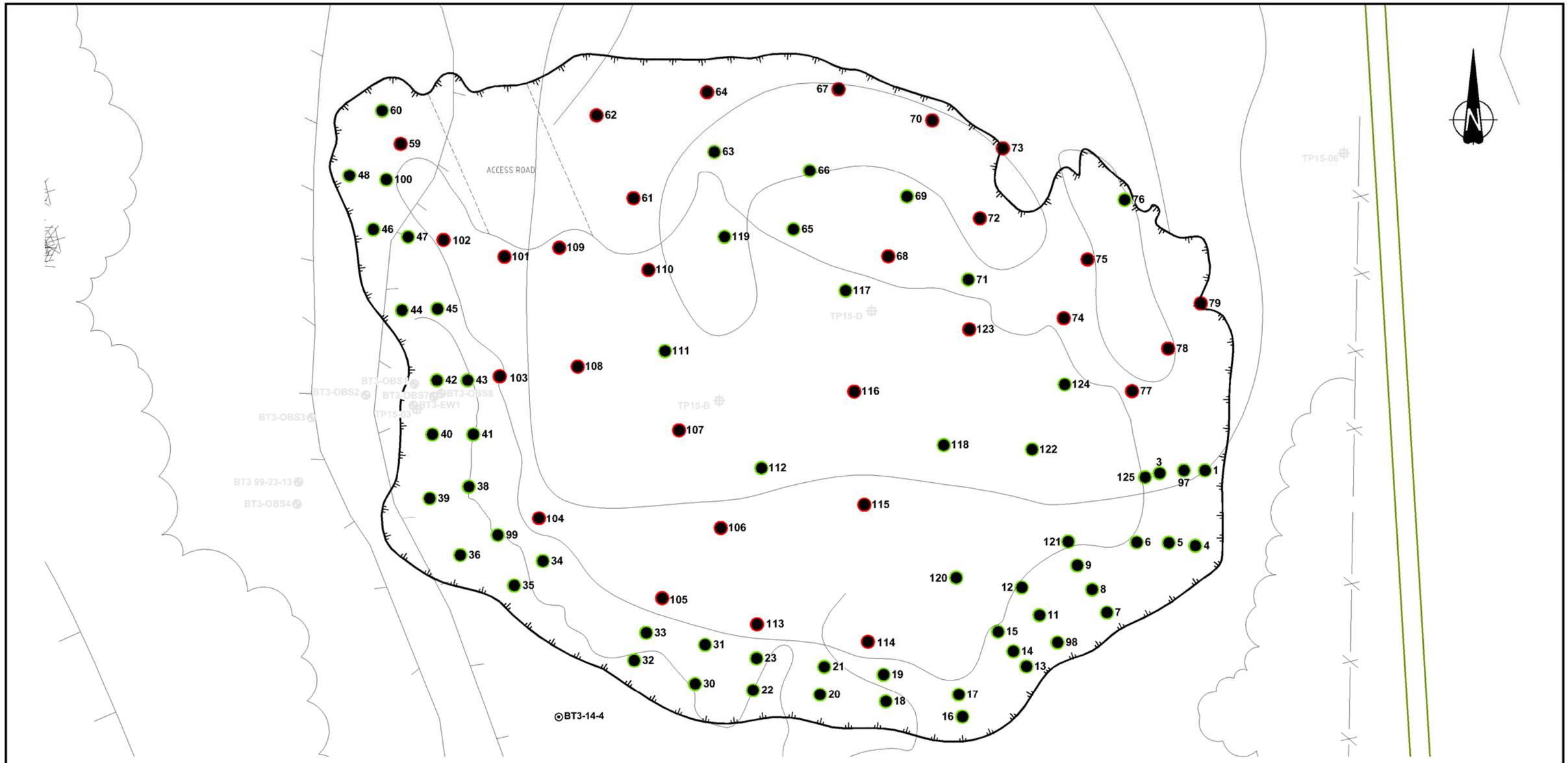

LEGEND

- UTILIDOR LOCATION
- SOIL SAMPLING LOCATION
- ENGLOBE TEST PIT LOCATION
- MONITORING WELL LOCATION
- PERIMETER OF EXCAVATION
- EXCAVATION BASE (APPROXIMATE)
- EXCAVATION SOIL SAMPLE (BT3-16-XX)

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLIED ASSESSMENT CRITERIA FOR ALL SALINITY PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE SALINITY PARAMETER THAT WAS ANALYZED, SHOWN IN RED

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

EXCAVATION SOIL ANALYTICAL RESULTS: SALINITY PARAMETERS

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Advisian WorleyParsons Group		WorleyParsons Project No. 407011-00622-500	
		FIG No 6B	REV A

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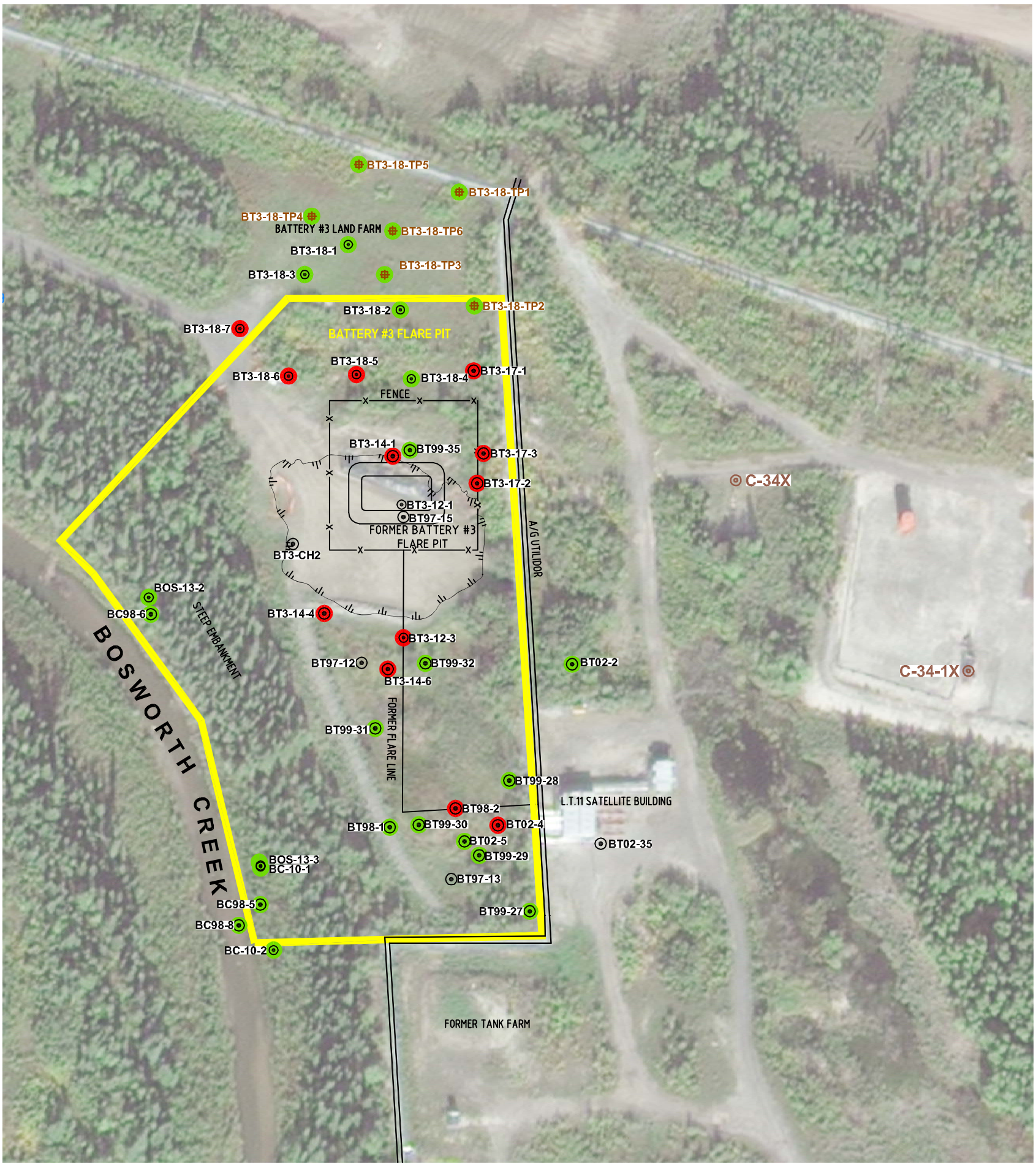

LEGEND

- PRODUCTION WELL LOCATION
- SOIL SAMPLING LOCATION (APPROXIMATE)
- 2016 EXCAVATION BOUNDARY

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLIED ASSESSMENT CRITERIA FOR ALL ORGANIC PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE ORGANIC PARAMETER THAT WAS ANALYZED, SHOWN IN RED

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2017.
3. AIR PHOTO VIA PLANET LABS GEOMATICS CORP., DATE: APRIL 6 AND 30, 2017

m 0 25 50 75 m

1:1250

IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

SOIL ANALYTICAL RESULTS:
ORGANIC PARAMETERS

Date:	Drawn by:	Edited by:	App'd by:
28-MAY-19	OTHERS	BMF	

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WorleyParsons Project No.
407011-00622-500

FIG No: 6C
REV: C

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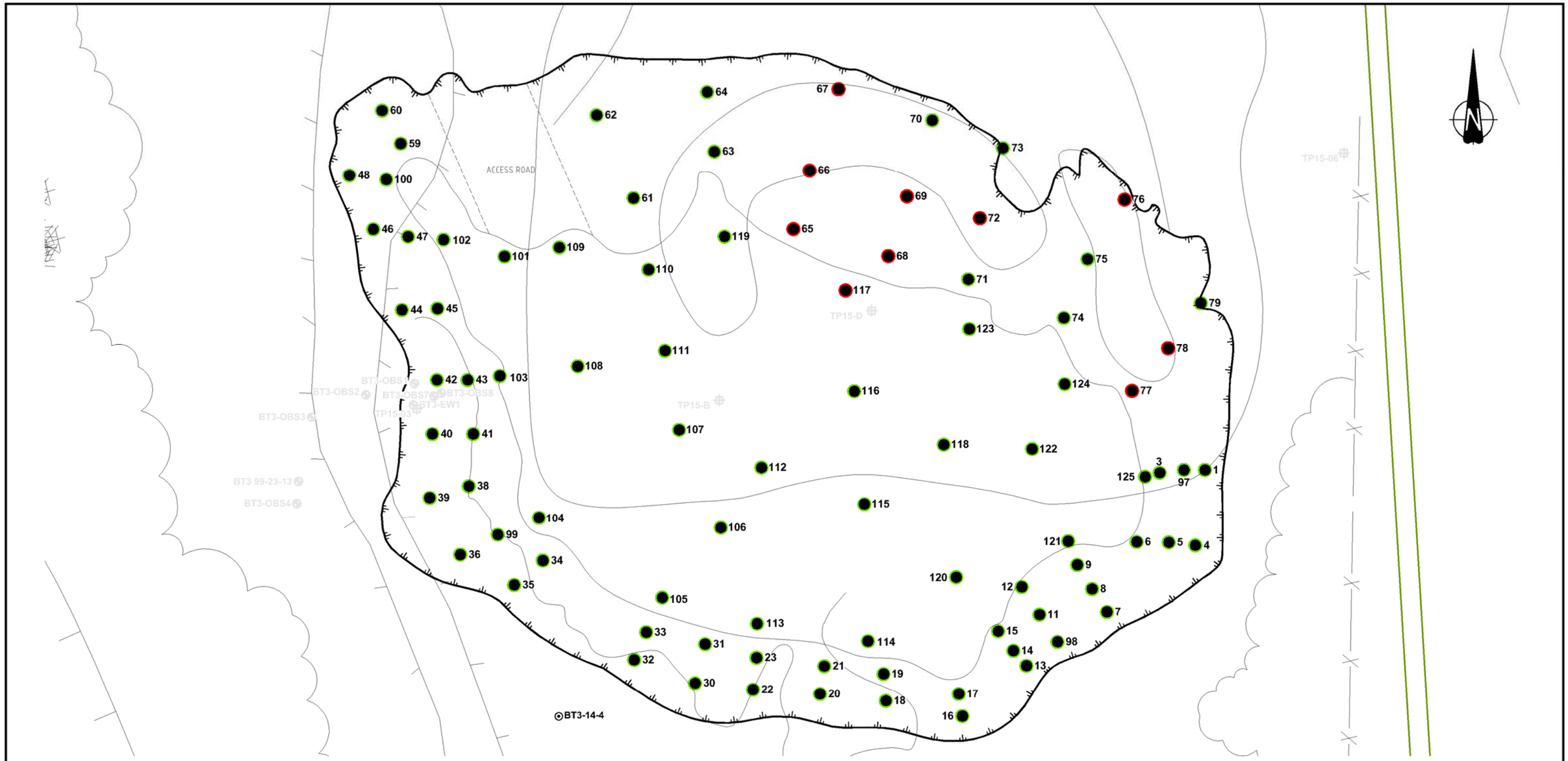

LEGEND

- UTILIDOR LOCATION
- SOIL SAMPLING LOCATION
- ENGLOBE TEST PIT LOCATION
- MONITORING WELL LOCATION
- PERIMETER OF EXCAVATION
- EXCAVATION BASE (APPROXIMATE)
- EXCAVATION SOIL SAMPLE (BT3-16-XX)

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLIED ASSESSMENT CRITERIA FOR ALL ORGANIC PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE ORGANIC PARAMETER THAT WAS ANALYZED, SHOWN IN RED

IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

EXCAVATION SOIL ANALYTICAL RESULTS: ORGANIC PARAMETERS

Date:	Drawn by:	Edited by:	App'd by:
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FIG No 6D | REV B

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SAVE DATE & TIME: 2/5/2019 3:42:05 PM
USER NAME: bkr-tkx
ISSUING OFFICE: CALGARY

FILE LOCATION: U:\CALIGBS\407011-00622-500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-BT3_EXCAVATION.DWG

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018-MAINLANDCENTRAL_CSM.DWG
PLOT DATE & TIME: 29/5/2019 2:07:54 PM
SAVE DATE & TIME: 28/5/2019 3:57:35 PM
USER NAME: Blair.Rink
ISSUING OFFICE: eCAD

LEGEND

- PRODUCTION WELL LOCATION
- MONITORING WELL LOCATION
- SURFACE WATER SAMPLE LOCATION
- 2016 EXCAVATION BOUNDARY

ANALYTICAL RESULTS

- LOCATION WHERE GROUNDWATER SAMPLE MET APPLIED ASSESSMENT CRITERIA FOR DISSOLVED CHLORIDE IN MOST RECENT SAMPLING EVENT, SHOWN IN GREEN.
- LOCATION WHERE GROUNDWATER SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR DISSOLVED CHLORIDE IN MOST RECENT SAMPLING EVENT, SHOWN IN RED
- DISSOLVED CHLORIDE DATA NOT AVAILABLE

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

m 0 25 50 75 m

1:1250

IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

GROUNDWATER AND SURFACE WATER ANALYTICAL RESULTS: DISSOLVED CHLORIDE

Date:	Drawn by:	Edited by:	App'd by:
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FIG No 7A | REV B

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PLOT DATE & TIME: 29/5/2019 2:09:13 PM
SAVE DATE & TIME: 28/5/2019 3:57:35 PM
USER NAME: Blair.Rink
ISSUING OFFICE: eCAD

LEGEND

- PRODUCTION WELL LOCATION
- MONITORING WELL LOCATION
- SURFACE WATER SAMPLE LOCATION
- 2016 EXCAVATION BOUNDARY

ANALYTICAL RESULTS

- LOCATION WHERE GROUNDWATER SAMPLE MET APPLIED ASSESSMENT CRITERIA FOR ALL PETROLEUM HYDROCARBON PARAMETERS THAT WERE ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN GREEN.
- LOCATION WHERE GROUNDWATER SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE PETROLEUM HYDROCARBON PARAMETER THAT WAS ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN RED
- PETROLEUM HYDROCARBON DATA NOT AVAILABLE

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

m 0 25 50 75 m

1:1250

IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

GROUNDWATER AND SURFACE WATER ANALYTICAL RESULTS: PETROLEUM HYDROCARBON PARAMETERS

Date:	Drawn by:	Edited by:	App'd by:
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FIG No 7B | REV C

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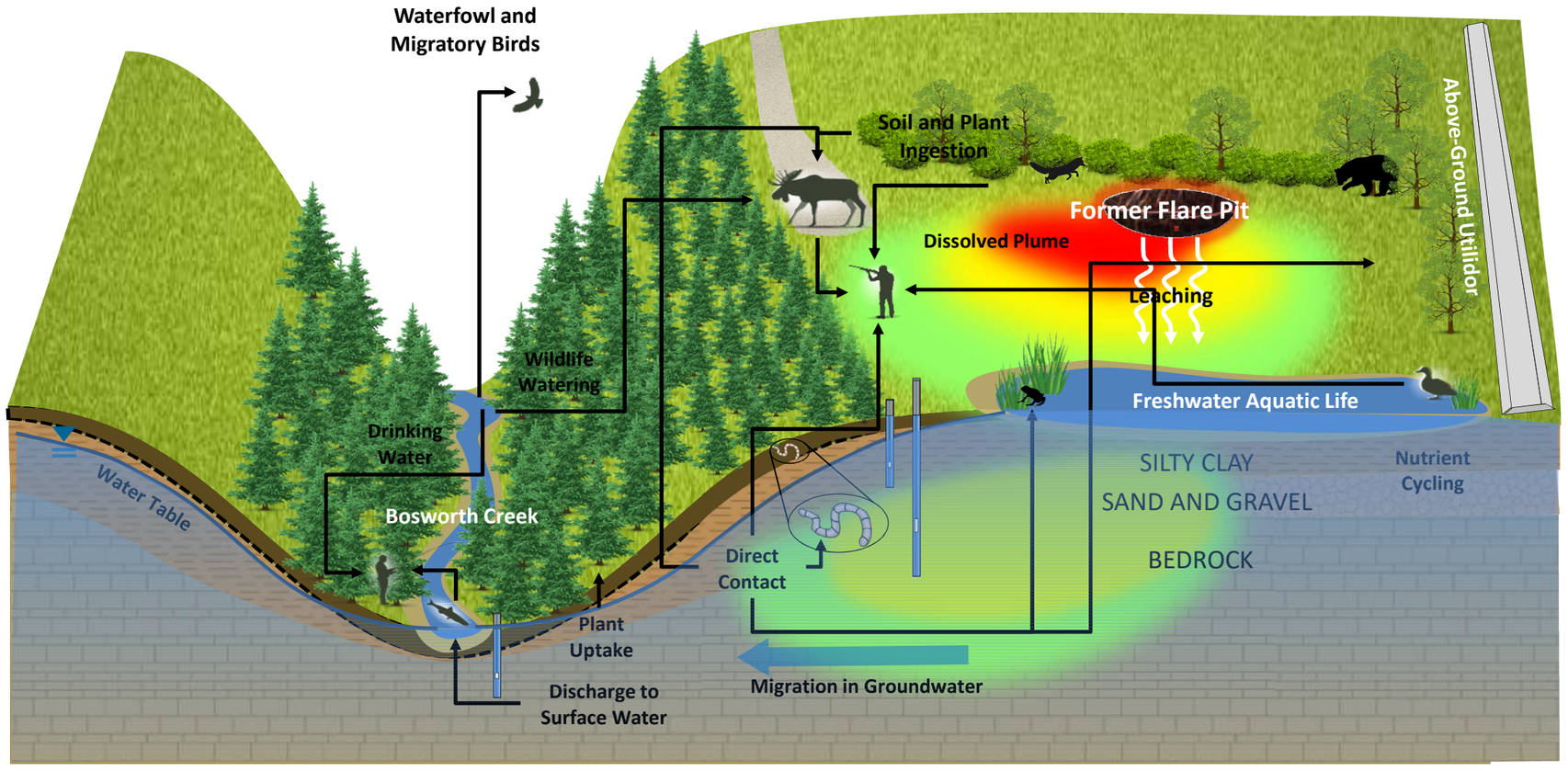

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CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

CONCEPTUAL SITE MODEL

Date:	Drawn by:	Edited by:	App'd by:
10-May-19	AH	LG	MB

OneWay™ to zero harm

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FIG No. 8

REV A

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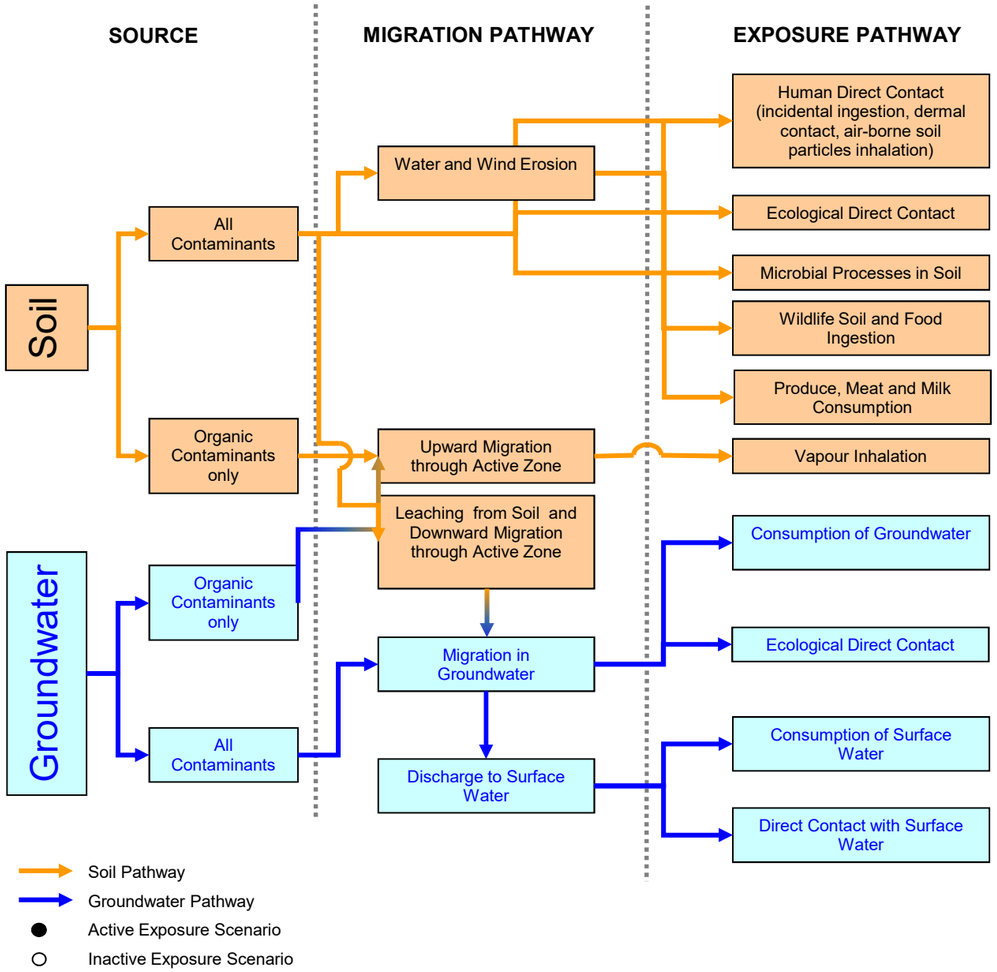
Battery #3 Flare Pit - Conceptual Exposure Model Flow Chart (Current Land Use and Site Conditions)



RECEPTORS			
Humans	Wildlife	Plant and Soil Invertebrates	Freshwater Aquatic Life
●			
		●	
		●	
	●		
●[1]			
○			
		●	
○	●		
			●

Notes: 1) Although the current land use is industrial, it is recognized that due to the size of the site and the geographical features of the area (i.e. river, creek, etc.) animals may move on and off of the site, and hunters are able to hunt in close proximity to the site. As such, meat consumption through hunting should be considered as an active exposure pathway.

IMPERIAL
CONCEPTUAL SITE MODEL
BATTERY #3 FLARE PIT, NORMAN WELLS, NT

CONCEPTUAL EXPOSURE MODEL
CURRENT LAND USE AND SITE CONDITIONS

OneWay to zero harm

Date: 10-May-19 | Drawn by: AH | Edited by: LG | App'd by: MB

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WorleyParsons Project No. 407011-00622-500

FIG No. 9 | REV A

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Tables

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity			Total Metals																			
				Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
CCME Industrial Fine Sub-Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
S-CAT-2				0.71	1.65	7.49	1	12.6	397	0.84	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				1.91	5.68	8.04	1	25.2	398	1.06	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				1.52	22.85	7.67	1	23.8	454	0.93	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
BT97-12	26-Jul-1997	0.0 - 0.8m	**S-CAT-2**	5.6	5.9	---	---	9.3	294	0.7	0.2	17.3	< 0.25	9.4	20.5	13	0.06	2.4	28.1	0.9	---	< 2	---	---	29.3	90.1
BT97-13	29-Jul-1997	0.0 - 0.8m	**S-CAT-2**	0.565	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT97-15	26-Jul-1997	0.0 - 0.8m	**S-CAT-2**	14.7	13.8	---	---	23.9	959	0.9	3.3	23.9	< 0.25	10.3	15.3	17	< 0.05	< 0.4	35.7	0.6	---	< 2	---	---	49.8	98.4
	26-Jul-1997	2.3 - 3.8m	**S-CAT-3**	18.5	13.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Jul-1997	3.8 - 5.3m	**S-CAT-3**	36.9	12.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT98-1	02-Sep-1998	4.5 - 6.0m	**S-CAT-4**	0.661	2.82	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT98-2	02-Sep-1998	0.0 - 0.3m	**S-CAT-2**	0.51	1.03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02-Sep-1998	4.5 - 6.0m	**S-CAT-4**	0.607	4.05	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BC98-5	06-Sep-1998	0.0 - 0.2m	**S-CAT-2**	---	---	---	---	8.7	239	0.7	< 0.2	18	< 0.25	12.3	18.1	14	< 0.05	0.4	31	0.4	---	< 0.5	---	---	21.2	97.2
BC98-6	06-Sep-1998	0.0 - 0.2m	**S-CAT-2**	---	---	---	---	8.6	240	0.8	< 0.2	17.8	< 0.25	12	18.2	15	< 0.05	< 0.4	30.4	0.4	---	< 0.5	---	---	20.7	94.7
BC98-8	06-Sep-1998	0.0 - 0.2m	**S-CAT-2**	---	---	---	---	7.3	258	0.8	< 0.2	17.9	< 0.25	12.6	18.8	14	< 0.05	0.6	31.3	0.3	---	< 0.5	---	---	20.4	94
BT99-27	17-Jun-1999	1.0 - 1.5m	**S-CAT-3**	0.581	1.20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT99-28	17-Jun-1999	1.0 - 1.5m	**S-CAT-3**	0.616	1.77	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT99-29	17-Jun-1999	0.0 - 0.15m	**S-CAT-2**	---	---	---	---	13	260	0.6	0.2	16.6	0.52	10.1	25.0	12	0.06	2.1	32.5	0.9	---	0.3	---	---	29.5	106
	17-Jun-1999	4.5 - 6.0m	**S-CAT-4**	0.327	3.80	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT99-30	17-Jun-1999	0.0 - 0.15m	**S-CAT-2**	---	---	---	---	16	301	0.6	0.2	13.9	< 0.25	8.5	24.9	12	0.10	27.7	31.6	2.1	---	1.8	---	---	53.4	89.6
	17-Jun-1999	3.0 - 4.5m	**S-CAT-3**	1.16	1.33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT99-31	18-Jun-1999	0.0 - 0.15m	**S-CAT-2**	---	---	---	---	13	343	0.5	0.9	13.4	< 0.25	8.7	22.4	16	0.13	16.4	32.0	1.7	---	1.5	---	---	37.0	107
	18-Jun-1999	3.0 - 4.5m	**S-CAT-4**	0.605	0.83	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT99-32	18-Jun-1999	0.0 - 0.15m	**S-CAT-2**	---	---	---	---	8.6	319	0.7	0.9	16.1	< 0.25	10.7	25.4	12	< 0.05	1.1	35.0	0.9	---	< 0.2	---	---	28.9	104
	18-Jun-1999	0.15 - 0.3m	**S-CAT-2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT99-35	18-Jun-1999	1.0 - 1.5m	**S-CAT-3**	2.34	6.62	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT02-2	21-Jul-2002	0.0 - 1.5m	**S-CAT-3**	---	---	---	---	8.8	227	0.5	0.58	15.2	< 0.25	11.1	26.5	10.8	< 0.05	1.8	35.5	0.8	---	0.19	---	---	27	111
	21-Jul-2002	3.0 - 4.5m	**S-CAT-3**	0.542	1.25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT02-4	21-Jul-2002	0.0 - 1.5m	**S-CAT-3**	---	---	---	---	8.4	272	0.5	0.63	15.7	< 0.25	12.3	24.8	11.7	< 0.05	2.7	36.5	0.5	---	0.19	---	---	27	110
	21-Jul-2002	3.0 - 4.5m	**S-CAT-3**	0.981	1.24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity			Total Metals																			
				Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
CCME Industrial Fine Sub-Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
S-CAT-2				0.71	1.65	7.49	1	12.6	397	0.84	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				1.91	5.68	8.04	1	25.2	398	1.06	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				1.52	22.85	7.67	1	23.8	454	0.93	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
BT02-5	21-Jul-2002	0.0 - 1.5m	**S-CAT-3**	---	---	---	---	8.7	295	0.5	0.55	15.5	< 0.25	10.9	25.3	11.4	< 0.05	1.9	32.7	0.5	---	0.17	---	---	25	107
	21-Jul-2002	1.5 - 3.0m	**S-CAT-3**	0.726	1.30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-10-1	02-Sep-2010	0.0 - 0.3m	**S-CAT-2**	3.2	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-10-2	02-Sep-2010	0.0 - 0.3m	**S-CAT-2**	2.2	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-12-1	13-Jul-2012	0.0 - 0.5m	**S-CAT-2**	1.8	0.97	6.87	1.3	19	960	0.76	0.30	79	< 0.15	9.8	25	43	< 0.050	12	57	0.87	< 1.0	0.42	3.5	2.5	86	170
	13-Jul-2012	0.5 - 1.0m	**S-CAT-3**	3.7	5.6	7.54	< 1.0	41	340	0.41	0.24	17	< 0.15	8.1	16	17	< 0.050	1.4	29	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	40	91
	13-Jul-2012	1.0 - 1.5m	**S-CAT-3**	0.69	7.5	7.53	< 1.0	14	460	0.56	0.86	20	< 0.15	9.6	14	84	< 0.050	2.1	32	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	39	190
	13-Jul-2012	1.5 - 2.0m	**S-CAT-3**	1.0	12	7.34	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jul-2012	2.5 - 3.0m	**S-CAT-3**	1.1	17	7.28	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jul-2012	3.4 - 3.9m	**S-CAT-3**	1.5	18	7.56	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jul-2012	4.5 - 5.3m	**S-CAT-4**	1.9	20	7.73	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-12-3	14-Jul-2012	0.0 - 0.4m	**S-CAT-2**	0.63	0.40	7.00	< 1.0	9.5	330	0.69	0.60	22	< 0.15	10	24	22	< 0.050	2.2	33	0.94	< 1.0	< 0.30	< 1.0	2.0	39	97
	14-Jul-2012	0.4 - 0.9m	**S-CAT-3**	0.66	0.50	7.01	< 1.0	11	300	0.69	0.66	21	< 0.15	11	25	11	< 0.050	2.4	34	0.95	< 1.0	< 0.30	< 1.0	1.1	36	100
	14-Jul-2012	1.4 - 1.8m	**S-CAT-3**	0.53	0.40	6.99	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Jul-2012	1.8 - 2.5m	**S-CAT-3**	0.61	0.43	7.35	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Jul-2012	3.0 - 4.0m	**S-CAT-3**	0.84	1.4	7.27	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BOS-13-2	07-Sep-2013	0.5 - 0.8m	**S-CAT-3**	2.0	5.4	6.70	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	07-Sep-2013	0.9 - 1.1m	**S-CAT-3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BOS-13-3	08-Sep-2013	0.5 - 0.7m	**S-CAT-3**	2.1	11	6.77	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	08-Sep-2013	1.3 - 1.5m	**S-CAT-3**	1.6	13	6.73	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-14-1	04-Mar-2014	1.0m	**S-CAT-3**	35	41	7.83	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	2.0m	**S-CAT-3**	68	47	7.51	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	3.0m	**S-CAT-3**	36	65	7.62	< 1.0	4.3	130	0.44	1.3	14	< 0.15	7.5	17	39	< 0.050	1.4	23	< 0.50	< 1.0	0.56	< 1.0	< 1.0	25	140
	04-Mar-2014	4.0m	**S-CAT-3**	18	19	7.27	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	5.0m	**S-CAT-3**	13	14	7.42	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	6.0m	**S-CAT-3**	7.9	22	7.68	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
CCME Industrial Fine Sub-Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
S-CAT-2				0.71	1.65	7.49	1	12.6	397	0.84	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				1.91	5.68	8.04	1	25.2	398	1.06	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				1.52	22.85	7.67	1	23.8	454	0.93	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
BT3-14-4	04-Mar-2014	1.0m	**S-CAT-3**	2.5	6.9	7.17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	2.0m	**S-CAT-3**	2.4	4.9	7.16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	3.0m	**S-CAT-3**	1.8	3.5	7.04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	4.0m	**S-CAT-3**	3.4	4.3	7.14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	5.0m	**S-CAT-3**	2.1	4.0	7.20	< 1.0	11	250	0.50	0.22	21	< 0.15	11	17	8.5	< 0.050	0.74	32	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	31	84
	04-Mar-2014	5.5m	**S-CAT-3**	1.3	2.6	7.42	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-14-6	03-Mar-2014	1.0m	**S-CAT-3**	0.46	1.4	7.31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Mar-2014	2.0m	**S-CAT-3**	0.55	0.98	7.05	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Mar-2014	3.0m	**S-CAT-3**	0.63	1.5	7.11	< 1.0	8.9	310	0.54	0.49	18	< 0.15	9.8	22	10	0.080	2.0	30	0.70	< 1.0	< 0.30	< 1.0	< 1.0	27	89
	03-Mar-2014	4.0m	**S-CAT-3**	0.44	2.4	7.38	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Mar-2014	4.5m	**S-CAT-3**	0.53	2.9	7.55	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-01	26-Jun-2016	1.0	**S-CAT-3**	3.3	3.2	7.19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-03	26-Jun-2016	3.0	**S-CAT-3**	1.7	1.8	7.35	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-04	26-Jun-2016	1.0	**S-CAT-3**	1.9	1.5	7.36	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-05	26-Jun-2016	2.0	**S-CAT-3**	2.3	1.7	7.29	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-06	26-Jun-2016	3.0	**S-CAT-3**	1.4	0.96	7.27	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-07	26-Jun-2016	1.0	**S-CAT-3**	1.9	1.1	7.27	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-08	26-Jun-2016	2.0	**S-CAT-3**	1.4	1.5	7.06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-09	26-Jun-2016	3.0	**S-CAT-3**	1.9	1.9	7.29	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-11	26-Jun-2016	2.0	**S-CAT-3**	2.1	3.5	7.07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-12	26-Jun-2016	3.0	**S-CAT-3**	1.9	3.8	7.05	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-13	26-Jun-2016	1.0	**S-CAT-3**	2.2	6.6	7.44	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-14	26-Jun-2016	2.0	**S-CAT-3**	2.4	5.4	7.29	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-15	26-Jun-2016	3.0	**S-CAT-3**	2.1	4.9	7.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-16	27-Jun-2016	1.0	**S-CAT-3**	0.95	3.2	7.24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity			Total Metals																			
				Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
CCME Industrial Fine Sub-Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
S-CAT-2				0.71	1.65	7.49	1	12.6	397	0.84	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				1.91	5.68	8.04	1	25.2	398	1.06	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				1.52	22.85	7.67	1	23.8	454	0.93	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
BT3-16-17	27-Jun-2016	2.0	**S-CAT-3**	0.75	1.1	6.84	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-18	27-Jun-2016	1.0	**S-CAT-3**	0.84	2	7.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-19	27-Jun-2016	2.0	**S-CAT-3**	0.82	1.2	6.96	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-20	27-Jun-2016	1.0	**S-CAT-3**	2.7	6.3	7.19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-21	27-Jun-2016	2.0	**S-CAT-3**	2.3	5.8	7.15	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-22	28-Jun-2016	1.0	**S-CAT-3**	1.4	6.6	7.23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-23	28-Jun-2016	2.0	**S-CAT-3**	1.4	4	7.14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-30	06-Jul-2016	1.0	**S-CAT-3**	2.5	6.4	6.97	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-31	06-Jul-2016	2.0	**S-CAT-3**	2.3	5.4	7.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-32	06-Jul-2016	1.0	**S-CAT-3**	3.3	7.6	7.22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-33	06-Jul-2016	2.0	**S-CAT-3**	1.5	4.8	7.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-34	06-Jul-2016	1.0	**S-CAT-3**	1.8	4.3	7.23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-35	06-Jul-2016	2.0	**S-CAT-3**	3.9	4.3	7.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-36	06-Jul-2016	1.0	**S-CAT-3**	2.7	4.3	7.22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-38	07-Jul-2016	2.0	**S-CAT-3**	1.8	2.3	7.04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-39	07-Jul-2016	1.0	**S-CAT-3**	3.6	2.2	7.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-40	07-Jul-2016	1.0	**S-CAT-3**	1.1	1.5	7.04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-41	07-Jul-2016	2.0	**S-CAT-3**	2.7	2.2	7.29	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-42	07-Jul-2016	1.0	**S-CAT-3**	3	2.5	6.56	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-43	07-Jul-2016	2.0	**S-CAT-3**	2.2	1.9	7.32	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-44	07-Jul-2016	1.0	**S-CAT-3**	4	3.7	6.83	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-45	07-Jul-2016	2.0	**S-CAT-3**	1.4	1.1	6.99	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-46	07-Jul-2016	1.0	**S-CAT-3**	2.1	2.9	6.73	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-47	07-Jul-2016	2.0	**S-CAT-3**	1.4	5.6	6.87	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity			Total Metals																			
				Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
CCME Industrial Fine Sub-Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
S-CAT-2				0.71	1.65	7.49	1	12.6	397	0.84	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				1.91	5.68	8.04	1	25.2	398	1.06	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				1.52	22.85	7.67	1	23.8	454	0.93	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
BT3-16-48	07-Jul-2016	1.0	**S-CAT-3**	1.6	4.7	7.06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-60	07-Jul-2016	1.0	**S-CAT-3**	4	8.9	7.51	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-63	08-Jul-2016	2.5	**S-CAT-3**	1.4	2.4	7.63	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-71	08-Jul-2016	3.0	**S-CAT-3**	3.1	6.7	7.62	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-77	08-Jul-2016	3.0	**S-CAT-3**	4.2	15	7.45	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-78	08-Jul-2016	2.0	**S-CAT-3**	17	18	7.21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-79	08-Jul-2016	1.0	**S-CAT-3**	17	5.3	7.07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-97	22-Jul-2016	2.0	**S-CAT-3**	1.6	2.3	7.44	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-98	22-Jul-2016	1.0	**S-CAT-3**	0.98	1.1	7.28	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-99	22-Jul-2016	2.0	**S-CAT-3**	2.6	2	7.26	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-100	22-Jul-2016	2.0	**S-CAT-3**	3.4	12	7.43	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-101	24-Jul-2016	4.5	**S-CAT-4**	23	12	7.35	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-102	24-Jul-2016	4.5	**S-CAT-4**	5.5	12	7.41	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-103	24-Jul-2016	4.5	**S-CAT-4**	30	22	7.36	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-104	24-Jul-2016	4.5	**S-CAT-4**	10	7.5	7.37	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-105	24-Jul-2016	4.5	**S-CAT-4**	5.8	3.5	7.26	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-106	24-Jul-2016	4.5	**S-CAT-4**	16	18	7.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-107	24-Jul-2016	4.5	**S-CAT-4**	15	6.2	7.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-108	24-Jul-2016	4.5	**S-CAT-4**	4.4	4	7.38	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-109	24-Jul-2016	4.5	**S-CAT-4**	18	10	7.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-110	24-Jul-2016	4.5	**S-CAT-4**	25	17	7.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-111	24-Jul-2016	4.5	**S-CAT-4**	3.6	3.9	7.33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-112	25-Jul-2016	4.5	**S-CAT-4**	2	2.1	7.38	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-113	25-Jul-2016	4.5	**S-CAT-4**	7.1	3.4	7.37	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity			Total Metals																			
				Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
CCME Industrial Fine Sub-Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
S-CAT-2				0.71	1.65	7.49	1	12.6	397	0.84	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				1.91	5.68	8.04	1	25.2	398	1.06	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				1.52	22.85	7.67	1	23.8	454	0.93	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
BT3-16-114	25-Jul-2016	4.5	**S-CAT-4**	6.7	3.6	7.34	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-115	25-Jul-2016	4.5	**S-CAT-4**	8.6	5.7	7.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-116	25-Jul-2016	4.5	**S-CAT-4**	4.1	3.8	7.16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-117	25-Jul-2016	4.5	**S-CAT-4**	3.3	22	7.62	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-118	25-Jul-2016	4.5	**S-CAT-4**	3.3	3.1	7.27	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-119	25-Jul-2016	4.5	**S-CAT-4**	1.7	6.2	7.61	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-120	25-Jul-2016	4.5	**S-CAT-4**	1.2	0.53	7.27	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-121	25-Jul-2016	4.5	**S-CAT-4**	0.8	0.59	7.28	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-122	25-Jul-2016	4.5	**S-CAT-4**	2.1	1.2	7.29	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-123	25-Jul-2016	4.5	**S-CAT-4**	5.9	5.4	4.97	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-124	25-Jul-2016	4.5	**S-CAT-4**	1.7	2	7.62	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-125	25-Jul-2016	4.5	**S-CAT-4**	1.2	0.62	7.33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-59	07-Jul-2016	2.0	**S-CAT-3**	7.5	13	7.36	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-61	08-Jul-2016	2.5	**S-CAT-3**	14	16	7.46	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-62	08-Jul-2016	1.0	**S-CAT-3**	9.9	13	7.39	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-64	08-Jul-2016	1.0	**S-CAT-3**	36	49	7.43	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-65	08-Jul-2016	3.0	**S-CAT-3**	0.94	4.2	7.78	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-66	08-Jul-2016	2.0	**S-CAT-3**	1.5	3	7.45	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-67	08-Jul-2016	1.0	**S-CAT-3**	100	52	6.78	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-68	08-Jul-2016	3.0	**S-CAT-3**	4.3	3.1	7.71	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-69	08-Jul-2016	2.0	**S-CAT-3**	3.6	4.2	7.66	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-70	08-Jul-2016	1.0	**S-CAT-3**	24	28	7.52	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-72	08-Jul-2016	2.0	**S-CAT-3**	2.3	14	7.31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-73	08-Jul-2016	1.0	**S-CAT-3**	> 110	59	7.34	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
CCME Industrial Fine Sub-Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
S-CAT-2				0.71	1.65	7.49	1	12.6	397	0.84	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				1.91	5.68	8.04	1	25.2	398	1.06	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				1.52	22.85	7.67	1	23.8	454	0.93	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
BT3-16-74	08-Jul-2016	3.0	**S-CAT-3**	6.7	33	7.54	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-75	08-Jul-2016	2.0	**S-CAT-3**	2	25	7.68	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-76	08-Jul-2016	1.0	**S-CAT-3**	0.72	3	7.33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-17-1	22-Sep-2017	0.5 - 1.0m	**S-CAT-3**	0.27	0.78	7.60	0.59	9.9	340	0.54	0.50	19	< 0.080	10	23	11	---	2.1	31	0.67	< 0.20	0.16	< 1.0	0.86	29	95
	22-Sep-2017	2.0 - 2.5m	**S-CAT-3**	0.37	0.48	7.58	0.62	10	310	0.48	0.55	17	< 0.080	10	22	10	---	2.1	30	< 0.50	< 0.20	0.18	< 1.0	0.88	26	96
	22-Sep-2017	4.0 - 4.5m	**S-CAT-3**	1.8	0.20	7.52	< 0.50	11	180	0.43	0.41	17	< 0.080	10	20	9.3	---	1.6	30	< 0.50	< 0.20	0.14	< 1.0	0.82	26	90
BT3-17-2	22-Sep-2017	0.5 - 1.0m	**S-CAT-3**	8.7	2.0	7.28	0.58	9.0	480	0.58	0.62	15	< 0.080	7.5	16	10	---	0.93	26	0.82	< 0.20	< 0.10	< 1.0	1.4	31	76
	22-Sep-2017	1.5 - 2.0m	**S-CAT-3**	1.8	8.4	7.71	0.52	11	270	0.49	0.41	20	< 0.080	9.8	20	9.9	---	1.7	31	< 0.50	< 0.20	0.16	< 1.0	0.81	29	89
BT3-17-3	22-Sep-2017	0.5 - 1.0m	**S-CAT-3**	3.6	3.7	7.49	0.52	8.7	300	0.51	0.32	17	< 0.080	8.4	21	9.2	---	1.4	29	0.57	< 0.20	0.12	< 1.0	0.80	27	72
(Duplicate)	22-Sep-2017	0.5 - 1.0m	**S-CAT-3**	3.4	3.3	7.34	0.54	8.2	280	0.48	0.30	18	< 0.080	8.1	21	8.9	---	1.5	28	0.50	< 0.20	0.13	< 1.0	0.75	27	75
	22-Sep-2017	1.5 - 2.0m	**S-CAT-3**	0.39	0.43	7.59	< 0.50	9.7	270	0.41	0.45	17	< 0.080	9.5	21	9.9	---	1.9	29	< 0.50	< 0.20	0.16	< 1.0	0.91	26	89
	22-Sep-2017	3.0 - 3.5m	**S-CAT-3**	2.5	0.16	7.42	0.56	8.5	140	0.43	0.47	17	< 0.080	10	21	9.3	---	1.7	29	0.50	< 0.20	0.14	< 1.0	0.87	26	92
BT3-18-1	19-Jun-2018	1.0 - 1.5m	**S-CAT-3**	0.65	2.7	7.65	0.62	10	310	0.43	0.57	17	< 0.080	10	23	9.9	< 0.050	2.3	31	0.63	< 0.20	0.16	< 1.0	0.89	26	95
	19-Jun-2018	3.75 - 4.5m	**S-CAT-3**	3.0	0.19	7.75	0.52	12	210	0.44	0.37	24	< 0.080	12	23	10	< 0.050	1.7	36	0.56	< 0.20	0.14	< 1.0	0.81	32	100
	19-Jun-2018	5.25 - 6.0m	**S-CAT-3**	1.1	0.33	7.79	0.57	12	200	< 0.40	0.45	19	< 0.080	10	22	9.2	< 0.050	1.9	32	0.64	< 0.20	0.15	< 1.0	0.88	29	98
BT3-18-2	20-Jun-2018	0.5 - 1.5m	**S-CAT-3**	0.51	0.94	7.72	0.68	9.9	320	0.52	0.47	19	< 0.080	10	24	10	0.050	2.2	31	0.57	< 0.20	0.17	< 1.0	0.89	29	96
	20-Jun-2018	3.0 - 3.75m	**S-CAT-3**	0.49	0.78	7.78	< 0.50	23	250	0.47	0.28	23	< 0.080	11	20	8.7	0.052	1.4	34	< 0.50	< 0.20	0.14	< 1.0	0.57	32	92
(Duplicate)	20-Jun-2018	3.0 - 3.75m	**S-CAT-3**	0.33	0.98	7.71	0.51	25	270	0.52	0.32	26	< 0.080	13	23	9.9	< 0.050	2.1	39	< 0.50	< 0.20	0.15	< 1.0	0.71	37	110
	20-Jun-2018	5.25 - 6.0m	**S-CAT-4**	0.78	1.2	7.75	< 0.50	19	89	0.53	0.11	30	< 0.080	15	24	8.4	< 0.050	0.52	48	< 0.50	< 0.20	< 0.10	< 1.0	0.41	44	120
	20-Jun-2018	6.75 - 7.5m	**S-CAT-4**	0.57	5.7	7.86	< 0.50	21	170	0.62	0.16	32	< 0.080	15	25	9.8	0.062	0.84	47	< 0.50	< 0.20	0.12	< 1.0	0.56	48	120
BT3-18-3	20-Jun-2018	0.75 - 1.5m	**S-CAT-3**	0.90	0.48	7.62	0.59	9.4	300	0.49	0.47	17	< 0.080	9.8	21	9.7	< 0.050	2.0	29	0.63	< 0.20	0.16	< 1.0	0.86	27	92
	20-Jun-2018	3.75 - 4.5m	**S-CAT-3**	0.91	0.54	7.75	0.52	13	230	0.44	0.39	19	< 0.080	10	21	9.1	< 0.050	1.9	31	0.59	< 0.20	0.16	< 1.0	0.84	29	89
	20-Jun-2018	5.25 - 6.0m	**S-CAT-4**	0.71	2.1	7.84	0.53	23	130	0.57	0.12	29	< 0.080	14	26	8.9	< 0.050	1.0	42	< 0.50	< 0.20	0.14	< 1.0	0.49	46	110
BT3-18-4	20-Jun-2018	1.0 - 1.5m	**S-CAT-3**	0.30	0.74	7.73	0.60	11	270	0.44	0.45	21	< 0.080	9.8	22	9.4	< 0.050	2.0	32	< 0.50	< 0.20	0.16	< 1.0	0.84	30	91
	20-Jun-2018	2.25 - 3.0m	**S-CAT-3**	1.2	0.41	7.50	0.67	13	180	0.48	0.52	18	< 0.080	11	23	9.9	0.056	2.3	31	0.74	< 0.20	0.16	< 1.0	1.9	28	97
	20-Jun-2018	3.75 - 4.5m	**S-CAT-4**	0.48	1.1	7.85	< 0.50	22	110	0.53	0.085	31	< 0.080	13	16	7.2	0.054	0.45	42	< 0.50	< 0.20	< 0.10	< 1.0	0.45	61	100

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				**4**	**12**	**(6 - 8)**	**40**	**12**	**2000**	**8**	**22**	**87**	**1.4**	**300**	**91**	**600**	**50**	**40**	**89**	**2.9**	**40**	**1**	**300**	**300**	**130**	**410**
CCME Industrial Fine Sub-Surface				**4**	**12**	**(6 - 8)**	**40**	**12**	**2000**	**8**	**22**	**87**	**1.4**	**300**	**91**	**600**	**50**	**40**	**89**	**2.9**	**40**	**1**	**300**	**300**	**130**	**410**
S-CAT-2				**0.71**	**1.65**	**7.49**	**1**	**12.6**	**397**	**0.84**	**0.89**	**29.8**	**0.15**	**14**	**26**	**13.2**	**0.08**	**2.6**	**41.6**	**0.89**	**---**	**0.3**	**---**	**1.5**	**46.1**	**142**
S-CAT-3				**1.91**	**5.68**	**8.04**	**1**	**25.2**	**398**	**1.06**	**0.89**	**35**	**0.18**	**18.9**	**37.8**	**18.4**	**0.11**	**5.58**	**60.4**	**1.28**	**---**	**0.7**	**---**	**2**	**48.6**	**148**
S-CAT-4				**1.52**	**22.85**	**7.67**	**1**	**23.8**	**454**	**0.93**	**0.12**	**41.8**	**0.15**	**21.8**	**50**	**14.8**	**0.11**	**0.74**	**63.2**	**0.5**	**---**	**0.3**	**---**	**1**	**62.2**	**148**
BT3-18-5	20-Jun-2018	0.0 - 0.75m	**S-CAT-2**	0.42	4.3	7.63	< 0.50	11	270	0.52	0.28	22	< 0.080	9.5	16	8.3	< 0.050	1.3	29	0.54	< 0.20	0.11	< 1.0	0.80	33	71
	20-Jun-2018	3.75 - 4.5m	**S-CAT-4**	1.3	1.3	7.78	< 0.50	11	150	0.62	0.088	30	< 0.080	16	25	37	0.054	0.50	49	0.56	< 0.20	< 0.10	< 1.0	0.41	44	130
(Duplicate)	20-Jun-2018	3.75 - 4.5m	**S-CAT-4**	1.3	1.2	7.75	< 0.50	20	97	0.57	0.077	31	< 0.080	16	21	8.6	< 0.050	< 0.40	50	< 0.50	< 0.20	< 0.10	< 1.0	0.37	48	120
	20-Jun-2018	4.5 - 5.25m	**S-CAT-4**	0.80	0.93	7.75	< 0.50	19	160	0.71	0.11	30	< 0.080	16	36	9.9	< 0.050	0.99	48	< 0.50	< 0.20	0.12	< 1.0	0.45	37	130
BT3-18-6	20-Jun-2018	1.5 - 2.25m	**S-CAT-3**	2.6	1.0	7.73	0.62	12	170	0.49	0.27	25	< 0.080	11	26	9.9	0.061	2.3	33	0.54	< 0.20	0.20	< 1.0	0.73	31	100
	20-Jun-2018	2.25 - 3.0m	**S-CAT-4**	2.0	1.6	7.70	< 0.50	17	120	0.53	0.18	28	< 0.080	14	26	11	0.064	1.4	44	< 0.50	< 0.20	0.18	< 1.0	0.64	38	120
BT3-18-7	20-Jun-2018	0.75 - 1.5m	**S-CAT-3**	1.1	0.36	7.81	0.57	9.9	240	0.43	0.36	19	< 0.080	9.0	20	8.9	0.054	1.7	29	< 0.50	< 0.20	0.16	< 1.0	0.89	27	85
	20-Jun-2018	2.25 - 3.0m	**S-CAT-3**	1.8	0.49	7.67	0.72	15	300	0.52	0.52	21	< 0.080	11	26	11	0.053	2.5	33	0.75	< 0.20	0.17	< 1.0	0.89	32	100
	20-Jun-2018	3.75 - 4.5m	**S-CAT-4**	1.1	1.9	7.84	< 0.50	21	130	0.55	0.095	28	< 0.080	16	22	8.6	< 0.050	0.50	48	< 0.50	< 0.20	< 0.10	< 1.0	0.39	36	120
BT3-18-TP1	18-Jun-2018	0.0 - 1.0m	**S-CAT-2**	0.25	0.58	7.44	0.54	7.8	240	< 0.40	0.34	15	< 0.080	8.4	17	8.0	< 0.050	1.8	25	0.50	< 0.20	0.11	< 1.0	0.84	25	71
	18-Jun-2018	2.0 - 3.0m	**S-CAT-3**	0.33	1.4	7.26	1.8	7.3	320	0.45	0.46	15	< 0.080	8.7	15	10	0.063	1.6	24	0.62	< 0.20	< 0.10	< 1.0	0.80	25	74
(Duplicate)	18-Jun-2018	2.0 - 3.0m	**S-CAT-3**	0.29	0.83	7.47	0.51	7.4	230	< 0.40	0.36	14	< 0.080	7.8	17	8.1	< 0.050	1.7	24	0.51	< 0.20	0.11	< 1.0	0.75	23	74
	18-Jun-2018	4.0 - 5.0m	**S-CAT-3**	0.66	3.2	7.67	0.64	11	340	0.50	0.56	19	< 0.080	12	26	11	0.060	2.4	35	0.80	< 0.20	0.18	< 1.0	0.97	30	110
BT3-18-TP2	18-Jun-2018	0.0 - 1.0m	**S-CAT-2**	0.22	0.65	7.62	< 0.50	8.3	220	< 0.40	0.25	15	< 0.080	8.5	19	8.2	< 0.050	1.8	26	< 0.50	< 0.20	0.10	< 1.0	0.75	25	71
	18-Jun-2018	2.0 - 3.0m	**S-CAT-3**	0.26	0.61	7.54	0.58	10	330	0.46	0.49	19	< 0.080	11	24	10	0.054	2.4	33	0.50	< 0.20	0.17	< 1.0	0.86	30	98
	18-Jun-2018	4.0 - 5.0m	**S-CAT-3**	0.39	0.58	7.74	0.66	12	200	0.47	0.68	20	< 0.080	12	27	11	0.063	2.5	38	2.4	< 0.20	0.21	< 1.0	0.96	29	110
BT3-18-TP3	18-Jun-2018	0.0 - 1.0m	**S-CAT-2**	0.32	0.77	7.37	0.53	9.2	490	0.46	0.56	18	< 0.080	8.6	17	11	0.053	2.9	27	0.69	< 0.20	0.19	< 1.0	1.2	31	83
	18-Jun-2018	2.0 - 3.0m	**S-CAT-3**	1.6	9.8	7.68	0.57	9.6	320	0.48	0.47	19	< 0.080	10	26	10	0.052	2.2	32	0.71	< 0.20	0.16	< 1.0	0.86	30	99
	18-Jun-2018	4.0 - 5.0m	**S-CAT-3**	1.3	0.56	7.61	0.61	11	310	0.50	0.57	20	< 0.080	11	26	11	0.060	2.4	35	0.63	< 0.20	0.20	< 1.0	0.95	31	110
BT3-18-TP4	18-Jun-2018	1.0 - 2.0m	**S-CAT-3**	0.62	6.4	7.57	< 0.50	8.4	260	0.42	0.41	17	< 0.080	9.4	21	9.3	0.070	1.8	29	0.64	< 0.20	0.14	< 1.0	0.99	27	93
	18-Jun-2018	3.0 - 4.0m	**S-CAT-3**	0.96	0.74	7.64	0.61	9.5	320	0.44	0.53	19	< 0.080	11	24	11	0.052	2.3	33	0.68	< 0.20	0.18	< 1.0	0.93	29	100
	18-Jun-2018	4.0 - 5.0m	**S-CAT-3**	0.47	0.89	7.70	0.57	12	290	0.47	0.54	21	< 0.080	12	26	11	0.057	2.3	37	0.66	< 0.20	0.18	< 1.0	1.5	31	110
BT3-18-TP5	18-Jun-2018	1.0 - 2.0m	**S-CAT-3**	0.31	0.92	7.59	< 0.50	7.2	220	< 0.40	0.31	14	< 0.080	8.0	16	7.4	< 0.050	1.8	24	< 0.50	< 0.20	0.11	< 1.0	0.86	22	68
	18-Jun-2018	3.0 - 4.0m	**S-CAT-3**	1.0	3.8	7.67	0.60	11	340	0.48	0.53	19	< 0.080	11	26	11	0.053	2.4	34	0.75	< 0.20	0.18	< 1.0	1.1	29	100
	18-Jun-2018	4.0 - 5.0m	**S-CAT-3**	0.67	0.28	7.86	0.52	9.9	290	< 0.40	0.48	17	< 0.080	10	24	10	< 0.050	2.2	30	0.74	< 0.20	0.17	< 1.0	0.87	26	94
(Duplicate)	18-Jun-2018	4.0 - 5.0m	**S-CAT-3**	0.75	0.26	7.68	0.58	10	300	0.42	0.50	17	< 0.080	11	24	10	0.050	2.2	31	0.86	< 0.20	0.17	< 1.0	0.90	26	96
BT3-18-TP6	18-Jun-2018	2.0 - 3.0m	**S-CAT-3**	1.3	5.4	7.69	0.61	11	360	0.45	0.60	18	< 0.080	12	26	12	0.054	2.7	34	0.76	< 0.20	0.16	< 1.0	0.91	28	100
	18-Jun-2018	4.0 - 5.0m	**S-CAT-3**	1.8	7.6	7.60	0.62	14	290	0.49	0.63	19	< 0.080	12	24	11	0.054	2.5	34	0.82	< 0.20	0.16	< 1.0	0.94	31	110

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity			Total Metals																			
				Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
CCME Industrial Fine Sub-Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
S-CAT-2				0.71	1.65	7.49	1	12.6	397	0.84	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				1.91	5.68	8.04	1	25.2	398	1.06	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				1.52	22.85	7.67	1	23.8	454	0.93	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Surface soils, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Subsurface soils, 1999 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Surface soils, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Subsurface soils, 1999 and updates)

6. Background 95th Percentile Statistical Category:
S-CAT-2: Mainland - Mineral Surface Soil - 95th Percentile Background
S-CAT-3: Mainland - Mineral Subsurface Soil - 95th Percentile Background
S-CAT-4: Mainland - Bedrock Siltstone - 95th Percentile Background

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Fine, Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME CSQG, Industrial, Fine, Subsurface				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.023	0.0065	---	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
BT97-15	26-Jul-1997	0.0 - 0.8m	**S-CAT-2**	---	---	---	---	---	---	---	---	---	< 0.001	< 0.004	< 0.005	0.005	< 0.001	---	< 0.001	< 0.002	0.005	0.011	< 0.002	0.034	0.084	0.012
	26-Jul-1997	2.3 - 3.8m	**S-CAT-3**	0.56	3.3	1.6	9.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT98-1	02-Sep-1998	4.5 - 6.0m	**S-CAT-4**	0.29	0.52	0.09	0.38	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT98-2	02-Sep-1998	0.0 - 0.3m	**S-CAT-2**	0.16	0.38	0.18	1.12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02-Sep-1998	3.0 - 4.5m	**S-CAT-3**	< 0.02	< 0.03	0.04	0.16	---	---	---	---	---	< 0.01	< 0.01	< 0.01	< 0.08	< 0.01	---	< 0.01	< 0.02	< 0.01	1.2	< 0.02	**< 1.0**	**< 2.2**	< 0.48
	02-Sep-1998	4.5 - 6.0m	**S-CAT-4**	0.47	0.57	0.09	0.48	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BC98-5	06-Sep-1998	0.0 - 0.2m	**S-CAT-2**	1.4	< 0.04	0.29	10.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BC98-6	06-Sep-1998	0.0 - 0.2m	**S-CAT-2**	< 0.04	< 0.04	< 0.04	< 0.06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BC98-8	06-Sep-1998	0.0 - 0.2m	**S-CAT-2**	< 0.04	< 0.04	< 0.04	< 0.06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT99-27	17-Jun-1999	1.0 - 1.5m	**S-CAT-3**	3.3	< 0.04	< 0.04	< 0.03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Jun-1999	4.5 - 6.0m	**S-CAT-4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT99-28	17-Jun-1999	1.0 - 1.5m	**S-CAT-3**	11	0.47	9.6	30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Jun-1999	3.0 - 4.5m	**S-CAT-4**	0.14	0.06	0.13	0.63	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Jun-1999	4.5 - 6.0m	**S-CAT-4**	0.13	< 0.04	0.26	0.46	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT99-29	17-Jun-1999	4.5 - 6.0m	**S-CAT-4**	< 0.04	< 0.04	0.04	0.10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT99-30	17-Jun-1999	3.0 - 4.5m	**S-CAT-3**	< 0.04	< 0.04	< 0.04	< 0.03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Jun-1999	4.5 - 6.0m	**S-CAT-4**	0.06	< 0.04	< 0.04	0.06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT99-31	18-Jun-1999	3.0 - 4.5m	**S-CAT-4**	0.07	< 0.04	< 0.04	< 0.03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT99-32	18-Jun-1999	3.0 - 4.5m	**S-CAT-4**	< 0.04	< 0.04	< 0.04	< 0.03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT99-35	18-Jun-1999	3.0 - 4.5m	**S-CAT-4**	< 0.04	< 0.04	< 0.04	0.11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Jun-1999	4.5 - 6.0m	**S-CAT-4**	< 0.04	< 0.04	< 0.04	< 0.03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT02-2	21-Jul-2002	0.0 - 1.5m	**S-CAT-3**	< 0.04	< 0.10	< 0.10	< 0.2	< 10	< 50	120	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Jul-2002	1.5 - 3.0m	**S-CAT-3**	< 0.04	< 0.10	< 0.10	< 0.2	< 10	< 50	63	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT02-4	21-Jul-2002	0.0 - 1.5m	**S-CAT-3**	3.1	< 0.10	2.2	< 5	260	6400	10000	2900	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Jul-2002	2.1 - 3.0m	**S-CAT-3**	16	0.98	9.3	14	1100	2000	3600	1200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Jul-2002	4.5 - 6.0m	**S-CAT-4**	0.49	< 0.10	0.52	< 0.93	150	1100	2700	1000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Fine, Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME CSQG, Industrial, Fine, Subsurface				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.023	0.0065	---	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
BT02-5	21-Jul-2002	0.0 - 1.5m	**S-CAT-3**	< 0.04	< 0.10	< 0.10	< 0.2	16	< 50	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Jul-2002	3.0 - 4.5m	**S-CAT-3**	< 0.04	< 0.10	< 0.10	< 0.2	19	83	370	150	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-10-1	02-Sep-2010	0.0 - 0.3m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	38	150	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-10-2	02-Sep-2010	0.0 - 0.3m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	46	170	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-12-1	13-Jul-2012	0.0 - 0.5m	**S-CAT-2**	0.058	0.23	0.083	0.56	< 12	4000	30000	16000	71000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jul-2012	0.5 - 1.0m	**S-CAT-3**	2.5	0.079	3.0	25	730	16000	67000	20000	---	0.61	< 1.3	0.93	0.60	0.097	0.37	< 0.050	0.15	0.53	6.6	< 0.050	22	26	2.2
	13-Jul-2012	1.0 - 1.5m	**S-CAT-3**	22	2.7	46	190	2200	18000	42000	18000	75000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jul-2012	1.5 - 2.0m	**S-CAT-3**	8.5	2.2	17	64	1900	11000	29000	9200	---	**< 0.73**	< 0.57	0.43	0.22	< 0.050	< 0.10	< 0.050	< 0.050	0.20	3	< 0.050	9.6	8.6	0.85
	13-Jul-2012	2.5 - 3.0m	**S-CAT-3**	1.7	2.4	2.1	9.7	200	1800	4700	1600	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jul-2012	3.4 - 3.9m	**S-CAT-3**	1.7	3.8	1.2	6.9	160	700	2000	2800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jul-2012	4.5 - 5.3m	**S-CAT-4**	0.24	0.62	0.24	1.2	70	690	1800	2800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-12-3	14-Jul-2012	0.0 - 0.4m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	390	360	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Jul-2012	0.4 - 0.9m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	23	95	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	14-Jul-2012	0.4 - 0.9m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	77	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Jul-2012	1.4 - 1.8m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	16	54	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Jul-2012	1.8 - 2.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	15	73	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Jul-2012	3.0 - 4.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	160	1300	3500	1200	4000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BOS-13-2	07-Sep-2013	0.5 - 0.8m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	37	160	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	07-Sep-2013	0.9 - 1.1m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	61	250	72	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BOS-13-3	08-Sep-2013	0.5 - 0.7m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	55	240	73	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	08-Sep-2013	1.3 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	55	230	67	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Fine, Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME CSQG, Industrial, Fine, Subsurface				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.023	0.0065	---	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
BT3-14-1	04-Mar-2014	1.0m	**S-CAT-3**	0.0074	< 0.020	< 0.010	< 0.040	< 12	14	110	68	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	2.0m	**S-CAT-3**	0.026	0.044	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	0.0058	< 0.0050	< 0.0050	0.07	0.014	< 0.0050
	04-Mar-2014	3.0m	**S-CAT-3**	2.9	35	18	79	1400	7100	18000	7900	27000	0.28	< 0.43	0.18	< 0.13	0.067	0.18	< 0.11	0.083	0.16	1.4	0.042	8.5	5.1	0.67
(Duplicate)	04-Mar-2014	3.0m	**S-CAT-3**	0.61	0.82	0.40	2.2	92	190	14000	9900	32000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	4.0m	**S-CAT-3**	0.034	0.038	0.046	0.22	< 12	95	190	63	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	5.0m	**S-CAT-3**	0.054	0.049	0.13	< 0.38	36	620	3600	2100	8800	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	6.0m	**S-CAT-3**	0.023	< 0.020	0.058	< 0.12	13	110	320	140	---	0.014	< 0.0068	< 0.0040	0.0083	< 0.0050	< 0.10	< 0.0050	< 0.0050	0.0053	0.034	< 0.0050	0.084	0.15	0.024
BT3-14-4	04-Mar-2014	1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	61	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	83	< 50	---	< 0.0050	< 0.0050	< 0.0040	0.0050	0.0055	< 0.10	< 0.0050	< 0.0050	0.0078	0.0064	0.0075	0.012	0.038	0.015
	04-Mar-2014	3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	14	130	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	4.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	17	160	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0086	0.048	0.011
	04-Mar-2014	5.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	180	490	140	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Mar-2014	5.5m	**S-CAT-3**	0.0082	< 0.020	< 0.010	0.057	60	770	1800	550	---	0.059	< 0.011	0.012	0.015	< 0.0050	< 0.10	< 0.0055	0.0093	0.012	0.070	< 0.0050	0.054	0.64	0.069
(Duplicate)	04-Mar-2014	5.5m	**S-CAT-3**	0.0084	< 0.020	< 0.010	0.052	59	750	1800	590	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-14-6	03-Mar-2014	1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	15	71	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Mar-2014	2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	91	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Mar-2014	3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	140	440	170	---	< 0.0050	< 0.0050	< 0.0040	0.0064	0.0083	< 0.10	< 0.0050	0.0069	0.010	0.012	0.0097	0.016	0.049	0.020
(Duplicate)	03-Mar-2014	3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	120	400	150	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Mar-2014	4.0m	**S-CAT-3**	0.0078	< 0.020	0.012	< 0.040	240	1600	4000	1400	5700	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Mar-2014	4.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.030	< 0.040	450	1700	4200	1500	6400	0.086	< 0.0055	< 0.029	< 0.026	< 0.0050	< 0.10	< 0.0050	< 0.019	0.026	< 0.043	< 0.0050	0.084	1.1	0.14
BT3-16-01	26-Jun-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	60	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-03	26-Jun-2016	3.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	140	570	220	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-04	26-Jun-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	54	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-05	26-Jun-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	65	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-06	26-Jun-2016	3.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	160	91	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-07	26-Jun-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	20	190	85	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-08	26-Jun-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	96	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Fine, Surface				**110**	**330**	**430**	**230**	**---**	**---**	**---**	**---**	**---**	**0.28**	**320**	**32**	**10**	**72**	**5.3**	**10**	**10**	**180**	**0.25**	**10**	**0.013**	**0.046**	**100**
CCME CSQG, Industrial, Fine, Subsurface				**620**	**660**	**860**	**460**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
CCME PHC in Soil, Industrial, Fine, Surface				**---**	**---**	**---**	**---**	**320**	**260**	**2500**	**6600**	**6600**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
CCME PHC in Soil, Industrial, Fine, Subsoil				**---**	**---**	**---**	**---**	**800**	**1000**	**5000**	**10000**	**10000**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
S-CAT-2				**0.011**	**0.044**	**0.022**	**0.088**	**14.1**	**33.8**	**277**	**118**	**---**	**0.005**	**0.005**	**0.004**	**0.01**	**0.01**	**---**	**---**	**0.005**	**0.01**	**0.018**	**0.01**	**0.0117**	**0.0289**	**0.0134**
S-CAT-3				**0.015**	**0.02**	**0.016**	**0.081**	**18.3**	**83.7**	**536.5**	**209.5**	**---**	**0.006**	**0.006**	**0.004**	**0.006**	**0.009**	**---**	**---**	**0.006**	**0.011**	**0.013**	**0.01**	**0.018**	**0.045**	**0.02**
S-CAT-4				**0.0775**	**0.4**	**0.96**	**6.08**	**96.8**	**825.5**	**1265**	**288**	**---**	**0.034**	**0.023**	**0.004**	**0.023**	**0.0065**	**---**	**---**	**0.007**	**0.014**	**0.236**	**0.005**	**0.048**	**0.771**	**0.08**
BT3-16-09	26-Jun-2016	3.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	110	54	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-11	26-Jun-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	140	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-12	26-Jun-2016	3.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	140	57	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-13	26-Jun-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	110	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-14	26-Jun-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	100	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-15	26-Jun-2016	3.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	14	170	77	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-16	27-Jun-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	95	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-17	27-Jun-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	14	92	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-18	27-Jun-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	31	180	63	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-19	27-Jun-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	17	130	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-20	27-Jun-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	18	340	82	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-21	27-Jun-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	27	290	140	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-22	28-Jun-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	16	150	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-23	28-Jun-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	150	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-30	06-Jul-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	28	240	69	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-31	06-Jul-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	87	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-32	06-Jul-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	210	70	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-33	06-Jul-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	62	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-34	06-Jul-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	110	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-35	06-Jul-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	74	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-36	06-Jul-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	14	170	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-38	07-Jul-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	93	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-39	07-Jul-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	15	110	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-40	07-Jul-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	80	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Fine, Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME CSQG, Industrial, Fine, Subsurface				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.023	0.0065	---	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
BT3-16-41	07-Jul-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	110	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-42	07-Jul-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	180	170	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-43	07-Jul-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	67	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-44	07-Jul-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	14	< 10	81	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-45	07-Jul-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	180	69	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-46	07-Jul-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	160	50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-47	07-Jul-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	98	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-48	07-Jul-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	19	28	85	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-60	07-Jul-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	110	63	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-63	08-Jul-2016	2.5	**S-CAT-3**	0.84	< 0.020	< 0.010	< 0.040	13	59	92	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-71	08-Jul-2016	3.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	120	54	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-77	08-Jul-2016	3.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	89	1800	4000	1400	5500	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-78	08-Jul-2016	2.0	**S-CAT-3**	0.0098	< 0.020	< 0.010	< 0.040	< 12	1000	2700	530	2900	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-79	08-Jul-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	72	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-97	22-Jul-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	100	64	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-98	22-Jul-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	14	100	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-99	22-Jul-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	14	84	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-100	22-Jul-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	23	67	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-101	24-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	31	310	110	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-102	24-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	33	320	140	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-103	24-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	25	220	79	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-104	24-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	53	110	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-105	24-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	24	270	110	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-106	24-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	160	770	270	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Fine, Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME CSQG, Industrial, Fine, Subsurface				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.023	0.0065	---	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
BT3-16-107	24-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	26	260	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-108	24-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	33	250	110	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-109	24-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	27	260	91	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-110	24-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	38	120	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-111	24-Jul-2016	4.5	**S-CAT-4**	0.018	< 0.020	< 0.010	< 0.040	< 12	24	250	120	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-112	25-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	55	310	120	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-113	25-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	17	310	180	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-114	25-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	17	170	59	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-115	25-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	31	250	110	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-116	25-Jul-2016	4.5	**S-CAT-4**	0.027	0.034	< 0.010	< 0.040	< 12	72	450	180	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-117	25-Jul-2016	4.5	**S-CAT-4**	0.18	0.062	0.023	0.16	59	2000	5600	2000	8300	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-118	25-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	45	350	160	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-119	25-Jul-2016	4.5	**S-CAT-4**	0.0080	< 0.020	< 0.010	< 0.040	< 12	130	320	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-120	25-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	24	280	130	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-121	25-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	32	330	150	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-122	25-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	58	310	120	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-123	25-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	110	500	160	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-124	25-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	51	360	140	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-125	25-Jul-2016	4.5	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	31	140	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-59	07-Jul-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	21	420	280	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-61	08-Jul-2016	2.5	**S-CAT-3**	0.028	< 0.020	0.025	0.086	< 12	130	380	140	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-62	08-Jul-2016	1.0	**S-CAT-3**	0.040	< 0.020	0.052	0.12	15	210	780	320	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-64	08-Jul-2016	1.0	**S-CAT-3**	0.035	< 0.020	< 0.010	< 0.040	22	190	880	330	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-65	08-Jul-2016	3.0	**S-CAT-3**	0.26	1.6	1.1	6.1	190	2800	10000	3500	15000	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Fine, Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME CSQG, Industrial, Fine, Subsurface				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.023	0.0065	---	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
BT3-16-66	08-Jul-2016	2.0	**S-CAT-3**	0.14	0.037	2.7	3.4	210	3500	6400	2300	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-67	08-Jul-2016	1.0	**S-CAT-3**	0.055	< 0.020	0.022	< 0.040	15	1600	6600	2400	9800	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-68	08-Jul-2016	3.0	**S-CAT-3**	1.1	0.66	1.7	4.7	260	2400	8500	3100	13000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-69	08-Jul-2016	2.0	**S-CAT-3**	6.9	0.10	11	12	1600	6500	24000	15000	49000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-70	08-Jul-2016	1.0	**S-CAT-3**	0.23	0.058	0.062	0.14	< 12	57	320	120	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-72	08-Jul-2016	2.0	**S-CAT-3**	0.040	< 0.020	0.16	0.33	750	12000	25000	9800	42000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-73	08-Jul-2016	1.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-74	08-Jul-2016	3.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	12	110	1400	640	2100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-75	08-Jul-2016	2.0	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	16	200	750	360	1300	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-16-76	08-Jul-2016	1.0	**S-CAT-3**	0.0084	< 0.020	0.026	< 0.040	16	720	47000	40000	120000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3-17-1	22-Sep-2017	0.5 - 1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0056	0.012	< 0.0050	< 0.0050	0.0068	< 0.0050	0.0062	0.0083	0.022	0.012
	22-Sep-2017	2.0 - 2.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	51	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	0.0080	< 0.0050	< 0.0050	0.0074	< 0.0050	0.0054	0.0055	0.020	0.011
	22-Sep-2017	4.0 - 4.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	14	150	70	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0065	0.013	< 0.0050	< 0.0050	0.0096	< 0.0050	0.0067	0.013	0.048	0.017
BT3-17-2	22-Sep-2017	0.5 - 1.0m	**S-CAT-3**	0.014	0.089	0.027	0.16	< 10	440	7100	4500	16000	0.0067	0.027	0.012	0.027	0.037	0.11	0.0088	0.042	0.090	0.023	0.056	0.065	1.5	0.25
	22-Sep-2017	1.5 - 2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	0.0080	< 0.0050	< 0.0050	0.0053	< 0.0050	< 0.0050	< 0.0050	0.019	0.0080
BT3-17-3	22-Sep-2017	0.5 - 1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	70	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.010	< 0.0050
(Duplicate)	22-Sep-2017	0.5 - 1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	16	100	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0074	0.014	0.0053
	22-Sep-2017	1.5 - 2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	0.0080	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.015	0.0076
	22-Sep-2017	3.0 - 3.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	24	250	120	---	< 0.0050	< 0.0050	< 0.0040	0.0061	0.0072	0.014	< 0.0050	< 0.0050	0.010	0.0078	0.0068	0.012	0.063	0.022
BT3-18-1	19-Jun-2018	1.0 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	0.0053	< 0.0050	< 0.0050	< 0.0050	0.016	0.0090
	19-Jun-2018	3.75 - 4.5m	**S-CAT-3**	0.0090	0.059	< 0.010	< 0.045	11	12	89	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0065	0.025	0.0088
	19-Jun-2018	5.25 - 6.0m	**S-CAT-3**	0.0081	< 0.020	< 0.010	< 0.045	21	33	140	63	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0075	0.039	0.011

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Fine, Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME CSQG, Industrial, Fine, Subsurface				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.023	0.0065	---	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
BT3-18-2	20-Jun-2018	0.5 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.013	0.0077
	20-Jun-2018	3.0 - 3.75m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.015	0.0081
(Duplicate)	20-Jun-2018	3.0 - 3.75m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	29	140	64	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	0.0051	< 0.0050	< 0.0050	< 0.0050	0.035	0.010
	20-Jun-2018	5.25 - 6.0m	**S-CAT-4**	0.0082	< 0.020	0.013	0.081	40	420	920	330	1100	0.022	0.0097	0.0050	0.0058	< 0.0050	0.0080	< 0.0050	< 0.0050	0.0067	0.11	< 0.0050	0.040	0.19	0.028
	20-Jun-2018	6.75 - 7.5m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	0.051	42	440	1000	390	1200	0.011	0.011	< 0.0040	0.0051	< 0.0050	< 0.0071	< 0.0050	< 0.0050	0.0060	0.052	< 0.0050	0.024	0.20	0.023
BT3-18-3	20-Jun-2018	0.75 - 1.5m	**S-CAT-3**	< 0.0050	0.026	< 0.010	< 0.045	< 10	70	550	300	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0057	0.018	0.011
	20-Jun-2018	3.75 - 4.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	11	55	350	210	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.033	0.0084
	20-Jun-2018	5.25 - 6.0m	**S-CAT-4**	0.030	< 0.020	< 0.010	0.41	52	560	1200	410	1200	0.011	0.01	< 0.0040	0.0088	< 0.0050	0.0080	< 0.0050	< 0.0050	0.0073	0.049	< 0.0050	0.043	0.22	0.030
BT3-18-4	20-Jun-2018	1.0 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.012	0.0052
	20-Jun-2018	2.25 - 3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	21	110	53	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	0.0067	< 0.0050	< 0.0050	0.0057	0.027	0.011
	20-Jun-2018	3.75 - 4.5m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.045	17	530	1600	680	3000	0.0051	0.011	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.039	0.013
BT3-18-5	20-Jun-2018	0.0 - 0.75m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	22	240	170	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0076	< 0.0050
	20-Jun-2018	3.75 - 4.5m	**S-CAT-4**	< 0.0050	< 0.020	0.016	0.057	59	540	1300	510	1800	0.0098	0.0089	< 0.0040	0.0052	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	0.036	< 0.0050	0.042	0.14	0.021
(Duplicate)	20-Jun-2018	3.75 - 4.5m	**S-CAT-4**	< 0.0050	< 0.020	0.014	0.056	45	630	1400	570	2300	0.014	0.011	< 0.0040	0.0056	< 0.0050	0.0080	< 0.0050	< 0.0050	< 0.0050	0.046	< 0.0050	0.048	0.23	0.023
	20-Jun-2018	4.5 - 5.25m	**S-CAT-4**	0.011	< 0.020	0.016	< 0.045	63	290	560	170	---	0.019	0.022	< 0.0040	0.015	0.016	0.033	< 0.0050	0.010	0.0081	0.077	0.0076	0.055	0.43	0.031
BT3-18-6	20-Jun-2018	1.5 - 2.25m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	18	51	270	130	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	0.0069	0.0061	< 0.0050	0.0073	0.063	0.012
	20-Jun-2018	2.25 - 3.0m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.045	22	170	300	110	---	0.0091	0.0092	< 0.0040	0.0061	< 0.0050	0.011	< 0.0050	0.0052	< 0.0050	0.042	< 0.0050	0.019	0.16	0.018
BT3-18-7	20-Jun-2018	0.75 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	14	67	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.011	< 0.0050
	20-Jun-2018	2.25 - 3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	25	130	60	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	0.0060	< 0.0050	< 0.0050	0.0058	0.022	0.012
	20-Jun-2018	3.4 - 3.6m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	0.051	31	480	1300	460	1600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jun-2018	3.75 - 4.5m	**S-CAT-4**	< 0.0050	< 0.020	0.013	0.068	41	270	540	170	---	0.012	0.0092	< 0.0040	0.0061	< 0.0050	0.011	< 0.0050	0.0051	< 0.0050	0.059	< 0.0050	0.084	0.20	0.021
BT3-18-TP1	18-Jun-2018	0.0 - 1.0m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0064	< 0.0050
	18-Jun-2018	2.0 - 3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
(Duplicate)	18-Jun-2018	2.0 - 3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	53	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	18-Jun-2018	4.0 - 5.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	12	12	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	0.0064	< 0.0050	< 0.0050	0.0058	0.019	0.011
BT3-18-TP2	18-Jun-2018	0.0 - 1.0m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	18-Jun-2018	2.0 - 3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	0.0053	< 0.0050	< 0.0050	< 0.0050	0.013	0.0091
	18-Jun-2018	4.0 - 5.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	65	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	0.0080	< 0.0050	< 0.0050	0.0057	< 0.0050	0.0050	< 0.0050	0.012	0.010

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Fine, Surface				**110**	**330**	**430**	**230**	**---**	**---**	**---**	**---**	**---**	**0.28**	**320**	**32**	**10**	**72**	**5.3**	**10**	**10**	**180**	**0.25**	**10**	**0.013**	**0.046**	**100**
CCME CSQG, Industrial, Fine, Subsurface				**620**	**660**	**860**	**460**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
CCME PHC in Soil, Industrial, Fine, Surface				**---**	**---**	**---**	**---**	**320**	**260**	**2500**	**6600**	**6600**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
CCME PHC in Soil, Industrial, Fine, Subsoil				**---**	**---**	**---**	**---**	**800**	**1000**	**5000**	**10000**	**10000**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
S-CAT-2				**0.011**	**0.044**	**0.022**	**0.088**	**14.1**	**33.8**	**277**	**118**	**---**	**0.005**	**0.005**	**0.004**	**0.01**	**0.01**	**---**	**---**	**0.005**	**0.01**	**0.018**	**0.01**	**0.0117**	**0.0289**	**0.0134**
S-CAT-3				**0.015**	**0.02**	**0.016**	**0.081**	**18.3**	**83.7**	**536.5**	**209.5**	**---**	**0.006**	**0.006**	**0.004**	**0.006**	**0.009**	**---**	**---**	**0.006**	**0.011**	**0.013**	**0.01**	**0.018**	**0.045**	**0.02**
S-CAT-4				**0.0775**	**0.4**	**0.96**	**6.08**	**96.8**	**825.5**	**1265**	**288**	**---**	**0.034**	**0.023**	**0.004**	**0.023**	**0.0065**	**---**	**---**	**0.007**	**0.014**	**0.236**	**0.005**	**0.048**	**0.771**	**0.08**
BT3-18-TP3	18-Jun-2018	0.0 - 1.0m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.045	11	18	**1100**	**740**	2200	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.010	0.0053
	18-Jun-2018	2.0 - 3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0084	0.0057
	18-Jun-2018	4.0 - 5.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.011	0.0078
BT3-18-TP4	18-Jun-2018	1.0 - 2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	54	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0063	< 0.0050
	18-Jun-2018	3.0 - 4.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0089	0.0064
	18-Jun-2018	4.0 - 5.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	12	71	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.018	0.0056
BT3-18-TP5	18-Jun-2018	1.0 - 2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	18-Jun-2018	3.0 - 4.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.011	0.0077
	18-Jun-2018	4.0 - 5.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	0.0080	< 0.0050	< 0.0050	0.0056	< 0.0050	0.0053	0.0052	0.016	0.0090
(Duplicate)	18-Jun-2018	4.0 - 5.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.013	0.0081
BT3-18-TP6	18-Jun-2018	2.0 - 3.0m	**S-CAT-3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Jun-2018	3.0 - 4.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0095	< 0.0050
	18-Jun-2018	4.0 - 5.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.045	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.011	0.0057

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
- (CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Subsurface Soils, excluding protection of potable groundwater, 2001 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
- (CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Subsurface Soils, excluding protection of potable groundwater, 2001 and updates)

6. Background 95th Percentile Statistical Category:
- S-CAT-2: Mainland - Mineral Surface Soil - 95th Percentile Background
- S-CAT-3: Mainland - Mineral Subsurface Soil - 95th Percentile Background
- S-CAT-4: Mainland - Bedrock Siltstone - 95th Percentile Background

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

			Inorganics and Phenols					Dissolved Metals															
Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BOS DP 08-2	20-Aug-2009	**W-CAT-1**	---	---	---	---	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BOS DP 98-1	10-Sep-1998	**W-CAT-1**	36.5	8.1	---	---	963	< 0.02	**< 0.04**	0.038	< 0.002	< 0.002	0.002	0.012	< 0.02	---	< 0.004	< 0.008	**< 0.03**	< 0.01	< 0.02	---	< 0.002
	16-Sep-1999		37	8.1	< 0.02	< 0.005	---	< 0.02	0.005	0.033	< 0.0001	0.002	< 0.001	1.71	< 0.001	< 0.00005	0.01	< 0.008	< 0.001	< 0.0001	0.02	---	< 0.002
	18-Sep-2000		13	7.6	0.04	< 0.005	4	0.07	0.002	0.019	< 0.0001	< 0.005	< 0.005	0.087	< 0.001	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	**< 0.03**	---	< 0.005
	29-Aug-2001		23.8	7.8	< 0.02	< 0.005	37	0.13	**< 0.05**	0.031	< 0.002	< 0.005	< 0.005	1.34	**< 0.03**	---	< 0.005	< 0.008	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	24-Aug-2002		46.0	8.0	< 0.02	< 0.005	4	0.004	0.006	0.029	< 0.00001	< 0.001	0.0013	5.68	< 0.0005	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.0001	0.00095	0.010
	25-Aug-2003		36	7.4	< 0.2	< 0.06	---	---	< 0.005	< 0.050	< 0.002	< 0.007	< 0.009	0.159	**< 0.10**	< 0.00005	---	---	0.002	---	---	**< 1.0**	0.006
BOS DP 98-2	10-Sep-1998	**W-CAT-1**	---	---	---	---	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Sep-1999		76	7.6	0.02	< 0.005	---	0.04	0.008	0.025	< 0.0001	< 0.002	< 0.001	25.2	< 0.001	< 0.00005	0.005	< 0.008	0.001	< 0.0001	< 0.02	---	< 0.002
	18-Sep-2000		53	7.1	< 0.02	< 0.005	25	0.03	0.003	0.012	< 0.0001	0.006	< 0.005	15.0	< 0.001	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	**< 0.03**	---	0.016
	29-Aug-2001		55.0	7.4	< 0.02	< 0.005	42	< 0.02	**< 0.05**	0.015	< 0.002	< 0.005	< 0.005	0.284	**< 0.03**	---	< 0.005	< 0.008	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	24-Aug-2002		61.9	7.8	< 0.02	< 0.005	16	0.015	0.006	0.013	< 0.00001	< 0.001	0.0008	27.1	< 0.0005	< 0.00005	< 0.005	< 0.008	0.001	< 0.0001	< 0.0001	0.00016	0.011
	25-Aug-2003		43	6.8	< 0.2	< 0.06	---	---	< 0.005	< 0.050	< 0.002	< 0.007	< 0.009	18.45	**< 0.10**	< 0.00005	---	---	0.001	---	---	**< 1.0**	< 0.005
BOS-DP-13-2-1.35	17-Sep-2013	**W-CAT-1**	650	7.63	0.012	0.0050	40	0.0050	0.0049	0.074	0.000030	< 0.0010	0.00024	14	< 0.00020	---	0.013	0.012	0.00044	< 0.00010	< 0.00020	0.0031	0.011
	31-Jul-2014		490	8.06	0.054	< 0.010	---	0.0052	0.0028	0.045	0.000022	< 0.0010	0.019	13	< 0.00020	---	0.0022	0.0017	0.00084	< 0.00010	< 0.00020	0.00053	0.0097
	06-Aug-2016		320	7.69	0.67	0.035	12	0.012	0.0086	0.053	< 0.000020	< 0.0010	0.00086	0.85	< 0.00020	---	0.013	0.0080	0.00024	< 0.00010	< 0.00020	0.0010	0.0074
	18-Aug-2017		530	---	0.026	< 0.010	---	0.030	0.013	0.059	< 0.000020	< 0.0010	0.00031	20	< 0.00020	---	0.0011	0.0019	0.00023	< 0.00010	< 0.00020	0.00012	0.0094
BOS-DP-13-3-2	17-Sep-2013	**W-CAT-1**	280	8.11	0.0074	0.0057	36	0.012	0.0030	0.11	0.000047	< 0.0010	0.0033	< 0.060	< 0.00020	---	0.034	0.0095	0.00060	< 0.00010	< 0.00020	0.0049	0.0066
	10-Aug-2015		---	---	---	---	3.0	0.015	0.0090	0.052	0.000033	< 0.0010	0.00099	1.4	0.00031	---	0.0063	0.0023	< 0.00020	< 0.00010	< 0.00020	0.00045	0.0032
	06-Aug-2016		92	8.16	0.089	< 0.010	---	---	---	---	---	---	---	2.4	---	---	---	---	---	---	---	---	---
	18-Aug-2017		82	---	0.074	< 0.010	6.7	---	---	---	---	---	---	2.8	---	---	---	---	---	---	---	---	---
	21-Jul-2018		58	---	0.015	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BT3 02-32-6	20-Aug-2002	**W-CAT-3**	554	7.8	< 0.02	0.010	45	0.037	0.024	0.479	< 0.00010	< 0.001	0.0067	0.072	< 0.0005	< 0.00005	0.006	0.039	0.002	< 0.0001	< 0.0001	0.00837	0.020
	25-Aug-2003		551	6.7	< 0.2	< 0.06	---	---	0.020	0.585	< 0.002	< 0.007	< 0.009	0.457	**< 0.10**	< 0.00005	---	---	0.001	---	---	**< 1.0**	0.018
	22-Aug-2004		764	7.1	< 0.2	< 0.06	---	< 0.025	< 0.025	0.553	0.000144	< 0.005	0.012	1.776	< 0.005	< 0.00005	< 0.005	0.028	**< 0.005**	**< 0.0005**	< 0.0040	< 0.005	< 0.005
	25-Aug-2005		848	7.6	0.3	< 0.06	43	0.006	0.0182	0.46	0.00006	< 0.007	0.006	4.09	0.001	< 0.00005	< 0.006	0.024	< 0.001	< 0.0001	< 0.0008	< 0.001	0.335
	22-Aug-2006		1040	7.3	< 0.2	< 0.06	40	0.602	0.017	0.42	< 0.00001	< 0.007	0.006	0.144	0.002	< 0.00005	< 0.006	0.023	0.001	< 0.0001	< 0.0008	0.002	0.010
	19-Aug-2008		980	7.0	0.004	< 0.003	37	< 0.001	0.011	0.41	0.00001	< 0.001	0.0039	2.7	0.0006	---	0.0004	0.022	< 0.001	< 0.0001	< 0.0002	0.0014	0.041
	17-Aug-2009		890	7.53	0.039	0.008	6	0.001	0.0079	0.44	< 0.000005	< 0.001	0.0036	6.5	< 0.0002	---	0.0007	0.020	0.0007	< 0.0001	< 0.0002	0.0025	0.024
	21-Aug-2010		620	6.97	0.33	0.008	5	0.007	0.011	0.32	< 0.00003	< 0.001	0.0017	5.1	0.0003	---	0.0010	0.018	0.0009	< 0.0001	< 0.0002	0.0022	0.014
	20-Aug-2011		540	---	< 0.03	< 0.03	4	0.010	0.016	0.33	< 0.00003	< 0.001	0.0007	13	< 0.0002	---	< 0.0002	0.016	0.0019	< 0.0001	< 0.0002	0.0014	0.022
	20-Aug-2012		360	---	< 0.0030	< 0.0030	22	0.047	0.029	0.38	0.000024	< 0.0010	0.0015	16	0.00027	---	0.00037	0.015	0.0010	< 0.00010	< 0.00020	0.0014	0.0092
	24-Aug-2013		180	---	0.0070	0.0044	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2014		110	---	0.21	0.023	---	0.021	0.032	0.37	< 0.000020	< 0.0010	0.0024	16	0.00033	---	< 0.00020	0.011	0.0030	< 0.000020	< 0.00020	0.0016	0.012
	08-Aug-2015		70	---	< 0.010	< 0.010	---	0.017	0.051	0.36	< 0.000020	< 0.0010	0.00086	27	0.00024	---	0.00020	0.0095	0.0015	< 0.00010	< 0.00020	0.0014	0.012
	05-Aug-2016		68	---	< 0.010	< 0.010	---	0.0093	0.072	0.27	< 0.000020	< 0.0010	0.00086	27	0.00022	---	0.00051	0.0098	0.0011	< 0.00010	< 0.00020	0.0015	0.010
	13-Aug-2017		63	---	0.024	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2018		---	---	---	---	---	0.023	0.13	0.35	< 0.000020	0.0011	0.00087	44	0.00023	---	0.00037	0.0074	0.0013	< 0.00010	< 0.00020	0.0030	0.0096
BT3 02-33-4	20-Aug-2002	**W-CAT-3**	39.8	7.7	< 0.02	0.005	3	0.090	0.002	0.043	< 0.00001	< 0.001	0.0020	4.95	0.0007	0.00033	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.0001	0.00035	0.015
	25-Aug-2003		56	6.8	< 0.2	< 0.06	---	---	< 0.005	< 0.050	< 0.002	< 0.007	< 0.009	0.110	**< 0.10**	< 0.00005	---	---	0.001	---	---	**< 1.0**	0.018
	22-Aug-2004		35	7.3	< 0.2	< 0.06	---	0.012	< 0.005	0.046	0.000107	< 0.005	0.009	0.089	< 0.001	< 0.00005	< 0.005	0.015	0.002	< 0.0001	< 0.0008	0.002	< 0.005
	25-Aug-2005		33.7	7.5	1.1	< 0.06	8	0.01	< 0.005	0.05	0.00012	< 0.007	0.0310	0.232	< 0.001	< 0.00005	0.011	0.016	< 0.001	< 0.0001	< 0.0008	0.002	0.172
	22-Aug-2006		25	7.6	1.9	< 0.06	7	0.007	< 0.005	< 0.05	< 0.00001	< 0.007	0.009	0.087	< 0.001	< 0.00005	< 0.006	0.019	< 0.001	< 0.0001	< 0.0008	0.003	0.007
	22-Aug-2007		31	7.0	0.6	< 0.06	7	0.008	0.001	0.04	0.00017	0.002	0.0074	< 0.06	< 0.0002	---	0.0027	0.0134	0.002	< 0.0001	< 0.0002	0.0046	0.027
	19-Aug-2008		25	7.6	0.095	0.013	4	0.22	0.002	0.04	0.00029	< 0.001	0.0062	3.3	0.0008	---	0.0061	0.019	< 0.001	< 0.0001	< 0.0002	0.0045	0.10
	20-Aug-2009		27	7.31	0.21	0.014	< 2	0.006	0.0003	0.04	0.00015	< 0.001	0.0056	0.20	< 0.0002	---	0.0070	0.014	0.0003	< 0.0001	< 0.0002	0.0039	0.013
	21-Aug-2010		23	7.73	0.034	0.004	< 2	0.017	0.0008	0.04	0.00010	< 0.001	0.0049	0.23	< 0.0002	---	0.0031	0.010	0.0004	< 0.0001	< 0.0002	0.0026	0.012
	20-Aug-2011		16	---	0.41	< 0.003	< 2	< 0.01	< 0.002	0.04	0.00012	**< 0.01**	0.006	0.12	< 0.002	---	< 0.002	0.008	< 0.002	**< 0.001**	< 0.002	0.002	< 0.03
	20-Aug-2012		11	---	0.33	0.0058	< 2.0	0.0080	0.00042	0.038	0.000067	< 0.0010	0.0044	0.068	< 0.00020	---	0.0015	0.0081	0.00025	< 0.00010	< 0.00020	0.0020	0.0059

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BT3 93-19-17	07-Sep-1997	**W-CAT-3**	5220	7.8	< 0.02	0.005	61	0.21	< 0.0005	1.30	< 0.002	0.039	0.020	0.094	< 0.001	0.00007	< 0.004	< 0.008	< 0.0005	**< 0.01**	< 0.02	---	0.336
	10-Sep-1998		4500	7.8	< 0.02	< 0.005	57	< 0.02	0.001	1.33	< 0.0010	0.004	< 0.001	0.077	< 0.005	< 0.00005	< 0.004	< 0.008	< 0.001	< 0.0001	< 0.02	---	< 0.002
(Duplicate)	10-Sep-1998		4500	7.7	< 0.02	< 0.005	30	< 0.02	< 0.001	1.29	< 0.0010	0.005	< 0.001	0.064	< 0.005	< 0.00005	< 0.004	< 0.008	< 0.001	< 0.0001	< 0.02	---	< 0.002
	16-Sep-1999		4500	7.9	< 0.02	< 0.005	---	< 0.02	0.002	1.17	< 0.0001	0.003	< 0.001	3.7	< 0.001	< 0.00005	< 0.004	< 0.008	< 0.001	< 0.0001	< 0.02	---	< 0.002
	19-Sep-2000		4500	7.3	< 0.02	< 0.005	34	< 0.02	< 0.001	1.12	< 0.0001	< 0.005	< 0.005	0.031	< 0.001	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.03	---	< 0.005
	27-Aug-2001		4490	7.1	< 0.02	< 0.005	22	0.03	< 0.05	1.07	< 0.002	0.006	< 0.005	0.057	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	0.014
(Duplicate)	29-Aug-2001		4190	7.4	< 0.02	< 0.005	2	0.03	< 0.05	1.09	< 0.002	< 0.005	< 0.005	0.088	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	0.008
	20-Aug-2002		4090	7.7	< 0.02	< 0.005	26	< 0.001	0.001	1.03	< 0.00010	< 0.001	0.0170	1.90	< 0.0005	< 0.00005	< 0.005	< 0.008	0.002	< 0.0001	< 0.0001	0.00041	< 0.005
(Duplicate)	20-Aug-2002		4260	7.7	< 0.02	< 0.005	27	< 0.001	0.001	1.05	< 0.00010	0.003	0.0194	2.46	< 0.0005	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.0001	< 0.00010	< 0.005
	25-Aug-2003		3770	6.8	< 0.2	< 0.06	---	---	< 0.005	0.928	< 0.002	< 0.007	< 0.009	1.436	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.005
BT3 98-17-3	10-Sep-1998	**W-CAT-1**	46.5	7.8	< 0.02	< 0.005	91	0.19	0.04	0.133	< 0.002	0.004	< 0.001	1.38	< 0.02	---	0.015	0.012	**< 0.03**	< 0.01	< 0.02	---	< 0.002
	16-Sep-1999		45	7.6	< 0.02	< 0.005	37	0.05	0.011	0.088	0.0001	0.003	< 0.001	45.4	< 0.001	< 0.00005	0.023	0.008	0.003	< 0.0001	< 0.02	---	< 0.002
	19-Sep-2000		70	7.0	< 0.02	0.005	71	< 0.02	0.003	0.040	< 0.0001	0.005	< 0.005	0.179	< 0.001	< 0.00005	0.009	< 0.008	0.002	< 0.0001	**< 0.03**	---	0.026
	27-Aug-2001		20.7	7.3	< 0.02	< 0.005	39	< 0.02	**< 0.05**	0.090	< 0.002	< 0.005	< 0.005	4.21	**< 0.03**	---	< 0.005	< 0.008	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	20-Aug-2002		33.8	7.6	< 0.02	< 0.005	26	0.005	0.005	0.079	< 0.00010	< 0.001	0.0020	2.10	< 0.0005	0.00038	< 0.005	< 0.008	0.002	< 0.0001	< 0.0001	0.00736	0.015
	25-Aug-2003		35	6.7	< 0.2	< 0.06	---	---	0.006	0.086	< 0.002	< 0.007	< 0.009	26.28	**< 0.10**	< 0.00005	---	---	0.003	---	---	**< 1.0**	0.007
	22-Aug-2004		34	---	< 0.2	< 0.06	---	0.043	0.024	0.094	< 0.000034	< 0.005	0.019	26.29	0.002	< 0.00005	< 0.005	0.011	0.013	< 0.0002	< 0.0016	0.011	< 0.005
	25-Aug-2005		16.7	---	< 0.2	< 0.06	43	0.0195	0.0135	0.09	0.00002	< 0.007	0.004	35.4	< 0.001	< 0.00005	< 0.006	0.017	0.002	< 0.0001	< 0.0008	0.004	0.005
	22-Aug-2006		7	---	< 0.2	< 0.06	50	< 0.005	0.009	0.08	< 0.00001	< 0.007	0.003	1.05	< 0.001	< 0.00005	0.009	0.011	< 0.001	< 0.0001	< 0.0008	0.002	< 0.005
	21-Aug-2007		27	---	0.5	< 0.06	5	0.008	0.001	0.04	0.00014	0.002	0.0233	< 0.06	0.0013	---	0.0026	0.0173	0.001	< 0.0001	< 0.0002	0.0047	0.058
	19-Aug-2008		6.6	---	0.13	0.25	47	0.031	0.012	0.08	0.00002	< 0.001	0.0017	11	0.0003	---	0.018	0.0086	0.002	< 0.0001	< 0.0002	0.0051	0.097
(Duplicate)	19-Aug-2008		---	---	---	---	52	0.009	0.011	0.07	0.00004	< 0.001	0.0055	10	< 0.0002	---	0.016	0.0079	0.001	< 0.0001	< 0.0002	0.0050	0.034
	17-Aug-2009		6	7.00	0.019	0.003	12	0.008	0.0049	0.06	< 0.000005	< 0.001	0.0017	8.5	< 0.0002	---	0.0048	0.0065	0.0012	< 0.0001	< 0.0002	0.0051	0.008
	21-Aug-2010		5	7.43	0.59	0.010	15	0.015	0.0097	0.10	< 0.00003	< 0.001	0.0014	9.3	0.0003	---	0.0081	0.0070	0.0013	< 0.0001	< 0.0002	0.0017	0.003
	20-Aug-2011		5	---	< 0.03	< 0.03	4	0.01	0.008	0.07	< 0.00005	**< 0.01**	< 0.002	9.8	< 0.002	---	0.004	0.007	< 0.002	< 0.001	< 0.002	0.003	0.04
	16-Aug-2012		4.6	---	0.0053	< 0.0030	11	0.016	0.0081	0.080	< 0.000025	< 0.0010	0.0012	8.5	0.00021	---	0.0061	0.0059	0.0012	< 0.00010	< 0.00020	0.0017	0.0043

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BT3 99-20-13	16-Sep-1999	**W-CAT-3**	**1400**	8.2	0.04	< 0.005	**27**	0.02	0.003	1.14	< 0.0001	< 0.002	< 0.001	0.843	< 0.001	< 0.00005	0.004	< 0.008	< 0.001	< 0.0001	< 0.02	---	< 0.002
	19-Sep-2000		**840**	7.7	< 0.02	< 0.005	13	< 0.02	0.002	1.05	< 0.0001	< 0.005	< 0.005	0.009	< 0.001	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.03	---	< 0.005
	27-Aug-2001		**936**	7.7	< 0.02	< 0.005	13	0.05	< 0.05	1.16	< 0.002	< 0.005	< 0.005	0.171	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	20-Aug-2002		**570**	8.1	< 0.02	< 0.005	**24**	0.002	0.001	1.15	< 0.00010	< 0.001	0.0100	1.58	< 0.0005	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.0001	< 0.00010	0.010
	25-Aug-2003		**1580**	7.0	< 0.2	< 0.06	---	---	< 0.005	1.107	< 0.002	< 0.007	< 0.009	0.075	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.008
	22-Aug-2004		**1200**	---	< 0.2	< 0.06	---	< 0.025	< 0.025	1.378	< 0.000085	< 0.005	**0.025**	1.792	< 0.005	< 0.00005	< 0.005	< 0.008	**< 0.005**	**< 0.0005**	< 0.0040	< 0.005	< 0.005
(Duplicate)	22-Aug-2004		---	---	---	---	---	< 0.015	< 0.015	1.367	< 0.000051	< 0.005	**0.028**	1.843	< 0.003	< 0.00005	< 0.005	< 0.008	< 0.003	**< 0.0003**	< 0.0024	< 0.003	< 0.005
	25-Aug-2005		**440**	---	< 0.2	< 0.06	**53**	< 0.005	< 0.005	1.12	0.00001	< 0.007	< 0.002	1.28	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	**0.039**
	22-Aug-2006		**933**	---	< 0.2	< 0.06	**24**	< 0.005	< 0.005	1.08	< 0.00001	< 0.007	< 0.002	1.06	< 0.001	< 0.00005	< 0.006	< 0.008	0.003	< 0.0001	< 0.0008	< 0.001	< 0.005
	22-Aug-2007		**996**	---	< 0.2	< 0.06	4	0.004	0.002	0.88	< 0.00001	**0.012**	0.0017	0.46	< 0.0002	---	< 0.0002	0.0013	0.003	< 0.0001	< 0.0002	< 0.0001	0.008
	19-Aug-2008		**640**	---	< 0.003	< 0.003	13	< 0.001	0.001	0.90	0.00001	< 0.001	0.0022	0.24	0.0004	---	0.0027	0.0015	0.003	< 0.0001	< 0.0002	0.0003	**0.034**
	17-Aug-2009		**630**	7.71	0.008	< 0.003	5	< 0.001	0.0007	1.0	< 0.000005	< 0.001	0.0008	0.27	< 0.0002	---	0.0003	0.0017	0.0023	< 0.0001	< 0.0002	< 0.0001	0.005
	21-Aug-2010		**750**	7.90	0.025	0.008	< 2	0.002	0.0012	0.86	< 0.00003	< 0.001	0.0009	0.16	< 0.0002	---	0.0002	0.0017	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.003
	20-Aug-2011		150	---	0.003	< 0.003	< 2	0.002	0.0018	0.75	< 0.000005	< 0.001	< 0.0002	0.09	< 0.0002	---	< 0.0002	0.0011	0.0010	< 0.0001	< 0.0002	< 0.0001	< 0.003
(Duplicate)	20-Aug-2011		---	---	---	---	< 2	0.003	0.0019	0.72	0.000008	< 0.001	0.0006	0.08	< 0.0002	---	< 0.0002	0.0016	0.0009	< 0.0001	< 0.0002	< 0.0001	0.008
	20-Aug-2012		110	---	0.031	0.0042	5.0	0.0043	0.0016	0.77	0.0000054	< 0.0010	0.00053	0.13	< 0.00020	---	< 0.00020	0.0017	0.0034	< 0.00010	< 0.00020	< 0.00010	0.0033
(Duplicate)	20-Aug-2012		---	---	---	---	5.8	0.0039	0.0016	0.77	0.0000093	< 0.0010	0.00025	0.17	< 0.00020	---	< 0.00020	0.0016	0.0035	< 0.00010	< 0.00020	< 0.00010	< 0.0030
	24-Aug-2013		310	---	< 0.0030	0.0036	13	0.0042	0.0023	0.66	< 0.000025	< 0.0010	< 0.00020	0.17	< 0.00020	---	< 0.00020	0.0017	**0.0070**	< 0.00010	< 0.00020	< 0.00010	< 0.0030
(Duplicate)	24-Aug-2013		**320**	---	0.0042	0.0046	11	0.0046	0.0022	0.66	< 0.000025	< 0.0010	< 0.00020	0.17	< 0.00020	---	< 0.00020	0.0016	**0.0055**	< 0.00010	< 0.00020	< 0.00010	< 0.0030
	31-Jul-2014		**530**	---	0.012	< 0.010	7.3	0.0059	0.00064	0.80	0.000027	< 0.0010	0.00061	< 0.060	< 0.00020	---	< 0.00020	< 0.00050	**0.012**	< 0.000020	< 0.00020	< 0.00010	< 0.0030
(Duplicate)	31-Jul-2014		**540**	---	< 0.010	< 0.010	18	0.0045	0.00045	0.82	< 0.000020	< 0.0010	0.00040	0.23	< 0.00020	---	< 0.00020	< 0.00050	**0.013**	< 0.000020	< 0.00020	< 0.00010	< 0.0030
	08-Aug-2015		**570**	---	< 0.010	0.013	---	< 0.0030	0.0015	0.81	< 0.000020	< 0.0010	< 0.00020	0.11	< 0.00020	---	< 0.00020	0.0013	**0.012**	< 0.00010	< 0.00020	0.00028	< 0.0030
	05-Aug-2016		**690**	---	< 0.010	< 0.010	---	0.0036	0.00090	0.71	< 0.000020	< 0.0010	0.00038	0.082	< 0.00020	---	0.00062	0.0024	0.0014	< 0.00010	< 0.00020	0.00023	0.0060
	13-Aug-2017		**410**	---	< 0.010	< 0.010	---	0.0071	0.00079	0.85	< 0.000020	< 0.0010	0.0024	0.085	< 0.00020	---	< 0.00020	0.013	< 0.00020	< 0.00010	< 0.00020	< 0.00010	< 0.0030
	12-Jul-2018		260	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals															
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BT3 99-21-12	16-Sep-1999	**W-CAT-3**	720	8	< 0.02	< 0.005	---	< 0.02	0.002	0.774	< 0.0001	0.002	< 0.001	0.515	< 0.001	< 0.00005	< 0.004	< 0.008	< 0.001	< 0.0001	< 0.02	---	< 0.002
	18-Sep-2000		570	7.3	< 0.02	< 0.005	20	< 0.02	0.002	0.760	< 0.0001	< 0.005	**< 0.005**	0.055	< 0.001	< 0.00005	< 0.005	< 0.008	0.001	< 0.0001	< 0.03	---	< 0.005
	27-Aug-2001		175	7.6	< 0.02	0.005	4	0.95	< 0.05	0.682	< 0.002	< 0.005	**< 0.005**	4.23	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	20-Aug-2002		766	7.9	< 0.02	< 0.005	11	0.847	0.003	0.712	< 0.00010	0.002	0.0031	5.33	0.0010	< 0.00005	< 0.005	< 0.008	0.001	< 0.0001	< 0.0001	0.00025	0.017
	25-Aug-2003		1340	6.8	< 0.2	< 0.06	---	---	< 0.005	0.854	< 0.002	< 0.007	**< 0.009**	3.480	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
	22-Aug-2004		1500	---	< 0.2	< 0.06	---	< 0.025	< 0.025	0.992	< 0.000085	< 0.005	0.019	8.571	< 0.005	< 0.00005	< 0.005	< 0.008	**< 0.005**	**< 0.0005**	< 0.0040	< 0.005	< 0.005
	25-Aug-2005		76.9	---	< 0.2	< 0.06	21	0.008	< 0.005	0.58	< 0.00001	< 0.007	< 0.002	1.62	< 0.001	< 0.00005	< 0.006	< 0.008	0.001	< 0.0001	< 0.0008	< 0.001	0.121
	22-Aug-2006		216	---	< 0.2	< 0.06	8	< 0.005	< 0.005	0.58	< 0.00001	< 0.007	0.002	0.216	< 0.001	< 0.00005	< 0.006	0.043	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	22-Aug-2007		689	---	< 0.2	< 0.06	7	0.002	0.008	0.61	< 0.00001	0.005	0.0017	1.86	< 0.0002	---	0.0016	0.0065	0.002	< 0.0001	< 0.0002	0.0006	0.011
	19-Aug-2008		480	---	0.24	0.022	14	0.006	0.002	0.50	0.00001	< 0.001	0.0067	0.18	< 0.0002	---	0.0017	0.023	0.001	< 0.0001	< 0.0002	0.0012	0.087
	17-Aug-2009		490	7.29	0.19	0.019	5	0.002	0.0022	0.53	< 0.000005	< 0.001	0.0025	0.79	< 0.0002	---	0.0014	0.017	0.0004	< 0.0001	< 0.0002	0.0006	0.006
	21-Aug-2010		770	7.58	0.68	0.058	2	0.005	0.0015	0.54	< 0.00003	< 0.001	0.0026	0.88	< 0.0002	---	0.0012	0.013	0.0004	< 0.0001	< 0.0002	0.0014	0.008
	20-Aug-2011		140	---	3.2	0.22	< 2	0.004	0.0019	0.44	< 0.00003	< 0.001	0.0013	0.52	< 0.0002	---	0.0006	0.018	0.0005	< 0.0001	< 0.0002	0.0025	0.017
	20-Aug-2012		140	---	2.4	0.018	3.0	0.0025	0.0014	0.28	0.000018	< 0.0010	0.0023	0.51	< 0.00020	---	0.0018	0.0091	0.0010	< 0.00010	< 0.00020	0.0061	0.0058
	23-Aug-2013		270	---	4.0	0.052	11	0.0059	0.0016	0.54	< 0.000025	< 0.0010	0.0015	1.2	< 0.00020	---	0.0016	0.0099	0.0016	< 0.00010	< 0.00020	0.0023	0.0055
	31-Jul-2014		200	---	1.9	0.073	6.4	0.0048	0.0013	0.33	< 0.000020	< 0.0010	0.0019	0.33	< 0.00020	---	0.0016	0.018	0.00044	< 0.00010	< 0.00020	0.0069	0.0070
	08-Aug-2015		77	---	0.25	0.014	---	< 0.0030	0.0017	0.11	< 0.000020	< 0.0010	0.0010	0.24	< 0.00020	---	0.0070	0.012	0.0016	< 0.00010	< 0.00020	0.0036	0.012
	05-Aug-2016		160	---	1.1	0.042	---	0.0053	0.0011	0.087	0.000031	< 0.0010	0.0014	< 0.060	< 0.00020	---	0.0044	0.014	0.00037	< 0.00010	< 0.00020	0.0069	0.016
	13-Aug-2017		330	---	0.75	0.016	---	0.072	0.0033	0.41	< 0.000020	< 0.0010	0.0013	1.5	0.00026	---	0.0037	0.0067	0.00022	< 0.00010	< 0.00020	0.0048	0.0043
	12-Jul-2018		84	---	0.37	0.012	---	0.81	0.0050	0.26	0.000027	0.0017	0.0017	5.4	0.0021	---	0.0024	0.011	0.00048	< 0.00010	< 0.00020	0.0023	0.020
BT3 99-22-26	16-Sep-1999	**W-CAT-3**	10000	7.5	0.5	0.096	---	< 0.02	0.011	1.1	0.0014	0.008	< 0.001	0.471	< 0.001	< 0.00005	0.007	0.02	< 0.001	0.0001	< 0.02	---	< 0.002
	19-Sep-2000		9300	7.1	< 0.02	< 0.005	154	< 0.02	< 0.010	1.16	< 0.0010	0.005	< 0.005	0.366	< 0.005	< 0.00005	< 0.005	< 0.008	**< 0.010**	**< 0.0010**	< 0.03	---	< 0.005
	27-Aug-2001		7460	6.9	< 0.02	< 0.005	48	0.07	< 0.05	1.06	< 0.002	< 0.005	< 0.005	0.267	< 0.03	---	< 0.005	0.009	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	20-Aug-2002		6390	8.1	< 0.02	< 0.005	102	1.19	< 0.010	1.33	< 0.00050	**< 0.010**	0.0304	23.5	< 0.0050	< 0.00005	< 0.005	< 0.008	**< 0.010**	**< 0.0010**	< 0.0010	0.00071	0.016
	25-Aug-2003		7260	6.7	< 0.2	< 0.06	---	---	0.011	1.341	< 0.002	< 0.007	< 0.009	12.96	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
	15-Nov-2014		5200	7.15	< 0.010	< 0.010	---	---	---	---	---	---	---	1.6	---	---	---	---	---	---	---	---	---

Advisian
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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BT3 99-23-13	30-Jul-1999	**W-CAT-3**	**720**	8.2	---	---	---	0.06	< 0.04	1.28	< 0.002	< 0.002	0.004	0.052	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	0.006
	16-Sep-1999		**620**	8.4	< 0.02	< 0.005	9	0.05	0.001	1.41	< 0.0001	< 0.002	< 0.001	0.165	< 0.001	< 0.00005	0.008	< 0.008	0.001	< 0.0001	< 0.02	---	< 0.002
	19-Sep-2000		**550**	7.6	< 0.02	< 0.005	**29**	< 0.02	< 0.001	1.27	< 0.0001	< 0.005	< 0.005	0.023	< 0.001	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.03	---	< 0.005
	25-Aug-2001		**1520**	7.1	< 0.2	< 0.06	---	---	< 0.005	**1.524**	< 0.002	< 0.007	< 0.009	0.032	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.005
	27-Aug-2001		**1110**	7.8	< 0.02	< 0.005	10	0.06	< 0.05	1.45	< 0.002	< 0.005	< 0.005	0.162	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	20-Aug-2002		**859**	7.8	< 0.02	< 0.005	**22**	**0.667**	< 0.001	1.49	< 0.00010	0.003	**0.0146**	1.99	0.0007	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.0001	< 0.00010	0.017
	22-Aug-2004		**660**	---	< 0.2	< 0.06	---	< 0.025	< 0.025	**1.663**	< 0.000085	< 0.005	**0.055**	0.557	< 0.005	< 0.00005	< 0.005	< 0.008	**< 0.005**	**< 0.0005**	< 0.0040	< 0.005	< 0.005
	25-Aug-2005		**2300**	---	0.3	< 0.06	**72**	< 0.005	< 0.005	1.41	0.00002	< 0.007	0.003	0.801	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	**0.082**
(Duplicate)	25-Aug-2005		---	---	---	---	**39**	< 0.005	< 0.005	1.41	0.00001	< 0.007	0.003	0.698	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	**0.055**
	22-Aug-2006		**1830**	---	0.3	< 0.06	**41**	< 0.005	< 0.005	1.46	< 0.00001	< 0.007	0.003	0.483	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
(Duplicate)	22-Aug-2006		---	---	---	---	**84**	---	< 0.005	1.45	< 0.00001	< 0.007	0.004	0.544	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	---	< 0.001	< 0.005
	22-Aug-2007		**2370**	---	< 0.2	< 0.06	8	0.002	< 0.001	1.33	< 0.00001	**0.017**	0.0038	0.56	< 0.0002	---	0.0002	0.0017	< 0.001	< 0.0001	< 0.0002	< 0.0001	0.011
(Duplicate)	22-Aug-2007		---	---	---	---	6	0.004	< 0.001	1.33	< 0.00001	**0.017**	0.0040	0.56	< 0.0002	---	< 0.0002	0.0016	< 0.001	< 0.0001	< 0.0002	< 0.0001	**0.030**
	19-Aug-2008		**5500**	---	0.02	< 0.02	**55**	0.021	< 0.001	1.2	0.00007	< 0.001	0.0072	1.7	< 0.0002	---	< 0.0002	0.0022	< 0.001	< 0.0001	< 0.0002	< 0.0001	**0.16**
	17-Aug-2009		**4200**	7.07	0.005	< 0.003	9	< 0.005	< 0.001	1.4	< 0.00003	< 0.005	0.001	1.5	< 0.001	---	< 0.001	< 0.003	0.003	**< 0.0005**	< 0.001	< 0.0005	**< 0.02**
	22-Aug-2010		**3400**	7.46	0.015	0.005	< 10	0.001	0.0034	1.4	0.00015	< 0.001	0.0005	1.1	< 0.0002	---	**0.011**	0.0038	0.0008	< 0.0001	< 0.0002	0.0004	0.006
	20-Aug-2011		**1800**	---	< 0.003	< 0.003	< 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		**3900**	---	0.015	< 0.015	**< 40**	< 0.010	< 0.0020	**1.7**	< 0.000050	**< 0.010**	< 0.0020	1.5	< 0.0020	---	< 0.0020	0.0060	**0.016**	**< 0.0010**	< 0.0020	< 0.0010	< 0.030
	24-Aug-2013		**2900**	---	< 0.030	0.034	**53**	0.0035	0.0018	**1.7**	0.000076	< 0.0010	< 0.00020	1.8	< 0.00020	---	< 0.00020	0.0041	0.0029	< 0.00010	< 0.00020	< 0.00010	< 0.0030
(Duplicate)	24-Aug-2013		**3000**	---	< 0.030	0.032	**40**	0.0034	0.0019	**1.7**	0.000088	< 0.0010	< 0.00020	1.7	< 0.00020	---	< 0.00020	0.0040	0.0034	< 0.00010	< 0.00020	< 0.00010	< 0.0030
	31-Jul-2014		**1900**	---	0.42	0.029	**20**	0.0054	0.00058	**1.7**	< 0.000020	< 0.0010	0.00020	0.45	< 0.00020	---	< 0.00020	0.00060	**0.021**	< 0.000020	< 0.00020	< 0.00010	< 0.0030
(Duplicate)	31-Jul-2014		**1900**	---	0.028	< 0.010	17	0.0069	0.00051	**1.7**	< 0.000020	< 0.0010	0.00026	0.44	< 0.00020	---	< 0.00020	< 0.00050	**0.018**	< 0.000020	< 0.00020	< 0.00010	< 0.0030
	15-Nov-2014		**2800**	7.35	< 0.010	< 0.010	---	---	---	---	---	---	---	< 0.60	---	---	---	---	---	---	---	---	---
	08-Aug-2015		**2800**	---	< 0.010	< 0.010	---	< 0.060	< 0.0040	**1.6**	< 0.00040	**< 0.020**	< 0.0040	0.99	< 0.0040	---	< 0.0040	< 0.010	0.0042	**< 0.0020**	< 0.0040	< 0.0020	**< 0.060**
(Duplicate)	08-Aug-2015		---	---	---	---	---	< 0.0030	0.0018	**1.6**	0.000030	< 0.0010	< 0.00020	0.93	< 0.00020	---	< 0.00020	0.0012	**0.0098**	< 0.00010	< 0.00020	< 0.00010	< 0.0030
	05-Aug-2016		**3700**	---	< 0.010	< 0.010	---	< 0.030	< 0.0020	1.5	< 0.00020	**< 0.010**	< 0.0020	2.0	< 0.0020	---	< 0.0020	< 0.0050	< 0.0020	**< 0.0010**	< 0.0020	< 0.0010	**< 0.030**
(Duplicate)	05-Aug-2016		**3700**	---	< 0.010	< 0.010	---	< 0.030	< 0.0020	1.5	< 0.00020	**< 0.010**	< 0.0020	1.9	< 0.0020	---	< 0.0020	< 0.0050	< 0.0020	**< 0.0010**	< 0.0020	< 0.0010	**< 0.030**
	13-Aug-2017		**3900**	---	< 0.10	**< 0.10**	---	0.0032	0.00062	**1.7**	< 0.000020	< 0.0010	0.00040	0.96	< 0.00020	---	< 0.00020	< 0.00050	< 0.00020	< 0.00010	< 0.00020	< 0.00010	< 0.0030
(Duplicate)	13-Aug-2017		**3600**	---	< 0.10	**< 0.10**	---	0.0036	0.00069	**1.7**	< 0.000020	< 0.0010	0.00045	0.98	< 0.00020	---	< 0.00020	< 0.00050	< 0.00020	< 0.00010	< 0.00020	< 0.00010	< 0.0030
	12-Jul-2018		**2900**	---	< 0.10	**< 0.10**	---	0.010	0.00092	**1.7**	< 0.000020	< 0.0010	0.00055	**2.4**	< 0.00020	---	< 0.00020	< 0.00050	0.0024	< 0.00010	< 0.00020	< 0.00010	0.0042
(Duplicate)	12-Jul-2018		**2900**	---	< 0.10	**< 0.10**	---	0.0095	0.0010	**1.7**	< 0.000020	< 0.0010	0.00041	**2.4**	< 0.00020	---	< 0.00020	< 0.00050	0.0027	< 0.00010	< 0.00020	< 0.00010	< 0.0030

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BT3 SW01	20-Aug-2009	**W-CAT-6**	15	7.74	< 0.003	< 0.003	3	---	---	---	---	---	---	**0.45**	---	---	---	---	---	---	---	---	---
	21-Aug-2010		15	7.75	0.061	0.004	< 2	---	---	---	---	---	---	0.13	---	---	---	---	---	---	---	---	---
	20-Aug-2011		17	8.04	< 0.003	< 0.003	**32**	---	---	---	---	---	---	0.10	---	---	---	---	---	---	---	---	---
	16-Aug-2012		11	7.92	< 0.0030	< 0.0030	2.8	---	---	---	---	---	---	0.061	---	---	---	---	---	---	---	---	---
BT3-18-1-5.5	12-Jul-2018	**W-CAT-1**	99	---	0.013	< 0.010	9.6	0.0067	0.0022	0.15	0.000039	< 0.0010	0.0018	0.084	< 0.00020	---	0.0021	0.0033	0.00095	< 0.00010	< 0.00020	0.026	0.0074
BT3-EW1	30-Jul-1999	**W-CAT-3**	**2000**	8.5	---	---	---	**0.51**	**0.14**	1.30	< 0.002	0.002	0.003	1.38	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	**0.041**
	15-Nov-2014		**15000**	6.85	< 1.0	**< 1.0**	---	---	---	---	---	---	---	**22**	---	---	---	---	---	---	---	---	---
BT3-OBS1	03-Aug-2000	**W-CAT-3**	**3900**	7.4	0.03	< 0.005	---	0.07	< 0.05	1.46	< 0.002	< 0.005	< 0.005	0.179	< 0.03	---	0.007	0.018	**< 0.03**	**< 0.01**	< 0.03	---	0.017
	15-Nov-2014		**20000**	6.92	< 0.050	**7.5**	---	---	---	---	---	---	---	**20**	---	---	---	---	---	---	---	---	---
BT3-OBS2	30-Jul-1999	**W-CAT-3**	**1500**	8.4	---	---	---	**0.21**	0.04	1.06	< 0.002	< 0.002	< 0.001	0.232	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	**0.065**
BT3-OBS3	30-Jul-1999	**W-CAT-3**	**3100**	7.8	---	---	---	0.06	< 0.04	1.14	< 0.002	0.002	< 0.001	0.081	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	**0.069**
	03-Aug-2000		**4100**	7.3	< 0.02	< 0.005	---	0.07	< 0.05	1.31	< 0.002	0.006	< 0.005	0.113	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	15-Nov-2014		**8600**	7.12	< 0.010	< 0.010	---	---	---	---	---	---	---	**2.3**	---	---	---	---	---	---	---	---	---
BT3-OBS5	30-Jul-1999	**W-CAT-3**	**31000**	6.9	---	---	---	0.12	**0.13**	0.632	< 0.002	**0.010**	< 0.001	**2.51**	< 0.02	---	< 0.004	0.019	**< 0.03**	**< 0.01**	< 0.02	---	< 0.002
	03-Aug-2000		**20000**	6.7	< 0.02	0.005	---	0.11	< 0.05	0.949	< 0.002	**0.010**	< 0.005	1.70	< 0.03	---	< 0.005	0.025	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	15-Nov-2014		**1900**	7.36	< 0.010	< 0.010	---	---	---	---	---	---	---	< 0.60	---	---	---	---	---	---	---	---	---
BT3-OBS6	30-Jul-1999	**W-CAT-3**	**2200**	8.1	---	---	---	**0.42**	< 0.04	1.45	< 0.002	< 0.002	< 0.001	0.930	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	**0.024**
	03-Aug-2000		**1800**	7.7	< 0.02	< 0.005	---	0.08	< 0.05	1.44	< 0.002	< 0.005	< 0.005	0.158	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	0.013
	15-Nov-2014		**6700**	7.86	< 0.010	< 0.010	---	---	---	---	---	---	---	< 0.60	---	---	---	---	---	---	---	---	---

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Table 3
Water Analytical Results: Inorganic Parameters

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Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals															
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-1: Mainland Locations - Surficial Sediments - 95th Percentile Background
W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background
W-CAT-6: Mainland Surface Water - 95th Percentile Background

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Table 4
Water Analytical Results: Total Metals

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Total Metals														
			Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-6			**0.85**	**0.007**	**0.04**	**0.00013**	**0.010**	**0.005**	**31.4**	**0.002**	**0.011**	**0.007**	**0.002**	**---**	**0.002**	**0.005**	**0.040**
BT3 SW01	20-Aug-2009	**W-CAT-6**	0.021	0.002	< 0.02	< 0.00003	< 0.005	< 0.001	0.56	< 0.001	0.025	0.007	< 0.001	**< 0.0005**	< 0.001	0.012	0.03
	21-Aug-2010		0.31	0.0054	< 0.02	0.00005	< 0.001	0.0020	5.3	0.0014	0.017	0.0065	0.0007	< 0.0001	< 0.0002	0.0038	0.046
	20-Aug-2011		0.027	0.0053	< 0.02	< 0.000005	< 0.001	< 0.0002	0.20	< 0.0002	< 0.0002	0.0043	0.0008	< 0.0001	< 0.0002	0.0003	< 0.003
	16-Aug-2012		0.057	0.0023	0.046	0.000057	< 0.0010	0.0014	1.0	0.00028	0.0024	0.0097	0.0011	< 0.00010	< 0.00020	0.0014	0.046

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-6: Mainland Surface Water - 95th Percentile Background

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH											
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**	**0.0034**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**	**0.00010**	**0.00005**	**0.000010**	**0.000009**	**0.0000075**	**0.00004**	**0.00005**	**0.0001**	**0.00008**	**0.000036**	**0.0002**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.00005**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**	**0.0002**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BOS DP 08-2	20-Aug-2008	**W-CAT-1**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	17	**< 0.3**	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	0.45	< 0.1	---	---	---	---	---	---	---	---	---	---	---
BOS DP 98-1	10-Sep-1998	**W-CAT-1**	< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Sep-1999		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2000		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Aug-2001		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2002		< 0.0005	0.0006	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
BOS DP 98-2	10-Sep-1998	**W-CAT-1**	0.0019	0.0017	< 0.0005	0.0031	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Sep-1999		< 0.0050	**< 0.0050**	< 0.0050	< 0.0050	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2000		0.0025	< 0.0005	< 0.0005	0.0030	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Aug-2001		< 0.0050	**< 0.0050**	< 0.0050	< 0.01	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2002		0.0021	0.0030	< 0.0005	0.0043	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		0.0015	0.0005	< 0.0005	< 0.001	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
BOS-DP-13-2-1.35	17-Sep-2013	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	06-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	---
	18-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.00010	< 0.000050	0.000030	0.000042	< 0.0000075	0.00033	0.000068	< 0.00010	0.00032	0.00023	< 0.00020
BOS-DP-13-3-2	17-Sep-2013	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	10-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	---
	06-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	**< 0.12**	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	---
	18-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	0.00015	< 0.000050	0.000086	0.00013	0.000021	0.00088	0.00017	< 0.00010	0.00089	0.00061	< 0.00020
	21-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BT3 02-32-6	20-Aug-2002	**W-CAT-3**	0.28	0.0041	0.0095	0.015	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		0.0176	< 0.0005	< 0.0005	< 0.001	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2004		0.0020	< 0.0005	< 0.0005	< 0.001	< 0.1	0.9	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		0.0028	< 0.0005	0.0006	< 0.0015	< 0.1	0.6	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	0.5	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		< 0.0004	< 0.0004	< 0.0004	< 0.0008	0.13	0.6	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2009		0.0014	< 0.0004	< 0.0004	< 0.0008	0.14	2.7	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2010		0.0017	< 0.0004	< 0.0004	< 0.0008	0.13	2.0	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2011		0.0012	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.9	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		0.0013	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.88	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2013		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2014		---	---	---	---	---	---	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	---
	08-Aug-2015		---	---	---	---	---	---	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00015	< 0.000050	< 0.000020	---
	05-Aug-2016		---	---	---	---	---	---	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000053	< 0.00010	< 0.000050	0.000029	---
	13-Aug-2017		---	---	---	---	---	---	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000066	< 0.00010	0.00010	0.000052	< 0.00020
	12-Jul-2018		---	---	---	---	---	---	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000081	0.00013	0.000099	0.000048	< 0.00020
BT3 02-33-4	20-Aug-2002	**W-CAT-3**	< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2004		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		< 0.0005	< 0.0005	< 0.0005	< 0.0015	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2007		< 0.0004	< 0.0004	< 0.0004	0.0011	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BT3 93-19-17	07-Sep-1997	**W-CAT-3**	0.0007	0.0015	< 0.0005	(0.0029-0.0034)	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-Sep-1998		0.0006	0.0005	< 0.0005	(0.0010-0.0015)	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	10-Sep-1998		0.0008	0.0006	< 0.0005	(0.0010-0.0015)	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Sep-1999		0.0006	< 0.0005	< 0.0005	0.0007	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2000		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2001		0.0009	< 0.0005	< 0.0005	(0.00080-0.0013)	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	29-Aug-2001		0.0006	< 0.0005	< 0.0005	(0.00070-0.0012)	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2002		0.0007	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Aug-2002		0.0007	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		0.0012	< 0.0005	< 0.0005	< 0.001	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
BT3 98-17-3	10-Sep-1998	**W-CAT-1**	0.36	0.08	0.062	0.267	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Sep-1999		0.99	**< 0.01**	0.017	0.11	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2000		0.65	**< 0.0050**	0.03	0.068	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2001		0.33	**< 0.0050**	0.022	(0.048-0.053)	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2002		0.69	**< 0.0050**	0.052	0.087	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		0.403	**< 0.0050**	0.0130	0.0509	0.3	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2004		0.114	**< 0.0050**	< 0.0050	(0.0109-0.0159)	1.0	2.2	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		0.0634	0.0008	0.0017	0.0058	0.51	3.2	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2006		0.0825	< 0.0005	< 0.0005	0.002	0.169	2.8	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2007		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		0.024	< 0.0004	< 0.0004	< 0.0008	0.1	1.8	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2008		0.023	< 0.0004	< 0.0004	< 0.0008	0.39	1.9	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2009		0.027	0.0006	0.0005	< 0.0008	0.21	4.0	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2010		0.0059	< 0.0004	< 0.0004	< 0.0008	< 0.1	9.1	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2011		0.0031	0.0005	< 0.0004	< 0.0008	0.14	3.9	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2012		0.0025	< 0.00040	< 0.00040	< 0.00080	< 0.1	6.3	---	---	---	---	---	---	---	---	---	---	---
BT3 99-20-13	16-Sep-1999	**W-CAT-3**	0.0007	0.0008	0.0018	0.0051	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2000		0.0008	< 0.0005	0.0015	0.0035	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2001		0.0008	< 0.0005	0.0009	(0.0015-0.002)	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2002		0.0007	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		0.0013	< 0.0005	< 0.0005	< 0.001	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2004		0.0007	< 0.0005	< 0.0005	< 0.0005	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	22-Aug-2004		0.0009	< 0.0005	< 0.0005	< 0.0005	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		0.0007	< 0.0005	< 0.0005	< 0.0015	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2007		< 0.0004	< 0.0004	< 0.0004	0.0016	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2009		0.0031	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.4	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2010		0.0014	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2011		0.0045	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Aug-2011		0.0030	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		0.0040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Aug-2012		0.0040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2013		0.00089	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	24-Aug-2013		0.00085	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2014		0.0014	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	31-Jul-2014		0.0014	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2015		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2016		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Aug-2017		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2018		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BT3 99-21-12	16-Sep-1999	**W-CAT-3**	< 0.0050	**< 0.0050**	< 0.0050	< 0.0050	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2000		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2001		< 0.0005	< 0.0005	< 0.0005	(0.0005-0.001)	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2002		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		0.0008	< 0.0005	< 0.0005	< 0.001	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2004		< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		0.0006	< 0.0005	< 0.0005	< 0.0015	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2007		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013		0.0014	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2014		0.0020	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	0.00021	< 0.000020	---
	08-Aug-2015		---	---	---	---	---	---	< 0.00011	---	< 0.000011	< 0.0000090	< 0.0000079	< 0.000011	< 0.000053	< 0.00011	< 0.000053	< 0.000021	---
	05-Aug-2016		---	---	---	---	---	---	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	---
	13-Aug-2017		---	---	---	---	---	---	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	0.00019	< 0.000020	< 0.00020

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH											
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)	
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**	**0.0034**	
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**	**0.00010**	**0.00005**	**0.000010**	**0.000009**	**0.0000075**	**0.00004**	**0.00005**	**0.0001**	**0.00008**	**0.000036**	**0.0002**	
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.00005**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**	**0.0002**	
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	
	12-Jul-2018		---	---	---	---	---	---	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020	
BT3 99-22-26	16-Sep-1999	**W-CAT-3**	0.1	**0.094**	0.018	0.15	---	---	---	---	---	---	---	---	---	---	---	---	---	
	19-Sep-2000		0.09	**0.035**	0.0056	0.05	---	---	---	---	---	---	---	---	---	---	---	---	---	
	27-Aug-2001		0.16	**0.082**	0.016	0.14	---	---	---	---	---	---	---	---	---	---	---	---	---	
	20-Aug-2002		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	25-Aug-2003		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	15-Nov-2014		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
BT3 99-23-13	30-Jul-1999	**W-CAT-3**	0.0009	< 0.0005	< 0.0005	0.0035	---	---	---	---	---	---	---	---	---	---	---	---	---	
	16-Sep-1999		0.058	**0.0031**	0.0059	0.034	---	---	---	---	---	---	---	---	---	---	---	---	---	
	19-Sep-2000		0.035	0.0007	0.0049	0.026	---	---	---	---	---	---	---	---	---	---	---	---	---	
	25-Aug-2001		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	27-Aug-2001		0.046	< 0.0005	0.0079	0.0377	---	---	---	---	---	---	---	---	---	---	---	---	---	
	20-Aug-2002		0.0088	< 0.0005	< 0.0005	0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	
	25-Aug-2003		0.0689	< 0.0005	0.0088	0.0381	0.2	---	---	---	---	---	---	---	---	---	---	---	---	
(Duplicate)	25-Aug-2003		0.0734	0.0005	0.0083	0.0371	0.4	---	---	---	---	---	---	---	---	---	---	---	---	
	22-Aug-2004		0.0301	0.0005	0.0057	0.0155	0.2	< 0.1	---	---	---	---	---	---	---	---	---	---	---	
	25-Aug-2005		0.0462	0.0023	0.0066	0.0118	0.24	< 0.1	---	---	---	---	---	---	---	---	---	---	---	
(Duplicate)	25-Aug-2005		0.0466	0.0023	0.0064	0.012	0.28	< 0.1	---	---	---	---	---	---	---	---	---	---	---	
	22-Aug-2006		0.0111	< 0.0005	< 0.0005	< 0.001	0.184	0.3	---	---	---	---	---	---	---	---	---	---	---	
(Duplicate)	22-Aug-2006		0.0213	< 0.0005	< 0.0005	< 0.001	0.199	0.2	---	---	---	---	---	---	---	---	---	---	---	
	22-Aug-2007		0.0093	< 0.0004	< 0.0004	0.0023	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---	---	
(Duplicate)	22-Aug-2007		0.0077	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.4	---	---	---	---	---	---	---	---	---	---	---	
	19-Aug-2008		0.013	< 0.0004	0.0017	0.0078	< 0.1	0.3	---	---	---	---	---	---	---	---	---	---	---	
	17-Aug-2009		0.0044	< 0.0004	0.0005	0.0025	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---	---	
	22-Aug-2010		0.011	< 0.0004	0.0007	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---	
	20-Aug-2011		0.0051	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---	
	20-Aug-2012		0.013	< 0.00040	< 0.00040	0.0011	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---	
	24-Aug-2013		0.031	< 0.00040	0.00058	0.0019	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---	
(Duplicate)	24-Aug-2013		0.03	< 0.00040	0.00047	0.0018	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---	
	31-Jul-2014		0.022	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00019	< 0.000050	< 0.000020	---	
(Duplicate)	31-Jul-2014		0.025	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00018	< 0.000050	< 0.000020	---	
	15-Nov-2014		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	08-Aug-2015		---	---	---	---	---	---	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00010	< 0.000050	< 0.000020	---	
(Duplicate)	08-Aug-2015		---	---	---	---	---	---	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00020	< 0.000050	< 0.000020	---	
	05-Aug-2016		---	---	---	---	---	---	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00020	< 0.000050	< 0.000020	---	
(Duplicate)	05-Aug-2016		---	---	---	---	---	---	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00020	< 0.000050	< 0.000020	---	
	13-Aug-2017		---	---	---	---	---	---	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020	
(Duplicate)	13-Aug-2017		---	---	---	---	---	---	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020	
	12-Jul-2018		---	---	---	---	---	---	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020	
(Duplicate)	12-Jul-2018		---	---	---	---	---	---	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020	
BT3 99-27-20	25-Aug-2003	**W-CAT-3**	< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---	
BT3 SW01	20-Aug-2009	**W-CAT-6**	< 0.0004	0.0006	< 0.0004	< 0.0008	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---	---	
	21-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---	
	20-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---	
	16-Aug-2012		< 0.0004	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---	
BT3-18-1-5.5	12-Jul-2018	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---	
BT3-EW1	30-Jul-1999	**W-CAT-3**	0.083	**0.026**	0.017	0.12	---	---	---	---	---	---	---	---	---	---	---	---	---	
	15-Nov-2014		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
BT3-OBS1	03-Aug-2000	**W-CAT-3**	0.011	0.0028	0.0027	0.015	---	---	---	---	---	---	---	---	---	---	---	---	---	
	15-Nov-2014		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
BT3-OBS2	30-Jul-1999	**W-CAT-3**	0.016	0.0014	0.0014	0.0048	---	---	---	---	---	---	---	---	---	---	---	---	---	
BT3-OBS3	30-Jul-1999	**W-CAT-3**	0.016	**0.0032**	0.0008	0.0045	---	---	---	---	---	---	---	---	---	---	---	---	---	
	03-Aug-2000		0.0079	0.0015	0.0013	0.0049	---	---	---	---	---	---	---	---	---	---	---	---	---	
	15-Nov-2014		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
BT3-OBS5	30-Jul-1999	**W-CAT-3**	0.0006	0.0005	0.0007	0.0028	---	---	---	---	---	---	---	---	---	---	---	---	---	
	03-Aug-2000		0.0011	< 0.0005	< 0.0005	0.0014	---	---	---	---	---	---	---	---	---	---	---	---	---	
	15-Nov-2014		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
BT3-OBS6	30-Jul-1999	**W-CAT-3**	< 0.0005	< 0.0005	< 0.0005	0.0018	---	---	---	---	---	---	---	---	---	---	---	---	---	
	03-Aug-2000		0.035	< 0.0005	0.0088	0.0028	---	---	---	---	---	---	---	---	---	---	---	---	---	
	15-Nov-2014		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

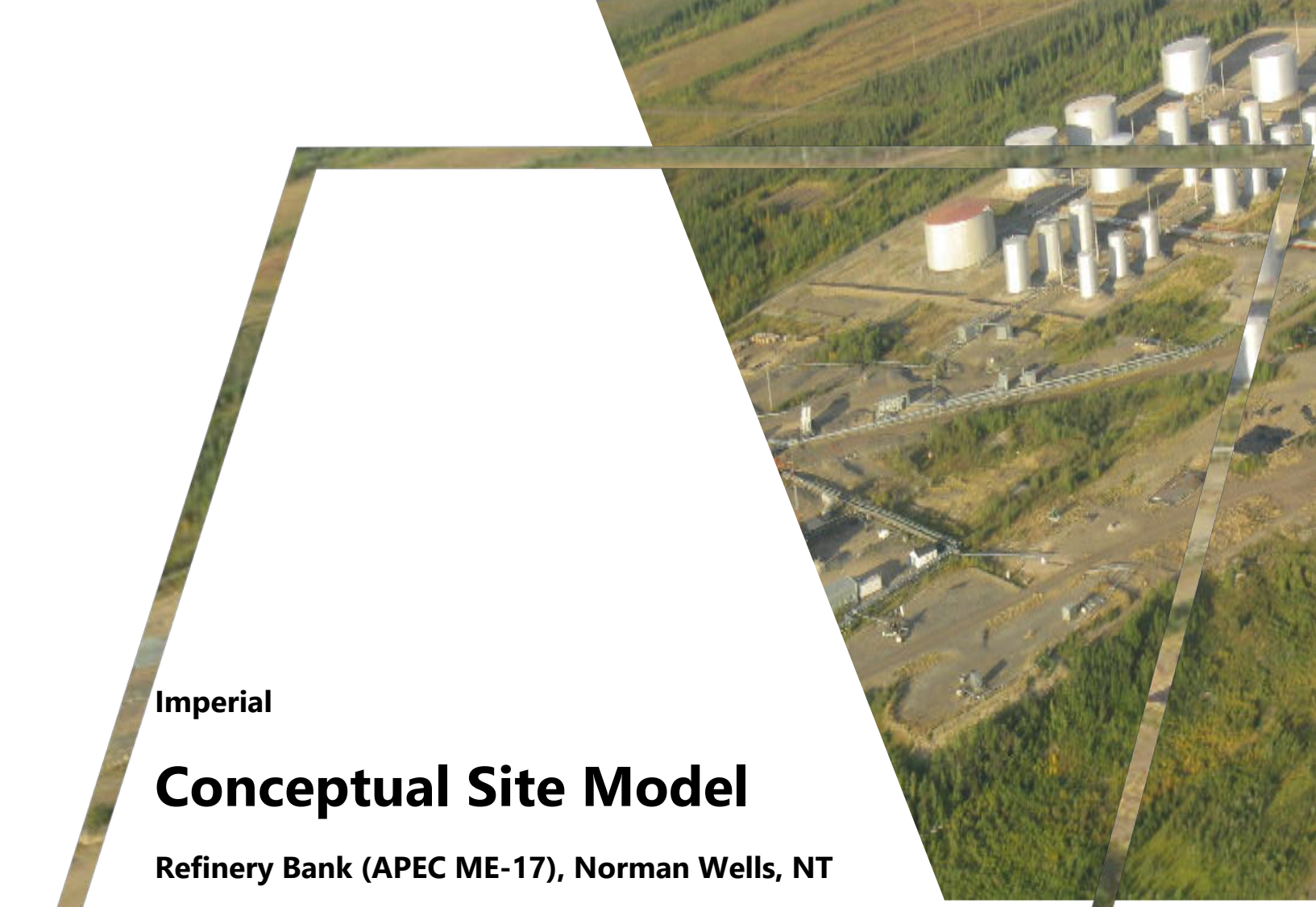
Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-1: Mainland Locations - Surficial Sediments - 95th Percentile Background
W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background
W-CAT-6: Mainland Surface Water - 95th Percentile Background

Appendix 6
Conceptual Site Model: Refinery Bank



Imperial

Conceptual Site Model

Refinery Bank (APEC ME-17), Norman Wells, NT

30 May 2019

407011-00622 – CA-REP-0001

Advisian
Suite 500, 151 Canada Olympic Rd SW
Calgary, AB T3B 6B7 CANADA
Phone: +1 403 247 0200
Facsimile: +1 403 247 4811
www.advisian.com

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Project No. 407011-00622-CA-REP-0001 - Conceptual Site Model: Refinery Bank (APEC ME-17), Norman Wells, NT

Rev	Description	Originator Approval	Reviewer Approval	Project Manager Approval	Date
0	Issued as Final	L. Glatiotis / R. Reader	M. Brown	S. Gibb	30-May-19

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1. Conceptual Site Model Summary

Site Description

LAND USE		
	Site Description:	Road bordering the northern edge of the Site (Figure 1, 4A). Road running from the east to the Fuel Loading Dock (FLD). FLD is on the south edge of site, remains active to fuel barge traffic. 7 underground fuel lines run N-S from FLD to Mainland Tank Farm. C-41X is an active well in the NE corner of Site.
	Current Land Use:	CCME Industrial land use
	Future Land Use:	CCME Industrial land use
HISTORICAL LAND USE		
1.	Infrastructure Type:	Former Refinery (Figure 2, 1979 air photo)
	Notes:	Refining crude oil
	Years Active:	Constructed in 1940; decommissioned in 1998
2.	Infrastructure Type:	Fuel Loading Dock
	Notes:	Transporting refined product, currently in use handling various fuels for local use. Pipeline leak in 1998 within pipeline ROW on middle terrace near current location of well RB-RW-11.
	Years Active:	Likely from ~1940; shown in earliest airphoto (1950).
3.	Infrastructure Type:	C-41X
	Notes:	Injection well
	Years Active:	Spud date July 1942; currently in use.
SITE SETTING		
	Topography and Drainage:	Site slopes to the South across a series of three terraces (denoted upper, middle and lower). Drainage is toward the Mackenzie River flood plain. See Figures 2, 3, 4A/B, 5A to 5D.
	Nearby Surface Water Bodies (Distance and Direction):	Mackenzie River (about 140 m to South of 1998 pipeline leak, when comparing to typical river level based on 40.5 m elevation contour).
SOIL AND GROUNDWATER CONDITIONS		
	Surficial Materials:	Silt, sandy silt, silty sand, silty clay, or sandy clay (Figures 5A to 5D).
	Depth to Permafrost:	Permafrost not present.
	Depth to Bedrock:	Varies: approx. 2 to 3 mbgs at beach; approx. 6 to 9 mbgs at upper terrace.

Bedrock Lithology:	Fractured siltstone, sandstone and shale
Number of Groundwater-Bearing Zones:	3
Number of Piezometers:	57 existing, 33 historical now destroyed/decommissioned, 10 active remediation.
Free Product in Upper Groundwater-Bearing Zone:	Yes, maximum thickness (in past 5 years) was 0.36 m as measured in well RB-RW-3 (Jul-2014).
Free Product in Second Groundwater-Bearing Zone:	Yes, maximum thickness (in past 5 years) was 1.44 m as measured in well RB-RW-11 (Sep-2014).
First Groundwater-Bearing Zone	
Primary Soil Type/Lithology:	Unconsolidated sand, silt, and silty sand.
Dominant Grain Size:	Grain size is predominantly fine-grained, but there are deposits of sand across the site as well. Due to the presence of pipeline ROWs backfilled with sand, sand pathways act as a potential conduit for contaminant transport. Based on this rationale, the governing grain size for contaminant transport should be classified as coarse.
Depth to Groundwater Surface:	~3 mbgs at lower terrace (variation across seasons and site location).
Hydraulic Conductivity (Minimum):	4.3×10^{-6} m /s
Hydraulic Conductivity (Maximum):	5.5×10^{-6} m/s
Hydraulic Conductivity (Geometric Mean K):	4.9×10^{-6} m/s
Vertical Hydraulic Gradient:	Downward
Lateral Hydraulic Gradient (I):	Spatially and temporally variable from about 0.003 to 0.04, but typically I = 0.006 (based on fluid level observed historically in near-source well RB-OBS38, compared to typical river level 170 m away at 40.5 m elevation contour). Typical river level is exhibited in Figure 3, and the mean high water elevation is shown for comparison. When river is at mean high water elevation of 42.0 m, the lateral gradient is reversed with flow potential into the bank.
Groundwater Flow Direction and Velocity:	South towards Mackenzie River; velocity of a non-reactive tracer estimated at 4.6 m/year (based on v = KI/n) and dissolved petroleum hydrocarbons (PHC) velocity of 2.1 m/year or less. This estimate is based on the "typical" lateral gradient listed above. The reversed lateral gradient noted during river flood stage would only be applicable about 1-2 months per year.

Second Groundwater-Bearing Zone

Primary Soil Type/Lithology:	Fractured siltstone, sandstone and shale
Dominant Grain Size:	Fracture flow
Depth to Groundwater Surface:	~12 mbgs at middle terrace (variation across seasons and site location).
Hydraulic Conductivity (Minimum):	4.9×10^{-10} m /s
Hydraulic Conductivity (Maximum):	$>1.0 \times 10^{-5}$ m/s
Hydraulic Conductivity (Geometric Mean K):	5.6×10^{-5} m/s
Lateral Hydraulic Gradient (I):	Spatially and temporally variable from about 0.006 to 0.02, but typically I = 0.006 is estimated and used for flow velocity calculations. Note discussion of typical river level and mean high water elevation above under first groundwater bearing zone. When remedial pumping wells are active, lateral gradient toward river is decreased or reversed.
Groundwater Flow Direction and Velocity:	South towards Mackenzie River; velocity of a non-reactive tracer estimated at 53 m/year (based on v = KI/n) and dissolved PHC velocity of 14 m/year or less. This estimate is based on typical lateral gradient, when remedial pumping wells are not active.

Third Groundwater-Bearing Zone

Primary Soil Type/Lithology:	Siltstone, sandstone and shale
Dominant Grain Size:	n/a
Depth to Groundwater Surface:	~25 mbgs (limited local monitoring wells in this zone due to natural seepage of crude oil and saline water at this depth and deeper).
Hydraulic Conductivity (Minimum):	n/a
Hydraulic Conductivity (Maximum):	n/a
Hydraulic Conductivity (Geometric Mean K):	n/a
Lateral Hydraulic Gradient (I):	n/a
Groundwater Flow Direction and Velocity:	n/a

HISTORICAL ENVIRONMENTAL ACTIVITIES

Partial Remedial Excavation of the API Separator area (1996-97).

Soil, Groundwater and Geophysical characterization programs (since 1997).

Partial Remedial Excavation at Jet "B" fuel spill (1999).

GW pumping system (RB-GWTF) (since 2003).

Multiphase extraction (RB-MPE) (since 2004).

CURRENT STATUS

Remaining soil and groundwater impacts (Figures 6 and 7).

Facility related issues are complicated by the presence of natural hydrocarbon seeps in the area, which are documented along the beach east and west of the fuel loading dock. Natural seepage also occurs in the upper bedrock in this area, affecting salinity, hydrocarbon and PAH concentrations observed.

Sources and Impacts

SOURCES

Historical Sources:	Leak from a pipeline flange in middle terrace, carrying Jet "B" fuel (APEC ME-17; Appendix 4).
	Former Refinery, with a number of potential sources (Figures 2, 3, 4B): ▪ API separator, ▪ the load line valving area, ▪ the Portco Building (barrel storage), ▪ the flare pit, and ▪ refinery storage tanks.
Current Sources:	Impacted soil (secondary source).
	Existing pipelines from Fuel Loading Dock to Tank Farm (potential).

KNOWN ENVIRONMENTAL CONCERNS

a. Soil

Potential Contaminants of Concern:	PHCs, PAHs, salinity, metals
Proven Contaminants of Concern:	PHCs - BTEX, PHC F1 to F4G – in part due to natural seepage.
	Salinity – many of the SAR exceedances are associated with natural shallow bedrock conditions.
	PAHs – in part due to natural seepage.
Lateral Delineation:	PHC issues complicated due to the presence of natural crude oil and saline water seeps (Figure 6).
Vertical Delineation:	Vertical delineation of PHC complicated due to the presence of natural crude oil and saline water seeps.

b. Groundwater	
Potential Contaminants of Concern:	PHCs, phenols, PAHs, metals, salinity
Proven Contaminants of Concern:	PHCs - BTEX, PHC F1 to F2 Metals - close to background concentrations. Phenols - close to background concentrations for natural seepage. Salinity - close to background concentrations for natural seepage. PAHs - close to background concentrations for natural seepage.
Presence of Free Product:	LNAPL present at site.
Lateral Delineation:	PHC, salinity, and PAH issues complicated due to the presence of natural seeps. In general, facility-related light-end PHC issues are laterally delineated within an area approximately 90 m east-west and 80 m north-south (Figure 7).
Vertical Delineation:	Vertical delineation of PHC is complicated due to natural seeps in upper bedrock locally. Facility related PHCs are present in the first and second groundwater bearing zone wells in upper bedrock.

Migration Pathways and Receptors

MIGRATION PATHWAYS	Summarized in Figures 8 and 9. Potential pathways include leaching from soil to groundwater, lateral migration in groundwater, discharge to surface water, shallow vapour migration in soil, water and wind erosion.
RECEPTORS	Summarized in Figures 8 and 9. Main receptor of interest is the Mackenzie River, in relation to human, wildlife and freshwater aquatic life receptors. Plants and soil invertebrates may also be receptors in the rooting zone of shallow soils.
EXPOSURE PATHWAYS	Summarized in Figures 8 and 9.

Synopsis of Conceptual Risk

In terms of soil related exposure pathways, remedial excavations were completed in 1996-97 of the API separator area, and in 1999 to remove PHC impacted soils underlying the 1998 pipeline leak of jet fuel. Other impacted soils remain in place.

The remedial MPE and groundwater pumping systems (operational since 2003 but currently dormant due to the temporary field shutdown) have reduced free product thickness observed in soils and upper bedrock significantly. The remediation systems will resume operation in 2019 now that the Norman Wells facility has restarted production. Due to physical obstacles to further excavation including the active pipeline right-of-way, steep slopes, the road bed and the high water table on the lower terrace beach area, some residual soil impacts exceeding PHC guidelines remain in place. Risks related to potential exposure pathways for human, ecological, microbial and wildlife contact or ingestion have been reduced by the remedial excavations and MPE system, but not eliminated.

The pathway for leaching from soil to groundwater is active. However, measured light-end PHC values, particularly benzene, toluene and ethylbenzene (BTE) in groundwater south of the mean high water mark (42.0 m elevation) generally do not exceed applied CCME fresh water aquatic guidelines.

In terms of groundwater related exposure pathways, Figure 7 indicates that PHCs exceeding one or more of the applied guidelines for BTE persist under the footprint of the 1998 pipeline leak, along the underground north-south pipeline corridor to the fuel loading dock, and in a portion of the lower terrace and beach area east of the dock. As such the exposure scenarios related to wildlife watering and freshwater aquatic life at the Mackenzie River are complete and active. In terms of groundwater consumption, the exposure scenario is incomplete for both humans and wildlife. Human drinking water is sourced locally from the Mackenzie River upstream of this site, and is treated by the Town of Norman Wells before use.

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The investigation undertaken by WorleyParsons with respect to this report and any conclusions or recommendations made in this report reflect WorleyParsons' judgment based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. This report has been prepared for the specific application to this site and it is based, in part, upon visual observation of the site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site, substances addressed by the investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

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Figures

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AIR PHOTO SOURCE: PLANET LABS GEOMATICS CORP.,
DATE: APRIL 6 AND 30, 2017

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IMPERIAL
CONCEPTUAL SITE MODEL
REFINERY BANK, NORMAN WELLS, NT

SITE LOCATION MAP

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FIG No 1

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HISTORICAL AIR PHOTO 1979

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FIG No 2

REV B

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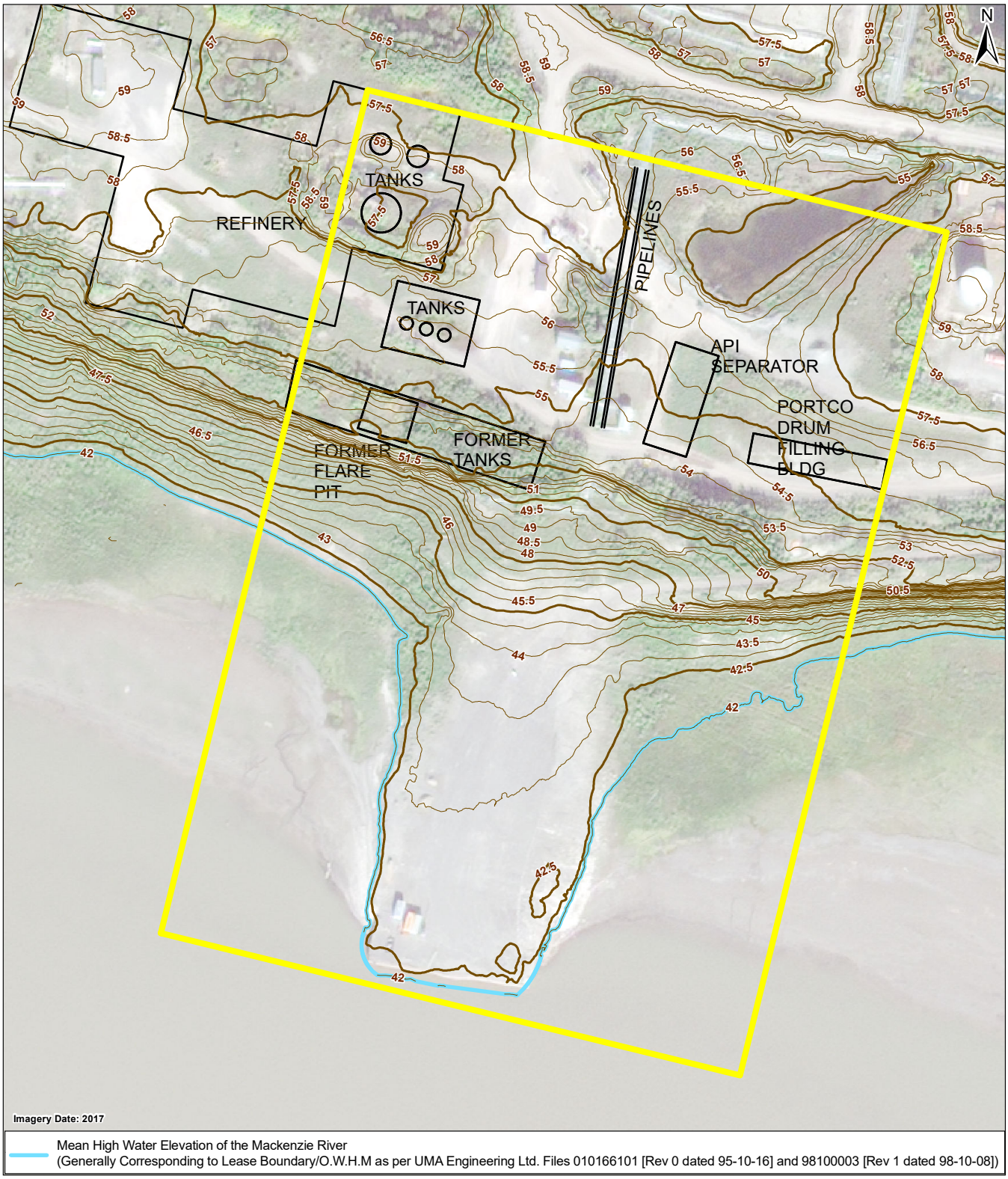

Mean High Water Elevation of the Mackenzie River
(Generally Corresponding to Lease Boundary/O.W.H.M as per UMA Engineering Ltd. Files 010166101 [Rev 0 dated 95-10-16] and 98100003 [Rev 1 dated 98-10-08])

Site Boundary

Elevation Contour (2.5m interval)

Elevation Contour (0.5m interval)

Source:
Airborne Imaging; 2012

0 50 100
Metres
1:2,000

IMPERIAL
CONCEPTUAL SITE MODEL
REFINERY BANK, NORMAN WELLS, NT

SITE PLAN SHOWING TOPOGRAPHY

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FIG No 3

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LEGEND

- INJECTION WELL LOCATION
- SOIL SAMPLING LOCATION

HISTORICAL FEATURES SHOWN WITH WHITE OUTLINE

NOTE:
SOIL SAMPLING LOCATIONS PRIOR TO 2000 HAVE NOT BEEN SHOWN AS THE DATA IS NO LONGER CONSIDERED RELEVANT DUE TO 1) CHANGES IN SOIL ANALYTICAL METHODS, AND 2) THE EXTENSIVE IN SITU REMEDIAL PROGRAMS THAT HAVE OCCURRED SINCE THE EARLY 2000s.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 10 20 30 40 m

1:750

IMPERIAL
CONCEPTUAL SITE MODEL
REFINERY BANK, NORMAN WELLS, NT

SITE PLAN SHOWING SOIL SAMPLING LOCATIONS

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		FIG No 4A	REV A

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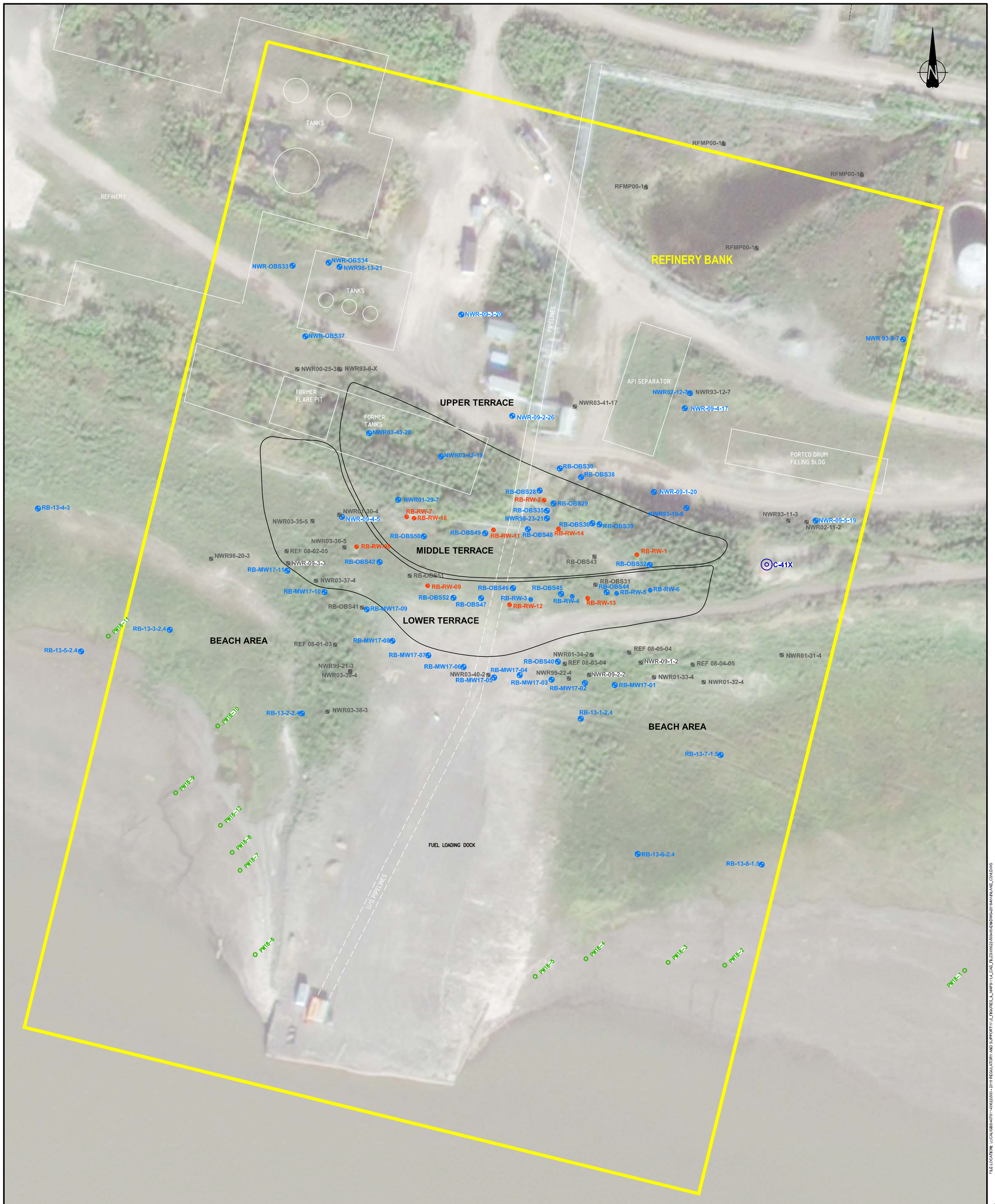

LEGEND

- INJECTION WELL LOCATION
- CURRENT MONITORING WELL LOCATION
- REMEDIATION RECOVERY WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- POREWATER SAMPLING LOCATION

HISTORICAL FEATURES SHOWN WITH WHITE OUTLINE

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
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m 0 10 20 30 40 m

1:750

IMPERIAL
CONCEPTUAL SITE MODEL
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SITE PLAN SHOWING GROUNDWATER SAMPLING LOCATIONS

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FIG No 4B | REV A

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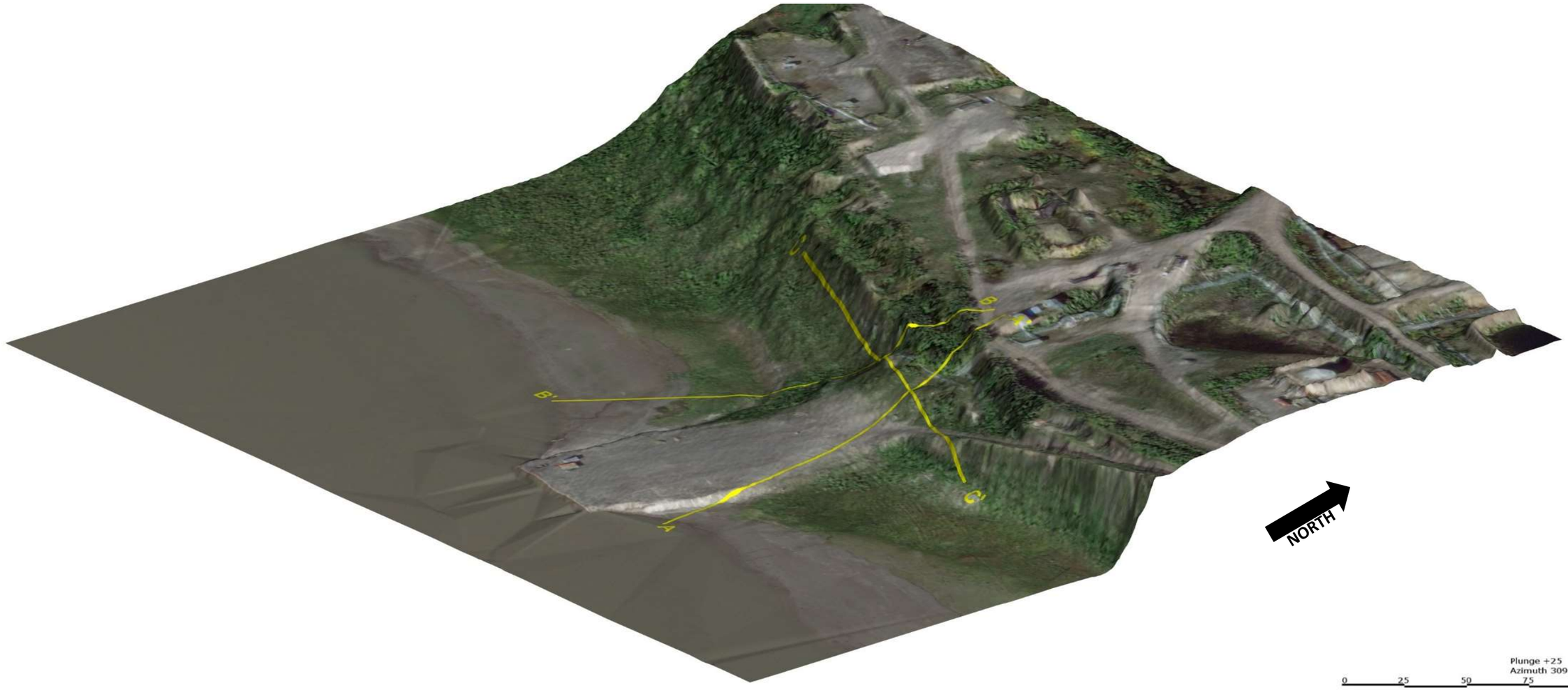

Unit

- CLAY
- COBBLES AND/OR GRAVEL
- NO SAMPLE
- SAND
- SANDSTONE
- SILT
- SILTSTONE/MUDSTONE/SHALE
- TOPSOIL/FILL/ORGANICS

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CONCEPTUAL SITE MODEL
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SITE PLAN 3-D VISUALIZATION

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FIG No. **5A** | REV **A**

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NORTH

A

A'

RB-13-6-2.4
RB-13-1-2.4
RB-MW17-01
RB-MW17-02
NWR 09-2-2
REF 08-05-04
RB-RW-13
RB-RW-5
RB-OBS-43
RB-OBS36
RB-OBS39
RB-OBS38
RB-OBS30
NWR 03-41-17

+40

+30

30 m

Bedrock Surface

Mackenzie River

FGBZ Water Table

SGBZ Water Table

Plunge 00
Azimuth 266

0 10 20 30

Unit
- CLAY
- COBBLES AND/OR GRAVEL
- NO SAMPLE
- SAND
- SANDSTONE
- SILT
- SILTSTONE/MUDSTONE/SHALE
- TOPSOIL/FILL/ORGANICS

LOCATION WHERE MOST RECENT GROUNDWATER SAMPLE HAD PETROLEUM PARAMETERS WITHIN GUIDELINES, SHOWN IN GREEN

LOCATION WHERE MOST RECENT GROUNDWATER SAMPLE HAD PETROLEUM PARAMETERS EXCEEDING GUIDELINES, SHOWN IN RED

LOCATION WHERE MOST RECENT GROUNDWATER SAMPLE HAD FREE-PHASE HYDROCARBONS, SHOWN IN PURPLE

Notes: 1) 3x vertical exaggeration
2) Cross-section width is 20 m.

IMPERIAL
CONCEPTUAL SITE MODEL
REFINERY BANK, NORMAN WELLS, NT

CROSS-SECTION A-A' (SOUTHEAST TO NORTH)

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FIG No. 5B REV A

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NORTH

B

B'

0.0

12.5

25.0

37.5

NWR 09-2-26
NWR 03-42-19
RB-RW-10
RB-RW-7
RB-OBS50
RB-OBS51
RB-OBS42
RB-MW17-09
REF 08-01-03
NWR 03-39-4
NWR 03-38-3
RB-13-2-2.4

SGBZ Water Table

Bedrock Surface

FGBZ Water Table

Mackenzie River

Plunge +01
Azimuth 123

0.0 12.5 25.0 37.5 50.0

Unit

- CLAY
- COBBLES AND/OR GRAVEL
- NO SAMPLE
- SAND
- SANDSTONE
- SILT
- SILTSTONE/MUDSTONE/SHALE
- TOPSOIL/FILL/ORGANICS

LOCATION WHERE MOST RECENT GROUNDWATER SAMPLE HAD PETROLEUM PARAMETERS WITHIN GUIDELINES, SHOWN IN GREEN

LOCATION WHERE MOST RECENT GROUNDWATER SAMPLE HAD PETROLEUM PARAMETERS EXCEEDING GUIDELINES, SHOWN IN RED

LOCATION WHERE MOST RECENT GROUNDWATER SAMPLE HAD FREE-PHASE HYDROCARBONS, SHOWN IN PURPLE

Notes: 1) 3x vertical exaggeration
2) Cross-section width is 20 m.

IMPERIAL
CONCEPTUAL SITE MODEL
REFINERY BANK, NORMAN WELLS, NT

CROSS-SECTION B-B' (NORTH TO SOUTHWEST)

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FIG No. 5C

REV A

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Site Plan Showing Cross-Section Locations

NORTH

C

C'

30 m

NWR 03-43-20
NWR 03-42-19
RB-OBS28
RB-RW-2
RB-OBS35
NWR 98-23-21
RB-RW-14
RB-OBS36
RB-OBS39
RB-OBS-43
RB-RW-1
RB-OBS32

+45
+30

Bedrock Surface

SGBZ Water Table

FGBZ Water Table

Plunge 00
Azimuth 025

0.0 12.5 25.0 37.5 50.0

Unit
- CLAY
- COBBLES AND/OR GRAVEL
- NO SAMPLE
- SAND
- SANDSTONE
- SILT
- SILTSTONE/MUDSTONE/SHALE
- TOPSOIL/FILL/ORGANICS

LOCATION WHERE MOST RECENT GROUNDWATER SAMPLE HAD PETROLEUM PARAMETERS WITHIN GUIDELINES, SHOWN IN GREEN

LOCATION WHERE MOST RECENT GROUNDWATER SAMPLE HAD PETROLEUM PARAMETERS EXCEEDING GUIDELINES, SHOWN IN RED

LOCATION WHERE MOST RECENT GROUNDWATER SAMPLE HAD FREE-PHASE HYDROCARBONS, SHOWN IN PURPLE

Notes: 1) 3x vertical exaggeration
2) Cross-section width is 20 m.

IMPERIAL
CONCEPTUAL SITE MODEL
REFINERY BANK, NORMAN WELLS, NT

CROSS-SECTION C-C' (NORTHWEST TO SOUTHEAST)

Date:	Drawn by:	Edited by:	App'd by:
10-May-19	AM	DG	MB

WorleyParsons Project No.: 407011-00622-500

FIG No.: 5D

REV: A

OneWay to zero harm

Advisian WorleyParsons Group

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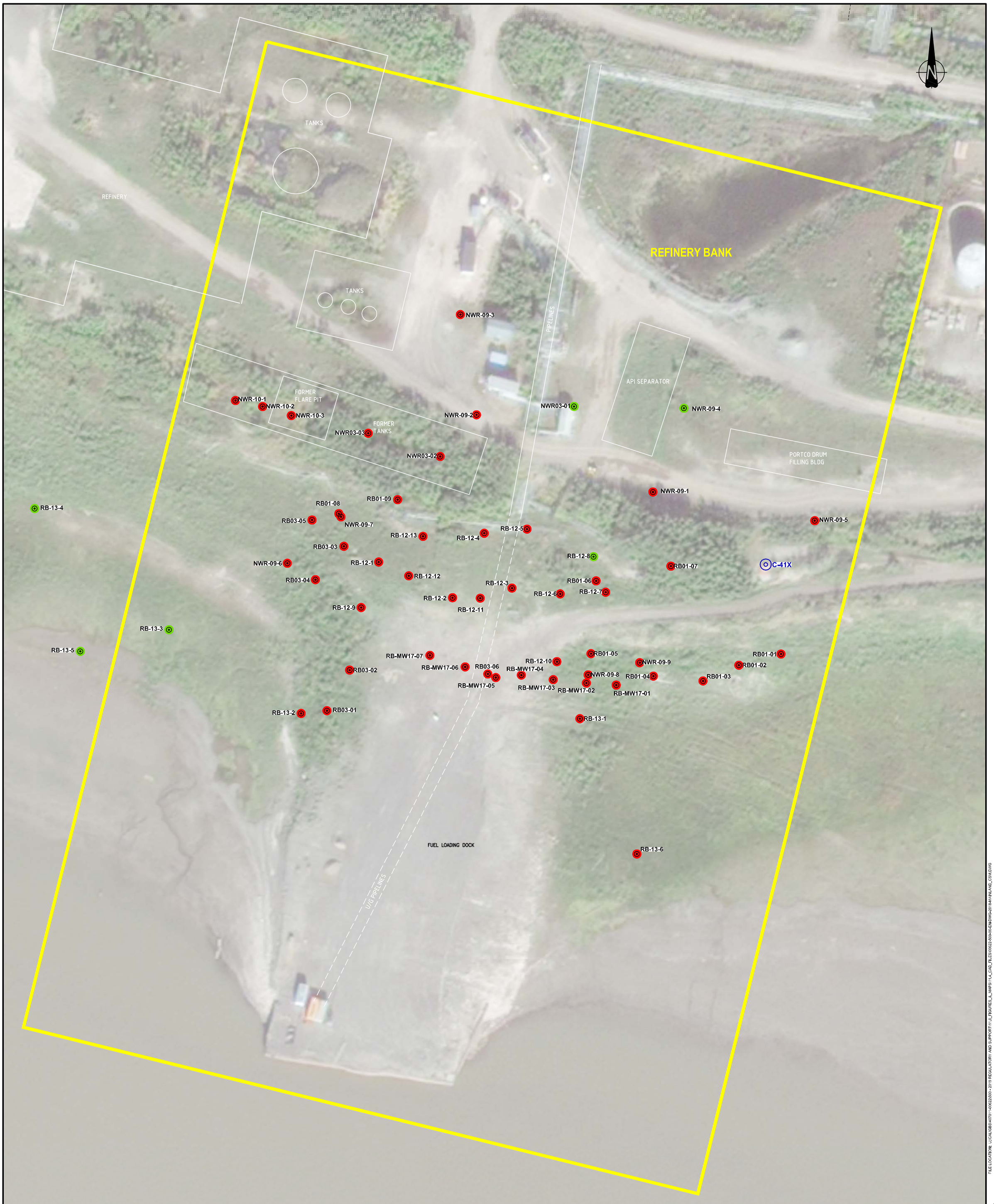
FILE LOCATION: CALGARY

FILE DIRECTORY: U:\CALGBS\407011-00622\0400-CONCEPTUAL SITE MODEL\11.0_FIGURES_&_MAPS\11.5_PDF_FINAL_FIGURES\REFINERY BANK



LEGEND

- INJECTION WELL LOCATION
- SOIL SAMPLING LOCATION

HISTORICAL FEATURES SHOWN WITH WHITE OUTLINE

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLIED ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE PETROLEUM HYDROCARBON (BTEX, F1 TO F4-G) PARAMETER THAT WAS ANALYZED, SHOWN IN RED

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.
4. SOIL SAMPLING LOCATIONS PRIOR TO 2000 HAVE NOT BEEN SHOWN AS THE DATA IS NO LONGER CONSIDERED RELEVANT DUE TO 1) CHANGES IN SOIL ANALYTICAL METHODS, AND 2) THE EXTENSIVE IN SITU REMEDIAL PROGRAMS THAT HAVE OCCURRED SINCE THE EARLY 2000s.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 10 20 30 40 m

1:750

IMPERIAL
CONCEPTUAL SITE MODEL
REFINERY BANK, NORMAN WELLS, NT

SITE PLAN SHOWING
SOIL PETROLEUM HYDROCARBON ANALYTICAL RESULTS

Date: 16-MAY-19	Drawn by: OTHERS	Edited by: BMF	App'd by:
		WorleyParsons Project No. 407011-00622-500	
		FIG No 6	REV B

OneWay "to zero harm"

Advisian WorleyParsons Group

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PLOT DATE & TIME: 16/5/2019 11:28:06 AM
SAVE DATE & TIME: 15/2019 11:33:21 PM
USER NAME: blair.fink
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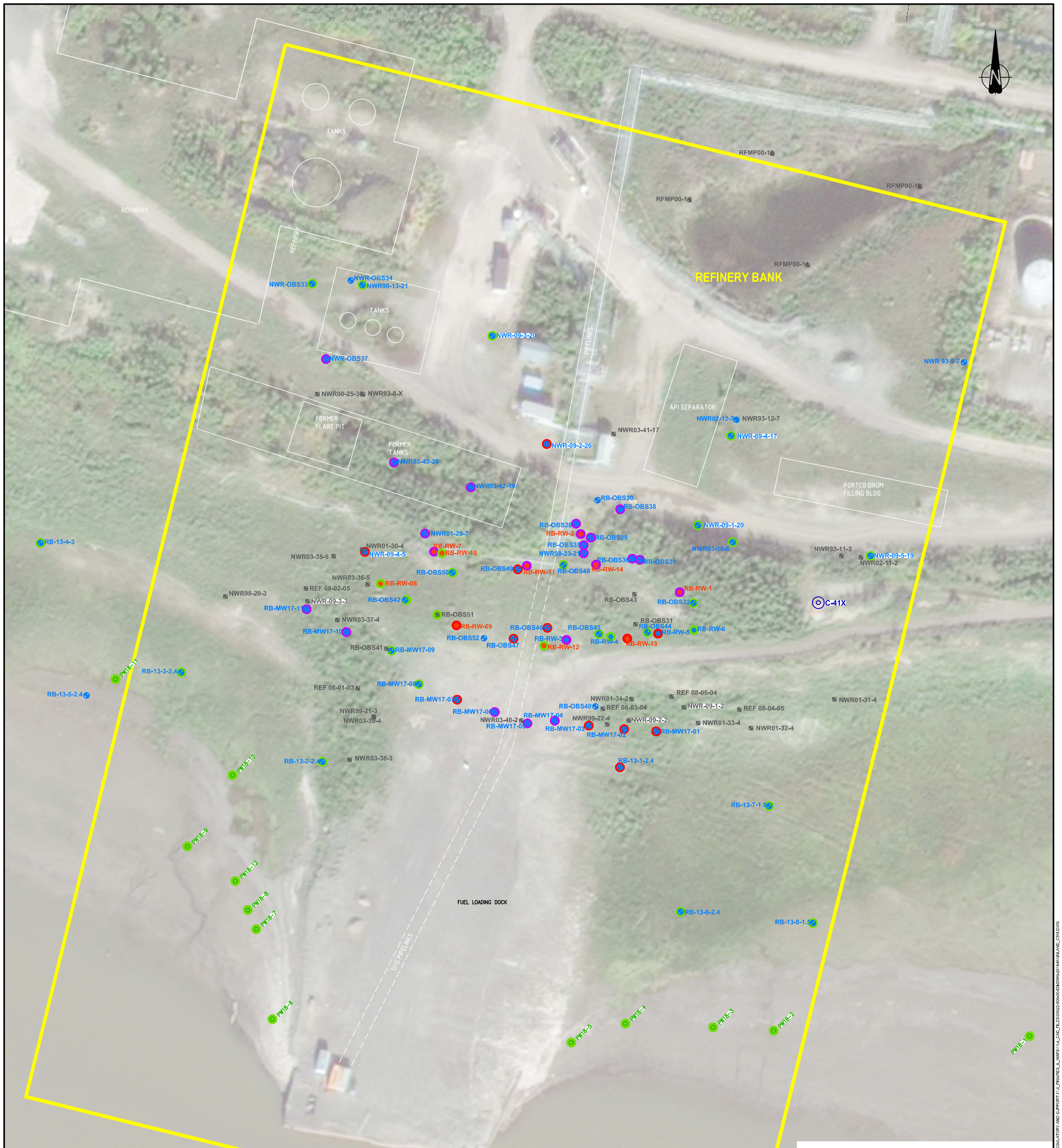

LEGEND

- INJECTION WELL LOCATION
- CURRENT MONITORING WELL LOCATION
- REMEDIATION MONITORING WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- POREWATER SAMPLING LOCATION

HISTORICAL FEATURES SHOWN WITH WHITE OUTLINE

ANALYTICAL RESULTS

- LOCATION WHERE GROUNDWATER SAMPLE MET APPLICABLE ASSESSMENT CRITERIA FOR ALL PETROLEUM HYDROCARBON PARAMETERS (BENZENE, TOLUENE, AND ETHYLBENZENE) THAT WERE ANALYZED BETWEEN 2015-2018, SHOWN IN GREEN.
- LOCATION WHERE GROUNDWATER SAMPLE EXCEEDED APPLICABLE ASSESSMENT CRITERIA FOR AT LEAST ONE PETROLEUM HYDROCARBON PARAMETER THAT WAS ANALYZED BETWEEN 2015-2018, SHOWN IN RED
- LOCATION WHERE MEASURABLE FREE PHASE WAS OBSERVED IN ONE OR MORE SAMPLING EVENTS BETWEEN 2015-2018, SHOWN IN PURPLE
- LOCATION NOT SAMPLED BETWEEN 2015-2018

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 10 20 30 40 m

1:750

IMPERIAL
CONCEPTUAL SITE MODEL
REFINERY BANK, NORMAN WELLS, NT

SITE PLAN SHOWING
GROUNDWATER PETROLEUM HYDROCARBON ANALYTICAL RESULTS

Date: 01-MAY-19	Drawn by: OTHERS	Edited by: BMF	App'd by:

WorleyParsons Project No. 407011-00622-500

FIG No 7 | REV A

OneWay to zero harm

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PLOT DATE & TIME: 1/5/2019 2:31:12 PM
SAVE DATE & TIME: 1/5/2019 2:29:43 PM
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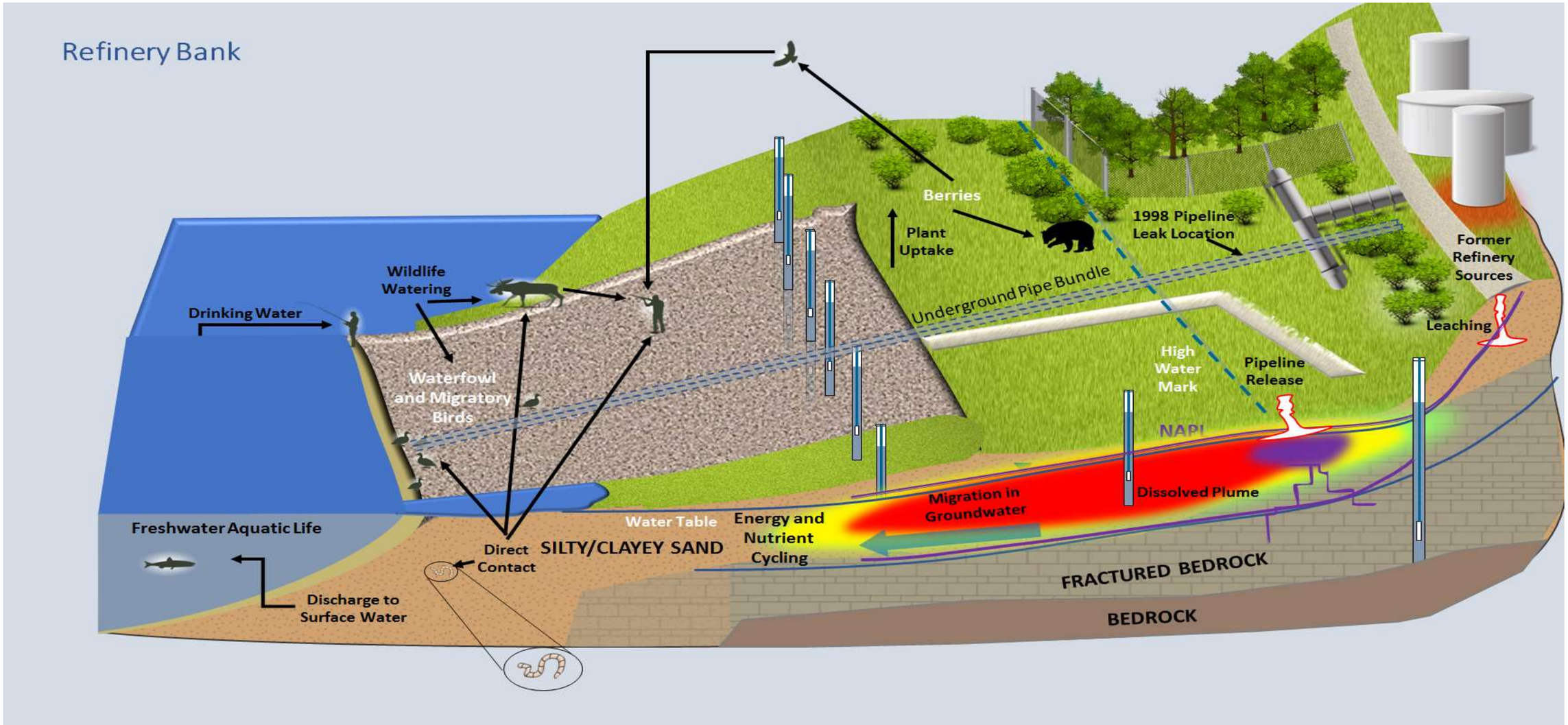
USER NAME: blalchuk
ISSUING OFFICE: CAD



Health Canada, 2015. Conceptual Site Model Builder, Version 1.0. Developed by eSolutions Group Ltd. 2015.

IMPERIAL
CONCEPTUAL SITE MODEL
REFINERY BANK, NORMAN WELLS, NT

CONCEPTUAL SITE MODEL

Date:	Drawn by:	Edited by:	App'd by:
10-May-19	AH	DG	MG

OneWay™ to zero harm

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WorleyParsons Project No.
407011-00622-500

FIG No. 8

REV A

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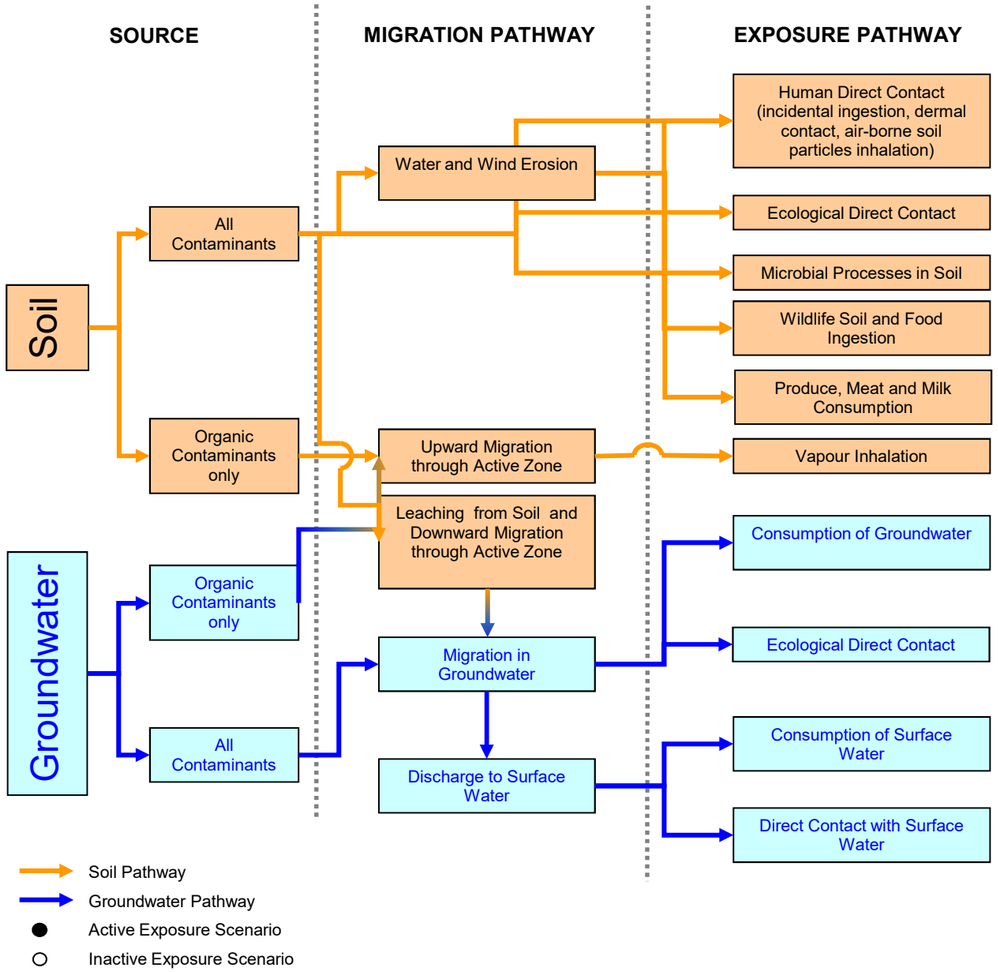
FILE LOCATION: U:\CALG\GBS\

FILE DIRECTORY: CALGARY

Refinery Bank - Conceptual Exposure Model Flow Chart
(Current Land Use and Site Conditions)



RECEPTORS

Humans	Wildlife	Plant and Soil Invertebrates	Freshwater Aquatic Life
●			
		●	
		●	
	●		
●[1]			
○			
		●	
○	●		
			●

Notes: 1) Although the current land use is industrial, it is recognized that due to the size of the site and the geographical features of the area (i.e. river, creek, etc.) animals may move on and off of the site, and hunters are able to hunt in close proximity to the site. As such, meat consumption through hunting should be considered as an active exposure pathway.

IMPERIAL
CONCEPTUAL SITE MODEL
REFINERY BANK, NORMAN WELLS, NT

CONCEPTUAL EXPOSURE MODEL
CURRENT LAND USE AND SITE CONDITIONS

Date:	Drawn by:	Edited by:	App'd by:
10-May-19	AH	LG	MB

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WorleyParsons Project No.
407011-00622-500

FIG No. 9 | REV A

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FILE LOCATION: CALGARY

FILE DIRECTORY: U:\CAL\GBS\407011-00622\0400-CONCEPTUAL SITE MODEL\11.0_FIGURES_&_MAPS\11.5_PDF_FINAL_FIGURES\BT3

Tables

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Coarse Surface				**4**	**12**	**(6 - 8)**	**40**	**12**	**2000**	**8**	**22**	**87**	**1.4**	**300**	**91**	**600**	**50**	**40**	**89**	**2.9**	**40**	**1**	**300**	**300**	**130**	**410**
CCME Industrial Coarse Sub-Surface				**4**	**12**	**(6 - 8)**	**40**	**12**	**2000**	**8**	**22**	**87**	**1.4**	**300**	**91**	**600**	**50**	**40**	**89**	**2.9**	**40**	**1**	**300**	**300**	**130**	**410**
S-CAT-7				**0.79**	**0.64**	**7.72**	**1**	**11.6**	**419.5**	**0.83**	**0.9**	**23.55**	**0.15**	**10.3**	**18.6**	**13.6**	**0.08**	**2.23**	**29.6**	**0.91**	**---**	**0.3**	**---**	**1.6**	**41.8**	**113**
S-CAT-8				**0.98**	**7.28**	**7.78**	**1**	**20.2**	**360**	**0.87**	**0.96**	**33.6**	**0.15**	**17.4**	**41.8**	**15.4**	**0.05**	**2.84**	**52.2**	**0.98**	**---**	**0.3**	**---**	**1.28**	**46.8**	**154**
S-CAT-9				**0.9**	**2.84**	**7.75**	**1**	**21**	**194**	**0.61**	**0.1**	**36.4**	**0.15**	**18.7**	**30.1**	**11**	**0.076**	**0.4**	**55.1**	**0.5**	**---**	**0.3**	**---**	**1**	**86.8**	**135.5**
RB01-07	22-Jun-2001	5.0 - 6.0m	**S-CAT-9**	0.723	0.74	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB01-08	24-Jun-2001	1.5 - 3.0m	**S-CAT-9**	0.329	0.58	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2001	4.5 - 6.0m	**S-CAT-9**	0.279	1.28	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB01-09	24-Jun-2001	1.0 - 1.5m	**S-CAT-9**	0.174	1.12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2001	3.0 - 4.5m	**S-CAT-9**	0.966	15.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB03-04	12-Jul-2003	0.0 - 1.5m	**S-CAT-8**	---	---	---	---	---	---	---	---	---	---	---	---	22.9	---	---	---	---	---	---	---	---	---	---
RB03-05	12-Jul-2003	0.0 - 1.5m	**S-CAT-8**	---	---	---	---	---	---	---	---	---	---	---	---	34.6	---	---	---	---	---	---	---	---	---	---
RB03-06	12-Jul-2003	1.5 - 3.0m	**S-CAT-8**	---	---	---	---	---	---	---	---	---	---	---	---	25.1	---	---	---	---	---	---	---	---	---	---
NWR-09-1	21-Aug-2009	0.0 - 0.3m	**S-CAT-7**	1.9	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2009	0.5 - 0.8m	**S-CAT-8**	0.38	0.6	---	< 1	4	140	< 0.4	0.2	20	< 0.15	4	8	13	< 0.05	1.7	16	< 0.5	< 1	< 0.3	< 1	< 1	14	35
	21-Aug-2009	3.5 - 3.8m	**S-CAT-8**	0.27	0.7	---	< 1	10	140	0.4	< 0.1	24	< 0.15	12	15	8	0.06	< 0.4	36	< 0.5	< 1	< 0.3	< 1	< 1	35	89
	21-Aug-2009	5.8 - 6.1m	**S-CAT-8**	1.4	0.3	---	< 1	15	97	0.5	< 0.1	25	< 0.15	13	17	8	0.08	< 0.4	39	< 0.5	< 1	< 0.3	< 1	< 1	35	91
NWR-09-2	03-Aug-2009	0.4 - 0.7m	**S-CAT-7**	0.82	0.3	---	1	10	190	< 0.4	0.5	19	< 0.15	8	18	16	0.06	6.4	33	0.9	< 1	0.5	< 1	1	22	89
	03-Aug-2009	0.9 - 1.2m	**S-CAT-8**	2.6	0.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2009	2.1 - 2.4m	**S-CAT-8**	0.53	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2009	5.7 - 6.0m	**S-CAT-9**	0.82	2.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-3	04-Aug-2009	0.0 - 0.3m	**S-CAT-7**	2.7	0.5	---	< 1	15	200	< 0.4	0.5	18	< 0.15	9	25	34	0.06	26	40	2.0	< 1	1.4	< 1	3	34	92
	04-Aug-2009	1.2 - 1.5m	**S-CAT-8**	0.75	0.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2009	4.8 - 5.1m	**S-CAT-9**	0.82	8.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-4	03-Aug-2009	0.0 - 0.3m	**S-CAT-7**	0.48	0.6	---	< 1	7	270	< 0.4	0.5	14	< 0.15	8	18	10	< 0.05	2.8	26	0.7	< 1	< 0.3	< 1	< 1	22	79
	03-Aug-2009	0.9 - 1.2m	**S-CAT-8**	1	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2009	2.7 - 3.0m	**S-CAT-8**	0.45	3.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2009	4.0 - 4.3m	**S-CAT-8**	0.55	1.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2009	4.5 - 4.8m	**S-CAT-9**	0.46	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2009	7.2 - 7.5m	**S-CAT-9**	0.42	1.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-5	03-Aug-2009	0.0 - 0.6m	**S-CAT-7**	0.49	0.4	---	< 1	5	170	< 0.4	0.2	12	< 0.15	4	10	20	0.05	1.9	14	< 0.5	< 1	< 0.3	< 1	< 1	12	41
	03-Aug-2009	1.0 - 1.3m	**S-CAT-8**	0.52	0.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-6	05-Aug-2009	0.0 - 0.3m	**S-CAT-7**	0.36	0.5	---	< 1	12	190	< 0.4	0.2	19	< 0.15	8	12	13	0.06	1.0	26	< 0.5	< 1	< 0.3	< 1	< 1	34	67
	05-Aug-2009	0.9 - 1.2m	**S-CAT-9**	0.24	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	2.7 - 3.0m	**S-CAT-9**	0.57	2.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-7	05-Aug-2009	0.0 - 0.3m	**S-CAT-7**	0.32	0.5	---	< 1	17	110	0.5	0.1	24	< 0.15	12	14	16	< 0.05	1.6	37	1.0	< 1	< 0.3	1	< 1	45	86
	05-Aug-2009	1.2 - 1.5m	**S-CAT-8**	0.26	0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	3.0 - 3.3m	**S-CAT-9**	0.9	5.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-8	05-Aug-2009	0.0 - 0.3m	**S-CAT-7**	0.87	0.3	---	< 1	9	320	< 0.4	0.5	15	< 0.15	8	17	12	< 0.05	5.9	27	0.8	< 1	0.4	< 1	1	30	81
	05-Aug-2009	0.6 - 0.9m	**S-CAT-8**	0.48	0.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	1.5 - 1.8m	**S-CAT-9**	0.99	0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	2.1 - 2.4m	**S-CAT-9**	0.5	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Advisian
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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Coarse Surface				**4**	**12**	**(6 - 8)**	**40**	**12**	**2000**	**8**	**22**	**87**	**1.4**	**300**	**91**	**600**	**50**	**40**	**89**	**2.9**	**40**	**1**	**300**	**300**	**130**	**410**
CCME Industrial Coarse Sub-Surface				**4**	**12**	**(6 - 8)**	**40**	**12**	**2000**	**8**	**22**	**87**	**1.4**	**300**	**91**	**600**	**50**	**40**	**89**	**2.9**	**40**	**1**	**300**	**300**	**130**	**410**
S-CAT-7				**0.79**	**0.64**	**7.72**	**1**	**11.6**	**419.5**	**0.83**	**0.9**	**23.55**	**0.15**	**10.3**	**18.6**	**13.6**	**0.08**	**2.23**	**29.6**	**0.91**	**---**	**0.3**	**---**	**1.6**	**41.8**	**113**
S-CAT-8				**0.98**	**7.28**	**7.78**	**1**	**20.2**	**360**	**0.87**	**0.96**	**33.6**	**0.15**	**17.4**	**41.8**	**15.4**	**0.05**	**2.84**	**52.2**	**0.98**	**---**	**0.3**	**---**	**1.28**	**46.8**	**154**
S-CAT-9				**0.9**	**2.84**	**7.75**	**1**	**21**	**194**	**0.61**	**0.1**	**36.4**	**0.15**	**18.7**	**30.1**	**11**	**0.076**	**0.4**	**55.1**	**0.5**	**---**	**0.3**	**---**	**1**	**86.8**	**135.5**
NWR-09-9	05-Aug-2009	0.0 - 0.3m	**S-CAT-7**	0.87	0.6	---	< 1	8	310	< 0.4	0.4	15	< 0.15	8	15	10	< 0.05	2.7	24	< 0.5	< 1	< 0.3	< 1	< 1	25	75
	05-Aug-2009	1.2 - 1.5m	**S-CAT-8**	0.56	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	1.5 - 1.8m	**S-CAT-9**	1.2	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	2.7 - 3.0m	**S-CAT-9**	0.86	0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-10-1	21-Aug-2010	0.0 - 0.5m	**S-CAT-7**	3.3	0.7	---	< 1	14	260	< 0.4	0.5	25	< 0.15	10	23	32	< 0.05	15	45	1.0	< 1	0.9	< 1	2	57	120
	21-Aug-2010	1.5 - 2.0m	**S-CAT-8**	0.37	0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-10-2	21-Aug-2010	0.0 - 0.5m	**S-CAT-7**	2.7	0.4	---	< 1	15	230	< 0.4	0.4	32	< 0.15	12	36	11	0.14	16	50	0.8	< 1	0.5	< 1	2	73	100
	21-Aug-2010	0.5 - 1.0m	**S-CAT-8**	1.5	1.6	---	< 1	14	260	0.5	0.2	39	< 0.15	10	12	11	< 0.05	6.4	37	< 0.5	< 1	< 0.3	< 1	1	77	81
	21-Aug-2010	1.5 - 2.0m	**S-CAT-8**	0.85	1.1	---	< 1	5	230	< 0.4	0.4	15	< 0.15	7	13	10	< 0.05	0.9	22	< 0.5	< 1	< 0.3	< 1	< 1	27	60
NWR-10-3	21-Aug-2010	0.0 - 0.5m	**S-CAT-7**	1.4	0.3	---	1	14	250	< 0.4	0.6	23	< 0.15	11	23	18	0.11	21	51	1.7	< 1	1.3	< 1	3	59	210
RB-13-1	05-Sep-2013	1.2 - 1.5m	**S-CAT-8**	0.36	13	7.25	< 1.0	7.6	220	< 0.40	0.29	19	< 0.15	6.8	13	11	0.081	1.4	24	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	28	69
	05-Sep-2013	2.0 - 2.5m	**S-CAT-9**	0.43	8.4	7.70	1.6	24	84	2.6	1.5	40	< 0.15	19	25	12	0.059	1.8	57	1.6	< 1.0	1.5	1.8	1.8	54	140
(Duplicate)	05-Sep-2013	2.0 - 2.5m	**S-CAT-9**	0.49	8.4	7.65	< 1.0	20	74	0.83	< 0.10	35	< 0.15	17	23	9.9	0.064	< 0.40	54	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	49	130
	05-Sep-2013	3.6 - 3.9m	**S-CAT-9**	0.37	9.6	7.82	< 1.0	27	160	0.86	< 0.10	38	< 0.15	18	24	9.4	0.065	< 0.40	57	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	52	140
RB-13-2	06-Sep-2013	0.3 - 0.6m	**S-CAT-7**	1.6	0.41	7.54	< 1.0	9.2	240	0.51	0.53	24	< 0.15	8.0	20	8.3	0.074	9.1	35	1.4	< 1.0	0.45	< 1.0	2.8	37	87
	06-Sep-2013	1.2 - 1.5m	**S-CAT-8**	0.70	26	7.42	< 1.0	11	200	< 0.40	0.27	23	< 0.15	8.0	16	17	0.063	2.0	28	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	27	77
	06-Sep-2013	2.7 - 3.0m	**S-CAT-8**	0.57	24	7.28	< 1.0	12	280	0.91	0.28	32	< 0.15	15	32	13	0.090	0.85	46	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	44	120
	06-Sep-2013	3.4 - 3.7m	**S-CAT-9**	0.42	< 0.10	8.23	< 1.0	24	370	1.0	< 0.10	40	< 0.15	20	47	14	0.061	< 0.40	61	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	51	160
RB-13-3	06-Sep-2013	0.3 - 0.6m	**S-CAT-7**	1.1	6.2	7.31	< 1.0	10	330	0.54	0.62	18	< 0.15	11	23	9.4	0.051	2.5	33	0.73	< 1.0	< 0.30	< 1.0	< 1.0	30	110
	06-Sep-2013	1.2 - 1.5m	**S-CAT-8**	0.57	< 0.10	7.52	< 1.0	11	160	0.73	< 0.10	30	< 0.15	16	38	9.9	< 0.050	< 0.40	50	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	37	130
	06-Sep-2013	2.2 - 2.5m	**S-CAT-9**	0.58	26	8.62	< 1.0	10	340	0.99	< 0.10	34	< 0.15	18	44	11	< 0.050	< 0.40	56	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	40	150
	06-Sep-2013	3.3 - 3.6m	**S-CAT-9**	0.52	22	8.87	< 1.0	9.3	340	1.1	< 0.10	36	< 0.15	19	46	11	0.091	< 0.40	57	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	44	140
RB-13-4	06-Sep-2013	0.0 - 0.3m	**S-CAT-7**	1.5	13	7.79	< 1.0	11	240	0.46	0.36	24	< 0.15	8.7	18	9.5	0.15	1.7	30	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	28	85
	06-Sep-2013	2.9 - 3.0m	**S-CAT-8**	2.2	27	10.8	< 1.0	6.1	210	< 0.40	0.11	16	< 0.15	4.7	11	3.1	< 0.050	1.4	15	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	20	34
	06-Sep-2013	3.0 - 3.3m	**S-CAT-8**	1.6	42	10.5	< 1.0	11	310	0.91	< 0.10	40	< 0.15	16	38	9.7	0.078	0.88	51	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	41	120
RB-13-5	06-Sep-2013	0.0 - 0.3m	**S-CAT-7**	2.6	0.71	7.53	< 1.0	9.4	330	0.49	0.58	17	< 0.15	9.5	20	8.6	0.065	2.2	29	0.70	< 1.0	< 0.30	< 1.0	< 1.0	28	98
	06-Sep-2013	1.0 - 1.5m	**S-CAT-8**	0.75	4.5	7.37	< 1.0	9.9	270	0.55	0.57	19	< 0.15	11	23	9.5	0.077	2.2	33	0.69	< 1.0	< 0.30	< 1.0	< 1.0	29	100
(Duplicate)	06-Sep-2013	1.0 - 1.5m	**S-CAT-8**	0.82	4.1	7.03	< 1.0	9.4	280	0.51	0.62	16	< 0.15	9.5	21	9.2	0.092	2.1	29	0.75	< 1.0	< 0.30	< 1.0	< 1.0	28	98
	06-Sep-2013	2.2 - 2.5m	**S-CAT-8**	0.53	24	7.74	< 1.0	11	180	0.78	< 0.10	31	< 0.15	16	40	11	< 0.050	0.42	50	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	39	120
RB-13-6	09-Sep-2013	0.0 - 0.5m	**S-CAT-7**	1.5	18	7.17	< 1.0	8.7	280	0.48	0.50	16	< 0.15	7.7	17	7.8	< 0.050	2.3	27	0.65	< 1.0	< 0.30	< 1.0	< 1.0	26	89
	09-Sep-2013	1.0 - 1.6m	**S-CAT-8**	0.92	16	7.12	< 1.0	8.5	270	< 0.40	0.47	14	< 0.15	7.4	17	7.6	< 0.050	2.1	25	0.59	< 1.0	< 0.30	< 1.0	< 1.0	25	85
	09-Sep-2013	1.7 - 2.1m	**S-CAT-8**	0.81	17	7.08	< 1.0	8.7	250	< 0.40	0.44	16	< 0.15	6.8	16	52	0.26	1.4	23	0.51	< 1.0	< 0.30	< 1.0	< 1.0	24	120
RB-MW17-02	12-Jun-2017	1.5 - 2.0m	**S-CAT-8**	0.50	1.0	7.65	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jun-2017	2.6 - 3.0m	**S-CAT-8**	0.36	1.5	7.72	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Coarse Surface				**4**	**12**	**(6 - 8)**	**40**	**12**	**2000**	**8**	**22**	**87**	**1.4**	**300**	**91**	**600**	**50**	**40**	**89**	**2.9**	**40**	**1**	**300**	**300**	**130**	**410**
CCME Industrial Coarse Sub-Surface				**4**	**12**	**(6 - 8)**	**40**	**12**	**2000**	**8**	**22**	**87**	**1.4**	**300**	**91**	**600**	**50**	**40**	**89**	**2.9**	**40**	**1**	**300**	**300**	**130**	**410**
S-CAT-7				**0.79**	**0.64**	**7.72**	**1**	**11.6**	**419.5**	**0.83**	**0.9**	**23.55**	**0.15**	**10.3**	**18.6**	**13.6**	**0.08**	**2.23**	**29.6**	**0.91**	**---**	**0.3**	**---**	**1.6**	**41.8**	**113**
S-CAT-8				**0.98**	**7.28**	**7.78**	**1**	**20.2**	**360**	**0.87**	**0.96**	**33.6**	**0.15**	**17.4**	**41.8**	**15.4**	**0.05**	**2.84**	**52.2**	**0.98**	**---**	**0.3**	**---**	**1.28**	**46.8**	**154**
S-CAT-9				**0.9**	**2.84**	**7.75**	**1**	**21**	**194**	**0.61**	**0.1**	**36.4**	**0.15**	**18.7**	**30.1**	**11**	**0.076**	**0.4**	**55.1**	**0.5**	**---**	**0.3**	**---**	**1**	**86.8**	**135.5**
RB-MW17-05	13-Jun-2017	3.0 - 3.5m	**S-CAT-8**	0.45	0.80	7.82	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	13-Jun-2017	3.0 - 3.5m	**S-CAT-8**	0.54	0.85	7.65	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jun-2017	4.0 - 4.5m	**S-CAT-8**	0.41	3.3	7.82	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates))
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates))

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates))
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates))

6. Background 95th Percentile Statistical Category:
S-CAT-7: Mainland Natural Seeps - Mineral Surface Soil - 95th Percentile Background
S-CAT-8: Mainland Natural Seeps - Mineral Subsurface Soil - 95th Percentile Background
S-CAT-9: Mainland Natural Seeps - Bedrock Siltstone - 95th Percentile Background

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Borehole Name	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Coarse, Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME CSQG, Industrial, Coarse, Subsurface				1	0.1	50	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Coarse, Surface				---	---	---	---	320	260	1700	3300	3300	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Coarse, Subsoil				---	---	---	---	700	1000	3500	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-7				0.009	0.037	0.184	0.074	12.6	215.5	4750	3135	---	0.0165	0.011	0.009	0.013	0.026	---	---	0.009	0.019	0.017	0.012	0.034	0.045	0.043
S-CAT-8				2.655	0.078	2.96	18.55	973	2706.5	4438.5	1691.5	---	0.149	0.02	0.004	0.076	0.005	---	---	0.006	0.034	0.646	0.005	1.386	2.366	0.286
S-CAT-9				0.034	0.02	0.018	0.06	139.5	1185	2780	1035.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB01-01	23-Jun-2001	1.5 - 3.0m	**S-CAT-9**	0.85	0.51	1.9	20	2700	3700	5500	1400	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jun-2001	3.0 - 4.5m	**S-CAT-9**	0.11	0.18	0.28	3.5	530	380	480	110	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB01-02	23-Jun-2001	1.5 - 3.0m	**S-CAT-9**	0.93	0.48	0.62	11	990	1700	2500	600	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB01-03	23-Jun-2001	1.5 - 3.0m	**S-CAT-9**	5.6	8.1	15	73	4300	5600	5500	9300	7400	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB01-04	23-Jun-2001	1.5 - 2.6m	**S-CAT-9**	9.1	9.9	14	63	2800	6300	7800	1900	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jun-2001	3.0 - 4.2m	**S-CAT-9**	1.5	0.42	1.7	9.3	940	1200	1700	470	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB01-05	24-Jun-2001	0.0 - 1.5m	**S-CAT-8**	0.20	< 0.10	< 0.10	3.2	740	1100	1700	540	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2001	1.5 - 2.0m	**S-CAT-9**	6.6	6.5	9.8	39	3000	4000	2500	450	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB01-06	22-Jun-2001	4.5 - 5.0m	**S-CAT-9**	0.44	0.17	< 0.10	1.4	610	660	1400	400	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB01-07	22-Jun-2001	5.0 - 6.0m	**S-CAT-9**	0.39	0.32	0.29	2.5	210	660	1400	370	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB01-08	24-Jun-2001	1.5 - 3.0m	**S-CAT-9**	0.26	0.36	2.6	8.9	420	420	760	3000	1600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2001	4.5 - 6.0m	**S-CAT-9**	0.46	0.40	0.40	11	260	250	320	55	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB01-09	24-Jun-2001	1.0 - 1.5m	**S-CAT-9**	0.24	0.24	< 0.10	0.5	1800	2800	2400	430	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2001	3.0 - 4.5m	**S-CAT-9**	1.1	0.73	2.1	45	1600	2600	3500	910	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB03-01	12-Jul-2003	0.0 - 1.5m	**S-CAT-8**	0.51	0.24	0.20	0.96	98	1100	3600	1500	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2003	1.5 - 3.0m	**S-CAT-8**	0.11	< 0.10	< 0.10	< 0.37	99	2400	8700	3300	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB03-02	12-Jul-2003	0.0 - 1.5m	**S-CAT-8**	0.71	0.32	0.24	0.87	83	430	2900	1600	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2003	1.5 - 3.0m	**S-CAT-8**	0.18	0.15	0.13	2.89	300	2500	11000	4200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB03-03	12-Jul-2003	0.0 - 1.5m	**S-CAT-8**	1.6	0.14	7.4	58	2800	9100	9900	2500	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2003	1.5 - 3.0m	**S-CAT-8**	4.2	< 0.10	0.84	37.3	1200	6300	11000	3600	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB03-04	12-Jul-2003	0.0 - 1.5m	**S-CAT-8**	4.0	0.2	17	57	3700	3900	3900	800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2003	1.5 - 3.0m	**S-CAT-8**	13	< 0.10	21	209	5400	5800	10000	3800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2003	3.0 - 4.5m	**S-CAT-9**	0.67	0.13	0.40	15.6	490	2200	3100	990	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB03-05	12-Jul-2003	0.0 - 1.5m	**S-CAT-8**	5.3	0.21	16	52	5900	6000	5400	1100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2003	1.5 - 3.0m	**S-CAT-9**	0.18	0.18	2.5	70	2100	3900	6600	2600	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2003	3.0 - 4.5m	**S-CAT-9**	1.7	0.70	1.2	44.5	1300	2800	130	900	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB03-06	12-Jul-2003	0.0 - 1.5m	**S-CAT-8**	0.37	< 0.10	0.48	1.33	350	2800	3700	1200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2003	1.5 - 3.0m	**S-CAT-8**	27	110	37	175	6900	10000	8800	2200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jul-2003	3.0 - 4.5m	**S-CAT-9**	1.8	5.3	2.4	12.5	350	1700	2900	730	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR03-01	15-Jul-2003	0.0 - 1.5m	**S-CAT-8**	0.10	< 0.10	< 0.10	< 0.1	23	230	530	130	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2003	1.5 - 3.0m	**S-CAT-8**	0.13	< 0.10	< 0.10	< 0.1	26	< 10	< 10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Borehole Name	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Coarse, Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME CSQG, Industrial, Coarse, Subsurface				1	0.1	50	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Coarse, Surface				---	---	---	---	320	260	1700	3300	3300	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Coarse, Subsoil				---	---	---	---	700	1000	3500	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-7				0.009	0.037	0.184	0.074	12.6	215.5	4750	3135	---	0.0165	0.011	0.009	0.013	0.026	---	---	0.009	0.019	0.017	0.012	0.034	0.045	0.043
S-CAT-8				2.655	0.078	2.96	18.55	973	2706.5	4438.5	1691.5	---	0.149	0.02	0.004	0.076	0.005	---	---	0.006	0.034	0.646	0.005	1.386	2.366	0.286
S-CAT-9				0.034	0.02	0.018	0.06	139.5	1185	2780	1035.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR03-02	14-Jul-2003	0.0 - 1.5m	**S-CAT-8**	0.46	0.37	2.0	14	2000	14000	10000	1100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Jul-2003	1.5 - 3.0m	**S-CAT-8**	0.06	0.13	0.24	4.0	730	3700	3300	510	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR03-03	13-Jul-2003	0.0 - 1.5m	**S-CAT-8**	1.7	0.34	4.8	5.31	130	30	37	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jul-2003	1.5 - 3.0m	**S-CAT-9**	1.6	1.1	9.2	28	550	300	1500	780	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jul-2003	3.0 - 4.5m	**S-CAT-9**	0.18	< 0.10	0.24	6.5	330	1600	3400	1000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-1	21-Aug-2009	0.0 - 0.3m	**S-CAT-7**	0.062	0.036	0.070	1.3	140	320	3500	2100	7100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2009	0.5 - 0.8m	**S-CAT-8**	0.34	< 0.020	0.080	14	770	2000	3500	1500	4900	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2009	2.7 - 3.0m	**S-CAT-8**	2.8	3.2	28	150	3700	14000	3500	58	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2009	3.5 - 3.8m	**S-CAT-8**	0.096	0.1	0.49	2.9	140	810	350	83	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2009	5.8 - 6.1m	**S-CAT-8**	0.024	0.079	0.066	0.40	24	150	250	64	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-2	03-Aug-2009	0.4 - 0.7m	**S-CAT-7**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	70	1200	690	1900	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2009	0.9 - 1.2m	**S-CAT-8**	0.48	0.045	0.17	0.24	240	1100	1100	440	1400	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2009	2.1 - 2.4m	**S-CAT-8**	77	240	48	300	2200	7300	670	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2009	5.7 - 6.0m	**S-CAT-9**	0.76	1.9	1.4	6.8	110	480	510	160	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2009	7.2 - 7.5m	**S-CAT-9**	1.3	1.9	1.5	9.2	120	340	290	62	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-3	04-Aug-2009	0.0 - 0.3m	**S-CAT-7**	0.024	0.059	0.035	0.25	480	840	4800	1500	6400	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2009	0.3 - 0.6m	**S-CAT-8**	2.9	0.24	3.1	10	5100	2100	6900	2800	8900	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2009	1.2 - 1.5m	**S-CAT-8**	43	140	18	150	42000	1300	400	78	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2009	4.8 - 5.1m	**S-CAT-9**	8.5	18	5.5	27	1600	350	210	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2009	7.2 - 7.5m	**S-CAT-9**	3.0	5.9	1.8	10	620	170	160	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-4	03-Aug-2009	0.0 - 0.3m	**S-CAT-7**	< 0.0050	< 0.020	< 0.010	< 0.040	100	18	95	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2009	2.7 - 3.0m	**S-CAT-8**	0.013	< 0.020	< 0.010	< 0.040	29	24	58	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2009	4.5 - 4.8m	**S-CAT-9**	0.012	< 0.020	< 0.010	< 0.040	41	420	780	250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-5	03-Aug-2009	0.0 - 0.6m	**S-CAT-7**	< 0.0050	0.036	0.012	< 0.040	54	1100	4300	1800	6100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2009	1.0 - 1.3m	**S-CAT-8**	< 0.0050	0.032	< 0.010	< 0.040	210	16	120	58	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2009	6.7 - 7.5m	**S-CAT-9**	0.023	0.079	0.068	0.60	110	550	950	280	980	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-6	05-Aug-2009	0.0 - 0.3m	**S-CAT-7**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	57	1400	610	2700	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	0.3 - 0.6m	**S-CAT-8**	0.19	< 0.020	0.042	0.45	1900	4600	5800	1400	6700	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	0.9 - 1.2m	**S-CAT-9**	2.9	0.042	0.19	4.4	2000	2500	3400	1200	6000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	2.7 - 3.0m	**S-CAT-9**	1.6	0.061	0.61	17	860	3600	6900	2500	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-7	05-Aug-2009	0.0 - 0.3m	**S-CAT-7**	0.014	< 0.020	0.018	0.20	32	600	2800	1100	4500	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	1.2 - 1.5m	**S-CAT-8**	0.026	0.036	0.017	0.19	350	3100	3200	690	3500	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	3.0 - 3.3m	**S-CAT-9**	0.12	0.22	0.42	3.7	430	1300	1800	550	2600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-8	05-Aug-2009	0.0 - 0.3m	**S-CAT-7**	0.050	< 0.020	< 0.010	0.22	460	130	1300	700	2600	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Borehole Name	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Coarse, Surface				**1**	**0.1**	**50**	**37**	**---**	**---**	**---**	**---**	**---**	**0.28**	**320**	**32**	**10**	**72**	**5.3**	**10**	**10**	**180**	**0.25**	**10**	**0.013**	**0.046**	**100**
CCME CSQG, Industrial, Coarse, Subsurface				**1**	**0.1**	**50**	**37**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
CCME PHC in Soil, Industrial, Coarse, Surface				**---**	**---**	**---**	**---**	**320**	**260**	**1700**	**3300**	**3300**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
CCME PHC in Soil, Industrial, Coarse, Subsoil				**---**	**---**	**---**	**---**	**700**	**1000**	**3500**	**10000**	**10000**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
S-CAT-7				**0.009**	**0.037**	**0.184**	**0.074**	**12.6**	**215.5**	**4750**	**3135**	**---**	**0.0165**	**0.011**	**0.009**	**0.013**	**0.026**	**---**	**---**	**0.009**	**0.019**	**0.017**	**0.012**	**0.034**	**0.045**	**0.043**
S-CAT-8				**2.655**	**0.078**	**2.96**	**18.55**	**973**	**2706.5**	**4438.5**	**1691.5**	**---**	**0.149**	**0.02**	**0.004**	**0.076**	**0.005**	**---**	**---**	**0.006**	**0.034**	**0.646**	**0.005**	**1.386**	**2.366**	**0.286**
S-CAT-9				**0.034**	**0.02**	**0.018**	**0.06**	**139.5**	**1185**	**2780**	**1035.5**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
	05-Aug-2009	0.6 - 0.9m	**S-CAT-8**	1.6	0.054	0.19	53	4200	26000	18000	4400	22000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	1.5 - 1.8m	**S-CAT-9**	5.1	0.29	15	82	5300	5200	3300	660	2700	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	2.1 - 2.4m	**S-CAT-9**	3.1	0.16	1.4	33	3000	3200	2000	370	1200	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-09-9	05-Aug-2009	0.0 - 0.3m	**S-CAT-7**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	420	210	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	1.2 - 1.5m	**S-CAT-8**	0.047	0.024	0.071	0.11	< 12	260	610	300	610	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	1.5 - 1.8m	**S-CAT-9**	4.0	4.7	14	59	3900	4600	3900	990	3700	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2009	2.7 - 3.0m	**S-CAT-9**	2.9	0.80	9.2	57	2900	4400	4500	1300	5400	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-10-1	21-Aug-2010	0.0 - 0.5m	**S-CAT-7**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	40	170	70	---	0.43	0.099	< 0.0040	0.0063	< 0.0050	< 0.1	< 0.0050	< 0.0050	0.021	1.2	< 0.0050	8.2	2.0	0.063
	21-Aug-2010	1.5 - 2.0m	**S-CAT-8**	21	120	34	140	6100	5700	2300	57	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.1	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.010	0.023	< 0.0050
(Duplicate)	21-Aug-2010	1.5 - 2.0m	**S-CAT-8**	---	---	---	---	---	---	---	---	---	0.48	0.10	< 0.0040	< 0.0050	< 0.0050	< 0.1	< 0.0050	< 0.0050	0.021	1.1	< 0.0050	8.6	2.0	0.061
	21-Aug-2010	3.0 - 3.5m	**S-CAT-8**	100	600	180	880	22000	3300	2300	700	2100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2010	3.9 - 4.4m	**S-CAT-9**	8.0	28	32	140	3100	1200	1300	350	810	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-10-2	21-Aug-2010	0.0 - 0.5m	**S-CAT-7**	0.022	0.036	0.073	0.14	28	1300	1100	92	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.1	< 0.0050	< 0.0050	0.009	0.057	< 0.0050	0.23	0.21	0.039
	21-Aug-2010	0.5 - 1.0m	**S-CAT-8**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	1300	960	54	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2010	1.5 - 2.0m	**S-CAT-8**	0.60	0.55	0.76	44	5100	5200	1900	320	1200	0.43	0.11	< 0.0040	0.012	< 0.0050	< 0.1	< 0.0050	< 0.0050	0.038	1.2	< 0.0050	6.1	1.5	0.063
	21-Aug-2010	4.0 - 4.5m	**S-CAT-9**	0.61	0.37	0.19	6.5	200	1600	2900	970	3500	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2010	5.5 - 6.0m	**S-CAT-9**	0.45	0.42	1.3	14	500	1600	3000	1100	4400	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2010	7.0 - 7.5m	**S-CAT-9**	0.73	0.46	0.31	5.7	300	1100	33	1100	2900	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR-10-3	21-Aug-2010	0.0 - 0.5m	**S-CAT-7**	0.01	< 0.020	0.029	0.19	< 12	87	700	290	980	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.1	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.021	0.089	0.018
	21-Aug-2010	1.5 - 2.0m	**S-CAT-8**	29	29	73	310	10000	3200	1900	360	1200	< 0.19	0.04	< 0.0040	< 0.0050	< 0.0050	< 0.1	< 0.0050	< 0.0050	0.017	0.56	< 0.0050	4.1	1.1	0.061
	21-Aug-2010	3.9 - 4.4m	**S-CAT-9**	0.28	0.091	0.14	7.6	660	2700	3500	1300	4600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-12-1	26-Jul-2012	2.2 - 2.5m	**S-CAT-8**	0.036	0.029	0.12	0.26	< 12	200	240	64	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Jul-2012	2.5 - 3.3m	**S-CAT-8**	0.064	0.21	0.20	2.6	3000	3900	2300	270	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	26-Jul-2012	2.5 - 3.3m	**S-CAT-8**	0.084	0.1	0.18	1.3	1500	4200	2800	410	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-12-2	28-Jul-2012	2.0 - 2.5m	**S-CAT-8**	< 0.51	0.55	0.52	70	4700	3600	2500	300	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Jul-2012	3.6 - 4.1m	**S-CAT-8**	8.0	0.32	1.4	36	5500	4800	2900	480	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-12-3	27-Jul-2012	2.25 - 2.75m	**S-CAT-8**	0.072	0.1	0.13	11	4000	17000	6800	750	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Jul-2012	3.9 - 4.2m	**S-CAT-8**	6.6	**< 0.17**	0.56	31	5400	9200	3900	360	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-12-4	28-Jul-2012	2.0 - 2.5m	**S-CAT-8**	< 0.11	0.25	10	82	7100	5500	2800	160	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	28-Jul-2012	2.0 - 2.5m	**S-CAT-8**	0.056	0.12	1.8	17	3600	4000	1900	73	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Jul-2012	3.5 - 3.7m	**S-CAT-8**	0.74	0.18	5.1	50	4200	2400	810	86	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Advisian
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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Borehole Name	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Coarse, Surface				**1**	**0.1**	**50**	**37**	**---**	**---**	**---**	**---**	**---**	**0.28**	**320**	**32**	**10**	**72**	**5.3**	**10**	**10**	**180**	**0.25**	**10**	**0.013**	**0.046**	**100**
CCME CSQG, Industrial, Coarse, Subsurface				**1**	**0.1**	**50**	**37**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
CCME PHC in Soil, Industrial, Coarse, Surface				**---**	**---**	**---**	**---**	**320**	**260**	**1700**	**3300**	**3300**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
CCME PHC in Soil, Industrial, Coarse, Subsoil				**---**	**---**	**---**	**---**	**700**	**1000**	**3500**	**10000**	**10000**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
S-CAT-7				**0.009**	**0.037**	**0.184**	**0.074**	**12.6**	**215.5**	**4750**	**3135**	**---**	**0.0165**	**0.011**	**0.009**	**0.013**	**0.026**	**---**	**---**	**0.009**	**0.019**	**0.017**	**0.012**	**0.034**	**0.045**	**0.043**
S-CAT-8				**2.655**	**0.078**	**2.96**	**18.55**	**973**	**2706.5**	**4438.5**	**1691.5**	**---**	**0.149**	**0.02**	**0.004**	**0.076**	**0.005**	**---**	**---**	**0.006**	**0.034**	**0.646**	**0.005**	**1.386**	**2.366**	**0.286**
S-CAT-9				**0.034**	**0.02**	**0.018**	**0.06**	**139.5**	**1185**	**2780**	**1035.5**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
RB-12-5	28-Jul-2012	1.75 - 2.0m	**S-CAT-8**	0.71	0.035	2.2	21	3400	9800	4700	280	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Jul-2012	3.5 - 3.8m	**S-CAT-8**	4.9	7.5	2.8	40	6000	7100	3400	200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-12-6	27-Jul-2012	1.1 - 1.5m	**S-CAT-8**	0.019	< 0.020	0.073	0.33	90	13000	7600	1100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Jul-2012	2.5 - 2.8m	**S-CAT-8**	0.020	< 0.020	0.020	0.24	770	5000	2500	390	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Jul-2012	3.5 - 3.8m	**S-CAT-8**	0.91	0.033	0.081	11	2300	2400	1400	310	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	27-Jul-2012	3.5 - 3.8m	**S-CAT-8**	0.41	< 0.020	0.044	2.6	1700	5300	2500	480	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-12-7	27-Jul-2012	3.4 - 3.8m	**S-CAT-8**	0.0085	< 0.020	< 0.010	< 0.040	< 12	< 10	140	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Jul-2012	4.3 - 4.8m	**S-CAT-9**	< 0.0050	< 0.020	0.016	< 0.040	670	3600	7200	2500	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-12-8	27-Jul-2012	2.5 - 2.75m	**S-CAT-8**	0.027	< 0.020	0.013	< 0.040	< 12	< 10	38	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Jul-2012	3.0 - 3.4m	**S-CAT-8**	0.012	< 0.020	< 0.010	< 0.040	< 12	22	53	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-12-9	26-Jul-2012	2.0 - 2.5m	**S-CAT-8**	9.6	< 0.020	0.070	0.43	660	3200	15000	24000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Jul-2012	2.5 - 3.0m	**S-CAT-8**	2.8	< 0.020	0.018	0.10	200	260	2700	4200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-12-10	26-Jul-2012	1.5 - 2.5m	**S-CAT-8**	7.2	9.8	15	88	4500	7000	3600	660	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-12-11	27-Jul-2012	1.8 - 2.2m	**S-CAT-8**	0.29	0.11	0.92	3.1	1400	1800	870	63	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Jul-2012	4.0 - 4.5m	**S-CAT-9**	31	56	22	110	7000	5600	6300	1800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Jul-2012	5.5 - 6.0m	**S-CAT-9**	1.9	0.34	0.31	3.9	940	1500	2300	700	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-12-12	28-Jul-2012	2.0 - 2.5m	**S-CAT-8**	0.044	< 0.020	0.082	0.23	1600	7600	9700	2400	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Jul-2012	3.7 - 4.0m	**S-CAT-8**	0.082	0.041	0.058	1.6	1900	4100	2600	270	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Jul-2012	4.5 - 5.0m	**S-CAT-9**	7.1	< 0.040	0.11	90	4500	5200	6400	1900	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-12-13	28-Jul-2012	2.5 - 3.0m	**S-CAT-8**	0.020	0.036	0.064	0.23	< 12	53	270	35	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Jul-2012	3.8 - 4.3m	**S-CAT-8**	< 0.090	< 0.050	0.094	4.4	4700	3600	2200	280	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Jul-2012	4.5 - 5.0m	**S-CAT-9**	< 0.080	0.025	0.047	2.7	1200	1800	1400	280	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-13-1	05-Sep-2013	1.2 - 1.5m	**S-CAT-8**	6.1	< 0.020	0.23	18	1800	6700	7300	2500	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Sep-2013	2.0 - 2.5m	**S-CAT-9**	4.2	**< 0.11**	0.27	89	3600	2900	2700	850	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	05-Sep-2013	2.0 - 2.5m	**S-CAT-9**	3.1	< 0.080	0.20	52	1800	3800	3600	1100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05-Sep-2013	3.6 - 3.9m	**S-CAT-9**	0.11	0.091	0.091	1.9	100	510	880	310	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-13-2	06-Sep-2013	0.3 - 0.6m	**S-CAT-7**	0.010	< 0.020	< 0.010	< 0.040	< 12	43	120	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06-Sep-2013	1.2 - 1.5m	**S-CAT-8**	0.019	< 0.020	< 0.010	1.5	230	1900	8000	3000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06-Sep-2013	2.7 - 3.0m	**S-CAT-8**	< 0.0050	< 0.020	< 0.010	< 0.040	92	680	1900	620	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06-Sep-2013	3.4 - 3.7m	**S-CAT-9**	< 0.0050	< 0.020	< 0.010	0.086	170	940	2000	730	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-13-3	06-Sep-2013	0.3 - 0.6m	**S-CAT-7**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	24	160	58	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06-Sep-2013	1.2 - 1.5m	**S-CAT-8**	0.24	< 0.020	0.025	0.082	170	760	1300	240	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06-Sep-2013	2.2 - 2.5m	**S-CAT-9**	0.0074	< 0.020	0.018	0.054	100	680	1300	390	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06-Sep-2013	3.3 - 3.6m	**S-CAT-9**	0.074	< 0.020	1.3	1.6	200	800	1300	370	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Advisian
WorleyParsons Group

Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Borehole Name	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Coarse, Surface				**1**	**0.1**	**50**	**37**	**---**	**---**	**---**	**---**	**---**	**0.28**	**320**	**32**	**10**	**72**	**5.3**	**10**	**10**	**180**	**0.25**	**10**	**0.013**	**0.046**	**100**
CCME CSQG, Industrial, Coarse, Subsurface				**1**	**0.1**	**50**	**37**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
CCME PHC in Soil, Industrial, Coarse, Surface				**---**	**---**	**---**	**---**	**320**	**260**	**1700**	**3300**	**3300**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
CCME PHC in Soil, Industrial, Coarse, Subsoil				**---**	**---**	**---**	**---**	**700**	**1000**	**3500**	**10000**	**10000**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
S-CAT-7				**0.009**	**0.037**	**0.184**	**0.074**	**12.6**	**215.5**	**4750**	**3135**	**---**	**0.0165**	**0.011**	**0.009**	**0.013**	**0.026**	**---**	**---**	**0.009**	**0.019**	**0.017**	**0.012**	**0.034**	**0.045**	**0.043**
S-CAT-8				**2.655**	**0.078**	**2.96**	**18.55**	**973**	**2706.5**	**4438.5**	**1691.5**	**---**	**0.149**	**0.02**	**0.004**	**0.076**	**0.005**	**---**	**---**	**0.006**	**0.034**	**0.646**	**0.005**	**1.386**	**2.366**	**0.286**
S-CAT-9				**0.034**	**0.02**	**0.018**	**0.06**	**139.5**	**1185**	**2780**	**1035.5**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
RB-13-4	06-Sep-2013	0.0 - 0.3m	**S-CAT-7**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	28	320	220	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06-Sep-2013	2.9 - 3.0m	**S-CAT-8**	0.69	< 0.020	0.043	4.5	510	870	1500	620	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06-Sep-2013	3.0 - 3.3m	**S-CAT-8**	0.44	< 0.020	0.073	1.4	110	360	590	200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-13-5	06-Sep-2013	0.0 - 0.3m	**S-CAT-7**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	14	71	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06-Sep-2013	1.0 - 1.5m	**S-CAT-8**	0.31	< 0.020	0.014	< 0.040	63	490	1700	540	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	06-Sep-2013	1.0 - 1.5m	**S-CAT-8**	0.35	< 0.020	< 0.010	< 0.040	54	270	980	310	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06-Sep-2013	2.2 - 2.5m	**S-CAT-8**	0.45	< 0.020	0.027	0.19	19	64	89	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-13-6	09-Sep-2013	0.0 - 0.5m	**S-CAT-7**	< 0.0050	0.036	< 0.010	< 0.040	< 12	18	92	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Sep-2013	1.0 - 1.6m	**S-CAT-8**	3.4	< 0.020	0.030	0.37	< 12	110	600	210	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Sep-2013	1.7 - 2.1m	**S-CAT-8**	2.1	0.031	0.11	16	840	6700	10000	3700	16000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-01	12-Jun-2017	0.0 - 0.4m	**S-CAT-7**	0.069	< 0.020	0.016	0.066	12	97	1600	800	2900	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jun-2017	1.0 - 1.5m	**S-CAT-8**	33	0.88	6.3	320	47000	10000	8100	2300	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jun-2017	1.5 - 2.0m	**S-CAT-8**	1.7	0.034	0.11	1.5	280	1400	2600	920	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	12-Jun-2017	1.5 - 2.0m	**S-CAT-8**	2.5	0.029	0.17	2.4	440	2700	3400	1100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-02	12-Jun-2017	0.5 - 1.0m	**S-CAT-8**	0.16	0.031	0.055	0.28	170	1800	3500	1200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12-Jun-2017	1.5 - 2.0m	**S-CAT-8**	3.3	0.2	5.6	17	1600	3400	2000	390	---	0.090	0.13	< 0.0040	0.021	< 0.0050	0.011	< 0.0050	< 0.0050	0.0060	0.46	< 0.0050	2.4	0.96	0.043
	12-Jun-2017	2.6 - 3.0m	**S-CAT-8**	6.7	0.2	5.9	74	4600	4800	4100	1100	---	0.11	0.18	0.050	0.041	< 0.0050	0.017	< 0.0050	< 0.0050	0.0094	0.68	0.020	3.4	1.4	0.065
	12-Jun-2017	3.5 - 3.75m	**S-CAT-8**	1.4	0.053	0.24	5.2	870	1600	2300	720	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-03	13-Jun-2017	0.0 - 0.5m	**S-CAT-7**	0.20	0.039	0.046	0.23	32	340	1800	730	2800	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jun-2017	1.5 - 1.8m	**S-CAT-8**	22	85	36	180	5600	9600	4300	710	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jun-2017	4.0 - 4.5m	**S-CAT-8**	3.4	0.48	1.2	11	1200	2800	3300	940	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-04	13-Jun-2017	1.0 - 1.5m	**S-CAT-8**	0.89	0.12	0.033	0.18	39	260	1500	640	2500	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jun-2017	1.5 - 2.0m	**S-CAT-8**	12	54	28	130	6100	6800	3400	560	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jun-2017	3.5 - 4.0m	**S-CAT-8**	7.4	28	12	57	6100	2500	2300	570	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-05	13-Jun-2017	3.0 - 3.5m	**S-CAT-8**	9.2	19	7.1	33	1900	3600	4500	1300	---	0.18	0.13	< 0.0040	0.040	< 0.0050	0.016	< 0.0050	< 0.0050	0.014	0.51	0.0093	1.7	1.5	0.075
(Duplicate)	13-Jun-2017	3.0 - 3.5m	**S-CAT-8**	7.8	18	6.3	31	1200	3200	4200	1300	---	0.16	0.12	< 0.0040	0.035	< 0.0050	0.015	< 0.0050	< 0.0050	0.011	0.45	0.013	1.2	1.3	0.076
	13-Jun-2017	4.0 - 4.5m	**S-CAT-8**	0.51	0.29	0.040	0.18	81	1000	2000	680	3000	0.059	0.023	< 0.0040	0.027	< 0.0050	0.013	< 0.0050	< 0.0050	0.0073	0.11	0.011	0.077	0.67	0.048
RB-MW17-06	13-Jun-2017	2.5 - 3.0m	**S-CAT-8**	16	35	13	59	2300	3800	4800	1400	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jun-2017	3.5 - 4.0m	**S-CAT-8**	14	32	10	47	1800	2700	3900	1300	7300	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-07	13-Jun-2017	2.5 - 3.0m	**S-CAT-8**	1.2	1.2	2.9	12	1600	3800	7000	2400	13000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jun-2017	4.5 - 5.0m	**S-CAT-8**	0.75	0.73	0.70	3.2	340	980	1700	580	2600	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Borehole Name	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)													
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Coarse, Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME CSQG, Industrial, Coarse, Subsurface				1	0.1	50	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Coarse, Surface				---	---	---	---	320	260	1700	3300	3300	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Coarse, Subsoil				---	---	---	---	700	1000	3500	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-7				0.009	0.037	0.184	0.074	12.6	215.5	4750	3135	---	0.0165	0.011	0.009	0.013	0.026	---	---	0.009	0.019	0.017	0.012	0.034	0.045	0.043
S-CAT-8				2.655	0.078	2.96	18.55	973	2706.5	4438.5	1691.5	---	0.149	0.02	0.004	0.076	0.005	---	---	0.006	0.034	0.646	0.005	1.386	2.366	0.286
S-CAT-9				0.034	0.02	0.018	0.06	139.5	1185	2780	1035.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates))
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates))
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates))
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Subsurface Soils, excluding protection of potable groundwater, 2001 and updates))

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates))
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates))
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates))
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Subsurface Soils, excluding protection of potable groundwater, 2001 and updates))

6. Background 95th Percentile Statistical Category:
S-CAT-7: Mainland Natural Seeps - Mineral Surface Soil - 95th Percentile Background
S-CAT-8: Mainland Natural Seeps - Mineral Subsurface Soil - 95th Percentile Background
S-CAT-9: Mainland Natural Seeps - Bedrock Siltstone - 95th Percentile Background

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals															
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
NWR 93-10-6	07-Sep-1997	**W-CAT-4**	65.0	7.7	< 0.02	< 0.005	26	0.04	0.0014	0.053	**< 0.002**	0.005	0.003	0.547	< 0.001	0.00007	0.009	0.014	0.0082	**< 0.01**	**< 0.02**	---	0.005
	09-Sep-1998		17.8	7.7	0.04	0.311	22	< 0.02	**< 0.04**	0.044	**< 0.002**	0.002	0.008	0.21	< 0.02	---	0.006	0.008	**< 0.03**	**< 0.01**	**< 0.02**	---	< 0.002
	27-Aug-2001		22.5	7.5	< 0.02	< 0.005	8	< 0.02	**< 0.05**	0.036	**< 0.002**	< 0.005	< 0.005	1.80	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	21-Aug-2002		19.5	7.7	< 0.02	0.005	17	0.037	0.004	0.040	< 0.00010	< 0.001	0.0037	11.4	0.0009	< 0.00005	0.005	0.012	0.002	< 0.0001	< 0.0001	0.00318	0.146
	26-Aug-2003		10	6.3	< 0.2	< 0.06	---	---	< 0.005	< 0.050	**< 0.002**	< 0.007	< 0.009	8.587	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.006
	31-May-2015		6.9	7.35	< 0.010	< 0.010	< 10	0.039	0.033	0.029	< 0.000020	0.0011	0.00094	63	0.00021	---	0.022	0.0088	0.00086	< 0.00010	< 0.00020	0.0065	0.0039
	15-Aug-2016		2.2	7.23	< 0.010	< 0.010	26	0.026	0.030	0.047	0.000034	< 0.0010	0.0011	24	0.00034	---	0.021	0.0059	0.0013	< 0.00010	< 0.00020	0.0033	0.0095
NWR 93-12-7	07-Sep-1997	**W-CAT-4**	---	---	---	---	38	0.09	0.0230	0.062	0.002	0.004	0.014	1.19	0.004	0.00025	0.028	0.015	< 0.0005	**< 0.01**	**< 0.02**	---	0.027
	09-Sep-1998		14.8	7.7	1.26	0.008	30	< 0.02	**< 0.04**	0.045	**< 0.002**	< 0.002	0.002	0.086	< 0.02	---	0.007	0.011	**< 0.03**	**< 0.01**	**< 0.02**	---	0.006
	15-Sep-1999		26	8.0	< 0.02	< 0.005	15	0.03	0.013	0.203	< 0.0001	0.003	0.004	0.174	0.001	< 0.00005	0.014	0.013	0.002	< 0.0001	0.02	---	0.007
	17-Sep-2000		32	7.8	0.03	< 0.005	23	< 0.02	0.001	0.207	< 0.0001	< 0.005	< 0.005	0.022	0.001	< 0.00005	0.031	0.018	0.001	< 0.0001	**< 0.03**	---	0.007
	27-Aug-2001		33.5	7.9	< 0.02	< 0.005	3	0.05	**< 0.05**	0.203	**< 0.002**	< 0.005	< 0.005	0.207	< 0.03	---	< 0.005	0.010	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
NWR 93-9-7	07-Sep-1997	**W-CAT-4**	8.8	8.1	3.80	0.105	---	0.04	< 0.0005	0.373	**< 0.002**	0.003	0.013	0.047	< 0.001	< 0.00005	< 0.004	0.009	0.0007	**< 0.01**	**< 0.02**	---	0.004
	10-Sep-1998		12.2	7.4	5	0.18	14	< 0.02	**< 0.04**	0.349	**< 0.002**	0.002	0.012	< 0.003	< 0.02	---	< 0.004	0.009	**< 0.03**	**< 0.01**	**< 0.02**	---	< 0.002
	15-Sep-1999		9.1	8.0	2.69	0.275	10	< 0.02	0.027	0.312	< 0.0001	0.002	0.004	0.031	< 0.001	< 0.00005	< 0.004	0.008	0.006	< 0.0001	**< 0.02**	---	< 0.002
	17-Sep-2000		8.4	7.6	6.66	0.336	17	< 0.02	0.001	0.274	< 0.0001	< 0.005	< 0.005	0.008	< 0.001	< 0.00005	< 0.005	0.008	0.002	< 0.0001	**< 0.03**	---	< 0.005
	27-Aug-2001		8.1	7.7	0.94	0.063	4	< 0.02	**< 0.05**	0.368	**< 0.002**	< 0.005	0.006	< 0.005	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	21-Aug-2002		7.2	7.7	0.51	0.027	12	0.002	< 0.001	0.194	< 0.00010	< 0.001	0.0120	0.080	0.0005	0.00106	< 0.005	< 0.008	0.001	< 0.0001	< 0.0001	0.0212	0.007
	26-Aug-2003		4	6.8	< 0.2	< 0.06	---	---	< 0.005	0.152	**< 0.002**	< 0.007	< 0.009	0.057	**< 0.10**	< 0.00005	---	---	0.003	---	---	**< 1.0**	< 0.005
NWR 98-15-6	10-Sep-1998	**W-CAT-4**	1220	7.6	17.3	6.54	67	< 0.02	0.14	0.095	**< 0.002**	0.004	0.002	0.015	< 0.02	---	0.007	0.012	**< 0.03**	**< 0.01**	**< 0.02**	---	0.005
NWR 98-13-21	10-Sep-1998	**W-CAT-3**	488	8.1	< 0.02	0.009	13	< 0.02	0.04	0.51	< 0.002	< 0.002	< 0.001	0.008	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	< 0.002
	17-Sep-2000		420	7.9	< 0.02	< 0.005	19	< 0.02	< 0.001	0.502	< 0.0001	< 0.005	< 0.005	0.101	< 0.001	< 0.00005	< 0.005	< 0.008	0.001	< 0.0001	< 0.03	---	< 0.005
	27-Aug-2001		379	8.0	< 0.02	< 0.005	3	0.08	< 0.05	0.557	< 0.002	< 0.005	< 0.005	0.242	< 0.03	---	< 0.005	0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	26-Aug-2003		342	7.0	< 0.2	< 0.06	---	---	< 0.005	0.569	< 0.002	< 0.007	< 0.009	0.106	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.012
	23-Aug-2004		254	---	< 0.2	< 0.06	---	< 0.010	0.015	0.691	< 0.000034	< 0.005	0.010	0.759	< 0.002	< 0.00005	0.006	< 0.008	0.002	< 0.0002	< 0.0016	< 0.002	< 0.005
	25-Aug-2005		195	---	< 0.2	< 0.06	18	< 0.005	0.01	0.57	0.00001	< 0.007	0.003	0.067	< 0.001	< 0.00005	< 0.006	0.020	0.002	< 0.0001	< 0.0008	< 0.001	< 0.005
	20-Aug-2006		169	---	< 0.2	< 0.06	6	< 0.005	0.013	0.61	< 0.00001	< 0.007	< 0.002	0.671	< 0.001	< 0.00005	< 0.006	0.041	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	21-Aug-2007		146	---	< 0.2	< 0.06	3	0.019	0.014	0.54	< 0.00001	0.007	0.0075	0.14	0.0019	---	0.0005	0.0087	0.005	< 0.0001	< 0.0002	0.0001	0.102
	19-Aug-2008		140	---	< 0.003	< 0.003	13	< 0.001	0.004	0.57	0.00003	< 0.001	0.0085	0.28	0.0003	---	0.0018	0.0019	< 0.001	< 0.0001	0.0004	0.0003	0.027
	17-Aug-2009		110	7.65	0.003	< 0.003	5	< 0.001	0.0054	0.53	< 0.000005	< 0.001	0.0030	0.27	< 0.0002	---	< 0.0002	0.0019	0.0004	< 0.0001	< 0.0002	< 0.0001	0.008
(Duplicate)	17-Aug-2009		---	---	---	---	6	0.020	0.010	0.52	< 0.000005	< 0.001	0.0029	0.82	< 0.0002	---	0.0008	0.0026	0.0003	< 0.0001	< 0.0002	0.0002	0.009
	20-Aug-2010		78	7.05	< 0.003	< 0.003	< 2	0.003	0.010	0.47	< 0.00003	< 0.001	0.0018	1.3	< 0.0002	---	< 0.0002	0.0018	0.0003	< 0.0001	< 0.0002	< 0.0001	0.008
(Duplicate)	20-Aug-2010		---	---	---	---	3	0.002	0.010	0.47	< 0.000005	< 0.001	0.0015	1.2	< 0.0002	---	0.0003	0.0013	0.0007	< 0.0001	< 0.0002	< 0.0001	0.012

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
NWR 98-13-21 (cont'd)	17-Aug-2011		110	---	0.09	< 0.03	< 2	0.004	0.0056	0.44	< 0.000005	< 0.001	0.0008	0.57	< 0.0002	---	< 0.0002	0.0012	0.0011	< 0.0001	< 0.0002	< 0.0001	0.006
(Duplicate)	17-Aug-2011		---	---	---	---	< 2	0.004	0.0053	0.44	0.000006	< 0.001	0.0010	0.57	< 0.0002	---	< 0.0002	0.0014	0.0010	< 0.0001	< 0.0002	< 0.0001	0.010
	19-Aug-2012		97	---	0.0056	0.0045	3.5	0.0052	0.0066	0.42	< 0.000025	< 0.0010	0.00024	0.55	< 0.00020	---	< 0.00020	0.00064	0.00085	< 0.00010	< 0.00020	< 0.00010	0.0068
(Duplicate)	19-Aug-2012		---	---	---	---	3.1	0.0039	0.0062	0.42	< 0.000025	< 0.0010	0.00041	0.55	< 0.00020	---	< 0.00020	0.00064	0.0010	< 0.00010	< 0.00020	< 0.00010	0.0078
	21-Aug-2013		77	---	< 0.0030	< 0.0030	18	0.0053	0.0035	0.57	0.000030	< 0.0010	0.00079	0.34	< 0.00020	---	< 0.00020	< 0.00050	0.0024	< 0.00010	< 0.00020	< 0.00010	0.0034
(Duplicate)	21-Aug-2013		76	---	0.0090	< 0.0030	18	0.0048	0.0039	0.57	< 0.000025	< 0.0010	0.00083	0.34	< 0.00020	---	< 0.00020	< 0.00050	0.0019	< 0.00010	< 0.00020	< 0.00010	< 0.0030
	01-Aug-2014		210	---	0.028	< 0.010	13	0.011	0.0019	0.63	< 0.000020	< 0.0010	0.00054	0.32	< 0.00020	---	< 0.00020	< 0.00050	0.0038	< 0.00010	< 0.00020	< 0.00010	0.0034
(Duplicate)	01-Aug-2014		210	---	< 0.010	< 0.010	12	0.0077	0.0020	0.64	< 0.000020	< 0.0010	0.00059	0.32	< 0.00020	---	< 0.00020	< 0.00050	0.0052	< 0.00010	< 0.00020	< 0.00010	< 0.0030
	31-May-2015		97	7.52	< 0.010	< 0.010	4.4	0.0054	0.0012	0.43	< 0.000020	< 0.0010	0.0014	0.18	< 0.00020	---	< 0.00020	0.0013	0.0020	< 0.00010	< 0.00020	< 0.00010	0.0037
	09-Aug-2015		180	---	< 0.010	< 0.010	2.2	0.0042	0.0012	0.51	< 0.000020	< 0.0010	0.0035	0.14	< 0.00020	---	< 0.00020	< 0.00050	0.022	< 0.00010	< 0.00020	< 0.00010	0.0053
	25-Nov-2015		140	7.47	< 0.010	< 0.010	< 4.0	0.0075	0.0016	0.62	< 0.000020	< 0.0010	0.00062	0.13	< 0.00020	---	< 0.00020	< 0.00050	0.011	< 0.00010	< 0.00020	< 0.00010	< 0.0030
	12-Mar-2016		150	7.66	< 0.010	< 0.010	2.2	0.013	0.0015	0.61	< 0.000020	< 0.0010	< 0.00020	0.23	< 0.00020	---	< 0.00020	< 0.00050	0.0056	< 0.00010	< 0.00020	< 0.00010	0.0072
	05-Aug-2016		130	---	< 0.010	< 0.010	---	0.0061	0.0017	0.58	< 0.000020	< 0.0010	0.00058	0.12	< 0.00020	---	< 0.00020	< 0.00050	0.020	< 0.00010	< 0.00020	< 0.00010	0.0033
(Duplicate)	05-Aug-2016		130	---	< 0.010	< 0.010	---	0.0065	0.0016	0.58	< 0.000020	< 0.0010	0.00063	0.11	< 0.00020	---	< 0.00020	0.00063	0.018	< 0.00010	< 0.00020	< 0.00010	0.0059
	02-Nov-2016		140	7.67	< 0.010	< 0.010	4.5	0.0062	0.0025	0.46	< 0.000020	< 0.0010	< 0.00020	0.071	< 0.00020	---	0.0011	< 0.00050	0.00033	< 0.00010	< 0.00020	0.00075	< 0.0030
	15-Aug-2017		140	---	< 0.010	< 0.010	---	0.0051	0.0013	0.50	< 0.000020	< 0.0010	0.00057	0.15	< 0.00020	---	< 0.00020	0.00052	0.0072	< 0.00010	< 0.00020	< 0.00010	< 0.0030
	20-Jul-2018		120	---	< 0.010	< 0.010	---	0.0035	0.00095	0.43	< 0.000020	< 0.0010	0.00063	0.10	< 0.00020	---	< 0.00020	0.00059	0.0049	< 0.00010	< 0.00020	< 0.00010	0.0031
(Duplicate)	20-Jul-2018		110	---	< 0.010	< 0.010	---	0.0054	0.0012	0.44	< 0.000020	< 0.0010	0.00052	0.13	< 0.00020	---	< 0.00020	0.00053	0.0070	< 0.00010	< 0.00020	< 0.00010	< 0.0030
NWR 98-20-3	09-Sep-1998	**W-CAT-4**	519	7.2	< 0.02	< 0.005	128	0.03	0.04	0.733	**< 0.002**	< 0.002	< 0.001	0.387	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	**< 0.02**	---	< 0.002
	27-Sep-2000		440	7.3	< 0.02	0.005	---	< 0.02	0.07	0.746	**< 0.002**	< 0.005	0.014	0.048	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	**< 0.03**	---	0.075
	26-Aug-2001		369	7.8	< 0.02	0.005	108	< 0.02	**< 0.05**	0.698	**< 0.002**	< 0.005	< 0.005	0.740	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	26-Aug-2003		412	7.7	< 0.2	< 0.06	---	---	< 0.005	0.568	**< 0.002**	< 0.007	< 0.009	0.150	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
NWR 98-23-21	09-Sep-1998	**W-CAT-3**	470	8.6	0.2	0.069	18	0.08	0.007	1.24	< 0.0001	< 0.002	0.002	0.038	< 0.001	< 0.00005	< 0.004	< 0.008	< 0.001	< 0.0001	< 0.02	---	< 0.002
	15-Sep-1999		450	8.5	< 0.02	< 0.005	40	0.02	0.032	1.06	< 0.0001	< 0.002	< 0.001	1.21	< 0.001	< 0.00005	0.009	< 0.008	0.001	< 0.0001	< 0.02	---	< 0.002
	27-Sep-2000		130	7.4	< 0.02	< 0.005	---	< 0.02	0.10	0.385	< 0.002	< 0.005	0.006	0.229	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	0.015
	26-Aug-2001		686	8.4	< 0.02	< 0.005	48	0.04	< 0.05	1.18	< 0.002	< 0.005	< 0.005	0.780	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	26-Aug-2003		882	7.5	< 0.2	< 0.06	---	---	0.014	1.267	0.003	< 0.007	< 0.009	0.213	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
	20-Aug-2012		77	---	< 0.0060	< 0.0060	60	0.026	0.19	0.42	0.000026	0.0015	0.0010	43	0.0033	---	0.00068	0.0031	0.00074	< 0.00010	< 0.00020	0.00026	0.018
NWR 99-19-3	15-Sep-1999	**W-CAT-4**	280	8.2	< 0.02	< 0.005	324	0.03	0.013	0.521	< 0.0001	0.004	< 0.001	0.566	< 0.001	< 0.00005	0.007	< 0.008	0.002	< 0.0001	**< 0.02**	---	< 0.002
	17-Sep-2000		380	7.3	0.02	< 0.005	324	< 0.02	0.002	0.693	< 0.0001	< 0.005	< 0.005	0.128	< 0.001	< 0.00005	< 0.005	< 0.008	0.002	< 0.0001	**< 0.03**	---	< 0.005
	26-Aug-2001		387	8.0	< 0.02	< 0.005	157	< 0.02	**< 0.05**	0.643	**< 0.002**	< 0.005	< 0.005	2.03	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
(Duplicate)	26-Aug-2001		378	7.9	< 0.02	< 0.005	186	< 0.02	**< 0.05**	0.656	**< 0.002**	< 0.005	< 0.005	2.05	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	26-Aug-2003		390	7.2	< 0.2	< 0.06	---	---	< 0.005	0.726	**< 0.002**	< 0.007	< 0.009	3.408	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
NWR 99-21-3	15-Sep-1999	**W-CAT-4**	190	8.2	< 0.02	< 0.005	14	< 0.02	0.001	0.457	0.0001	< 0.002	< 0.001	10.0	< 0.001	< 0.00005	0.007	0.018	0.002	< 0.0001	**< 0.02**	---	0.011
	17-Sep-2000		150	7.1	0.02	< 0.005	26	< 0.02	0.003	0.484	< 0.0001	< 0.005	< 0.005	0.405	0.001	< 0.00005	< 0.005	< 0.008	0.001	< 0.0001	**< 0.03**	---	< 0.005
	26-Aug-2003		213	6.9	< 0.2	< 0.06	---	---	0.010	0.709	**< 0.002**	< 0.007	< 0.009	2.795	**< 0.10**	< 0.00005	---	---	0.001	---	---	**< 1.0**	0.012

Advisian
WorleyParsons Group

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals															
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
NWR 99-22-4	27-Sep-2000	**W-CAT-4**	24	7.1	< 0.02	< 0.020	---	< 0.02	**< 0.05**	0.022	**< 0.002**	< 0.005	< 0.005	0.348	< 0.03	---	< 0.005	0.011	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	26-Aug-2001		16.9	7.0	< 0.02	0.008	382	< 0.02	**< 0.05**	0.029	**< 0.002**	< 0.005	< 0.005	0.428	0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	21-Aug-2002		25.6	6.8	< 0.02	< 0.005	42	0.055	0.027	0.038	< 0.00001	< 0.001	0.0016	103	0.0136	< 0.00005	< 0.005	< 0.008	0.002	< 0.0001	< 0.0001	0.00014	0.189
	26-Aug-2003		25	6.7	< 0.2	< 0.06	---	---	0.015	< 0.050	**< 0.002**	< 0.007	< 0.009	74.24	**< 0.10**	< 0.00005	---	---	0.002	---	---	**< 1.0**	0.006
	23-Aug-2004		22	---	< 0.2	0.07	---	< 0.005	< 0.005	0.043	< 0.000017	< 0.005	0.016	87.08	0.002	< 0.00005	< 0.005	0.035	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	25-Aug-2005		21.8	---	< 0.2	< 0.06	89	0.0148	0.0238	0.07	0.00003	< 0.007	0.007	57.0	0.0156	< 0.00005	< 0.006	0.053	0.003	0.0001	< 0.0008	0.009	0.018
	20-Aug-2006		17	---	< 0.2	< 0.06	86	0.009	0.031	0.09	0.00007	< 0.007	0.004	70.2	0.006	< 0.00005	< 0.006	0.031	< 0.001	< 0.0001	< 0.0008	0.004	0.010
NWR 00-25-36	21-Aug-2002	**W-CAT-3**	600	7.5	< 0.02	< 0.005	30	0.020	0.006	1.49	< 0.00010	< 0.001	0.0247	0.316	0.0012	0.00062	< 0.005	< 0.008	0.002	< 0.0001	< 0.0001	0.00052	0.019
	26-Aug-2003		788	9.0	< 0.2	< 0.06	---	---	0.013	1.229	< 0.002	< 0.007	< 0.009	0.027	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
NWR 01-29-7	26-Aug-2001	**W-CAT-4**	36.8	7.7	< 0.02	< 0.005	179	0.05	**< 0.05**	0.048	**< 0.002**	< 0.005	< 0.005	0.357	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	21-Aug-2002		27.8	6.8	< 0.02	0.007	138	0.384	0.218	0.051	< 0.00001	< 0.001	0.0020	65.7	0.0030	0.00048	< 0.005	< 0.008	0.001	< 0.0001	< 0.0001	0.00072	0.023
	26-Aug-2003		23	7.3	< 0.2	< 0.06	---	---	0.126	< 0.050	**< 0.002**	< 0.007	< 0.009	70.96	**< 0.10**	< 0.00005	---	---	0.001	---	---	**< 1.0**	0.006
NWR 01-30-4	26-Aug-2001	**W-CAT-4**	58.8	7.1	< 0.02	0.005	---	< 0.02	0.11	0.256	**< 0.002**	< 0.005	< 0.005	0.205	0.04	---	< 0.005	0.009	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	22-Aug-2002		50.9	7.3	0.02	0.010	41	0.032	0.352	0.283	< 0.00010	0.003	< 0.0002	91.5	0.0116	< 0.00005	< 0.005	< 0.008	0.002	< 0.0001	< 0.0001	0.00189	0.010
	26-Aug-2003		65	7.0	< 0.2	< 0.06	---	---	0.255	0.310	**< 0.002**	< 0.007	< 0.009	46.89	**< 0.10**	< 0.00005	---	---	0.001	---	---	**< 1.0**	0.006
	25-Aug-2005		32.2	---	< 0.2	< 0.06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2006		21	6.9	< 0.2	< 0.06	137	0.019	0.054	0.42	< 0.00001	< 0.007	0.014	43.9	0.022	< 0.00005	< 0.006	0.050	< 0.001	< 0.0001	< 0.0008	0.005	0.010
NWR 01-31-4	26-Aug-2001	**W-CAT-4**	38.7	7.8	< 0.02	< 0.005	3	< 0.02	**< 0.05**	0.455	**< 0.002**	< 0.005	< 0.005	0.383	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	21-Aug-2002		68.7	7.1	< 0.02	< 0.005	9	0.015	0.006	0.526	< 0.00001	< 0.001	0.0030	0.560	0.0021	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.0001	0.00014	0.183
	26-Aug-2003		143	6.7	< 0.2	< 0.06	---	---	0.010	0.560	**< 0.002**	< 0.007	< 0.009	3.804	**< 0.10**	< 0.00005	---	---	0.002	---	---	**< 1.0**	0.006
	23-Aug-2004		60	7.2	< 0.2	< 0.06	---	< 0.010	0.012	0.583	< 0.000034	< 0.005	0.007	2.423	0.004	< 0.00005	< 0.005	< 0.008	**< 0.002**	< 0.0002	**< 0.0016**	< 0.002	< 0.005
	25-Aug-2005		99.2	7.7	< 0.2	< 0.06	22	0.006	0.0109	0.61	0.00002	< 0.007	0.006	2.66	0.004	< 0.00005	< 0.006	< 0.008	0.002	< 0.0001	< 0.0008	0.003	0.124
	20-Aug-2006		70	7.4	< 0.2	< 0.06	15	< 0.005	< 0.005	0.66	< 0.00001	< 0.007	0.003	0.856	0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	0.002	< 0.005
NWR 01-32-4	26-Aug-2001	**W-CAT-4**	51.9	7.2	< 0.02	< 0.005	13	0.13	**< 0.05**	0.489	**< 0.002**	< 0.005	< 0.005	2.65	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	22-Aug-2002		80.8	7.7	< 0.02	< 0.005	10	0.106	0.029	0.468	< 0.00001	< 0.001	0.0055	4.57	0.0020	< 0.00005	< 0.005	< 0.008	0.001	< 0.0001	< 0.0001	0.00007	0.008
	26-Aug-2003		65	6.6	< 0.2	< 0.06	---	---	0.134	0.460	**< 0.002**	< 0.007	< 0.009	3.252	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.006
	20-Aug-2006		34	7.5	< 0.2	< 0.06	62	< 0.005	0.022	0.44	< 0.00001	< 0.007	< 0.002	2.59	0.002	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	0.001	< 0.005
NWR 01-33-4	26-Aug-2001	**W-CAT-4**	59.0	7.3	< 0.02	< 0.005	38	0.11	0.06	0.390	**< 0.002**	< 0.005	< 0.005	0.821	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	22-Aug-2002		42.7	7.7	< 0.02	< 0.005	18	0.381	0.037	0.138	< 0.00001	< 0.001	0.0024	30.5	0.0115	< 0.00005	< 0.005	0.013	< 0.001	< 0.0001	< 0.0001	0.00390	0.032
	26-Aug-2003		74	7.2	< 0.2	< 0.06	---	---	0.044	0.196	**< 0.002**	< 0.007	< 0.009	2.563	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.007
	23-Aug-2004		53	7.1	< 0.2	< 0.06	---	< 0.005	< 0.005	0.337	0.000103	< 0.005	0.003	5.421	0.022	< 0.00005	< 0.005	0.037	0.024	< 0.0001	< 0.0008	0.006	< 0.005
	20-Aug-2006		37	7.3	< 0.2	< 0.06	53	0.054	0.031	0.31	< 0.00001	< 0.007	< 0.002	12.1	0.006	< 0.00005	< 0.006	0.014	< 0.001	< 0.0001	< 0.0008	0.001	< 0.005

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals															
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
NWR 01-34-2	26-Aug-2001	**W-CAT-4**	12.6	7.3	< 0.02	0.005	36	0.05	**< 0.05**	0.029	**< 0.002**	< 0.005	< 0.005	0.386	< 0.03	---	0.006	< 0.008	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	22-Aug-2002		10.2	6.9	< 0.02	< 0.005	19	0.033	0.011	0.026	< 0.00001	< 0.001	0.0009	34.7	0.0010	< 0.00005	< 0.005	0.026	0.001	< 0.0001	< 0.0001	0.00651	0.012
	26-Aug-2003		22	6.7	< 0.2	< 0.06	---	---	0.015	< 0.050	**< 0.002**	< 0.007	< 0.009	63.57	**< 0.10**	< 0.00005	---	---	0.004	---	---	**< 1.0**	0.005
	23-Aug-2004		28	7.0	< 0.2	< 0.06	---	0.010	< 0.005	0.032	< 0.000017	< 0.005	0.003	49.67	0.002	< 0.00005	0.012	0.034	< 0.001	< 0.0001	< 0.0008	0.022	< 0.005
	25-Aug-2005		24.7	7.3	< 0.2	< 0.06	56	0.0109	0.0159	0.05	0.00009	< 0.007	0.0146	12.3	0.0288	< 0.00005	< 0.006	0.028	0.002	< 0.0001	< 0.0008	0.004	0.136
	20-Aug-2006		25	7.2	< 0.2	< 0.06	28	< 0.005	0.015	< 0.05	0.00013	< 0.007	0.005	31.6	0.003	< 0.00005	< 0.006	0.031	< 0.001	< 0.0001	< 0.0008	0.004	0.016
(Duplicate)	20-Aug-2006		---	---	---	---	23	---	0.014	< 0.05	0.00034	< 0.007	0.005	< 0.006	0.003	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	---	0.005	< 0.005
NWR 02-12-7	21-Aug-2002	**W-CAT-4**	68.6	7.9	< 0.02	< 0.005	---	1.00	0.010	0.269	< 0.00010	0.001	0.0086	2.04	0.0011	< 0.00005	< 0.005	0.024	0.002	< 0.0001	< 0.0001	0.00368	0.078
	26-Aug-2003		49	7.0	< 0.2	< 0.06	---	---	0.005	0.236	**< 0.002**	< 0.007	< 0.009	0.034	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.005
	24-Aug-2004		37	7.8	< 0.2	< 0.06	---	---	---	---	---	---	---	< 0.005	---	---	---	---	---	---	---	---	---
	25-Aug-2005		32.3	8.0	< 0.2	< 0.06	---	< 0.005	0.005	0.21	0.00004	< 0.007	0.0139	0.059	0.001	0.00006	< 0.006	< 0.008	0.002	< 0.0001	< 0.0008	< 0.001	0.117
	19-Aug-2008		27	7.6	0.11	0.009	6	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	17-Aug-2009		26	7.72	0.15	0.004	8	< 0.001	0.0011	0.22	0.000017	< 0.001	0.011	< 0.06	< 0.0002	---	< 0.0002	0.0053	0.0003	< 0.0001	< 0.0002	0.0005	0.019
	13-Aug-2017		25	---	< 0.010	0.014	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR 03-35-5	26-Aug-2003	**W-CAT-4**	66	9.1	< 0.2	< 0.06	---	---	0.142	0.200	**< 0.002**	< 0.007	< 0.009	13.40	**< 0.10**	< 0.00005	---	---	0.002	---	---	**< 1.0**	< 0.005
	25-Aug-2005		20.8	7.2	< 0.2	< 0.06	133	0.0328	0.0570	0.35	0.00005	< 0.007	0.0119	15.7	0.0806	< 0.00005	< 0.006	0.031	0.003	< 0.0001	< 0.0008	0.004	0.065
	20-Aug-2006		61	7.2	< 0.2	< 0.06	87	0.014	0.069	0.60	< 0.00001	< 0.007	0.003	22.9	0.013	< 0.00005	< 0.006	0.013	< 0.001	< 0.0001	< 0.0008	0.002	0.006
	21-Aug-2007		86	7.1	< 0.2	< 0.06	29	0.020	0.125	0.59	< 0.00001	0.004	0.0079	16.0	0.0141	---	0.0025	0.0230	0.006	< 0.0001	< 0.0002	0.0030	0.020
NWR 03-36-5	26-Aug-2003	**W-CAT-4**	46	8.0	< 0.2	< 0.06	---	---	0.481	0.285	**< 0.002**	< 0.007	< 0.009	42.31	**< 0.10**	< 0.00005	---	---	0.001	---	---	**< 1.0**	0.010
NWR 03-37-4	26-Aug-2003	**W-CAT-4**	71	8.4	< 0.2	< 0.06	---	---	0.045	0.147	**< 0.002**	< 0.007	< 0.009	14.55	**< 0.10**	< 0.00005	---	---	0.001	---	---	**< 1.0**	0.026
	23-Aug-2004		29	6.9	< 0.2	< 0.06	---	< 0.005	< 0.005	0.241	0.000158	< 0.005	0.012	27.19	< 0.001	< 0.00005	< 0.005	0.054	< 0.001	< 0.0001	< 0.0008	0.008	< 0.005
	25-Aug-2005		35.6	7.1	< 0.2	< 0.06	75	0.0211	0.122	0.29	0.00002	< 0.007	0.008	26.4	0.004	< 0.00005	< 0.006	0.017	0.002	< 0.0001	< 0.0008	0.003	0.089
NWR 03-38-3	26-Aug-2003	**W-CAT-4**	291	7.38	< 0.2	< 0.06	---	---	0.010	0.943	**< 0.002**	< 0.007	< 0.009	5.244	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.005
	23-Aug-2004		150	7.5	< 0.2	< 0.06	---	< 0.010	< 0.010	0.786	0.000049	< 0.005	0.011	0.099	0.003	< 0.00005	< 0.005	0.011	**< 0.002**	< 0.0002	**< 0.0016**	0.003	< 0.005
	25-Aug-2005		104	7.8	< 0.2	< 0.06	23	< 0.005	< 0.005	0.55	0.00019	< 0.007	0.006	1.17	0.003	< 0.00005	< 0.006	0.017	0.001	< 0.0001	< 0.0008	0.003	0.016
	20-Aug-2006		174	7.8	< 0.2	< 0.06	12	< 0.005	< 0.005	0.59	< 0.00001	< 0.007	0.014	2.15	0.001	< 0.00005	< 0.006	0.012	< 0.001	< 0.0001	< 0.0008	0.004	0.009
NWR 03-39-4	26-Aug-2003	**W-CAT-4**	227	7.81	< 0.2	< 0.06	---	---	< 0.005	0.348	**< 0.002**	< 0.007	< 0.009	0.135	**< 0.10**	< 0.00005	---	---	0.002	---	---	**< 1.0**	0.007
	23-Aug-2004		139	7.4	< 0.2	< 0.06	---	< 0.010	< 0.010	0.674	< 0.000034	< 0.005	0.010	0.092	0.003	< 0.00005	0.006	0.011	0.003	< 0.0002	**< 0.0016**	0.006	< 0.005
	20-Aug-2006		145	7.5	< 0.2	< 0.06	22	< 0.005	0.037	0.66	< 0.00001	< 0.007	0.003	8.12	< 0.001	< 0.00005	< 0.006	0.044	< 0.001	< 0.0001	< 0.0008	0.003	0.006
NWR 03-40-2	26-Aug-2003	**W-CAT-4**	21	6.8	< 0.2	< 0.06	17	0.008	0.026	0.08	**< 0.002**	< 0.007	0.011	45.73	< 0.10	< 0.00005	< 0.0002	0.034	0.004	< 0.0001	< 0.0002	0.042	0.028

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals															
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
NWR 03-41-17	26-Aug-2003	**W-CAT-3**	137	8.1	< 0.2	< 0.06	---	---	< 0.005	0.637	< 0.002	< 0.007	< 0.009	0.037	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
	20-Aug-2006		154	7.6	< 0.2	< 0.06	6	< 0.005	0.034	0.57	< 0.00001	< 0.007	< 0.002	0.815	< 0.001	< 0.00005	< 0.006	0.016	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	21-Aug-2007		109	7.4	< 0.2	< 0.06	14	0.005	0.021	0.61	< 0.00001	0.008	0.0066	0.30	0.0024	---	0.0012	0.0211	0.004	< 0.0001	< 0.0002	0.0005	0.021
	19-Aug-2008		130	7.5	0.003	< 0.003	9	< 0.001	0.012	0.52	< 0.00001	< 0.001	0.0018	0.50	< 0.0002	---	< 0.0002	0.0085	< 0.001	< 0.0001	< 0.0002	< 0.0001	0.038
	17-Aug-2009		86	7.57	0.004	< 0.003	5	< 0.001	0.023	0.50	< 0.000005	< 0.001	0.0014	0.67	< 0.0002	---	< 0.0002	0.0060	0.0005	< 0.0001	< 0.0002	< 0.0001	0.011
	20-Aug-2010		80	8.12	< 0.3	**< 0.3**	3	0.002	0.017	0.48	< 0.000005	< 0.001	0.0019	0.59	0.0026	---	0.0018	0.0023	0.0004	< 0.0001	< 0.0002	< 0.0001	0.009
NWR 03-42-19	26-Aug-2003	**W-CAT-3**	154	8.3	0.011	< 0.06	---	---	0.038	0.800	< 0.002	< 0.007	< 0.009	0.038	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
	23-Aug-2004		204	7.8	< 0.2	< 0.06	---	< 0.010	< 0.010	1.201	< 0.000034	< 0.005	0.014	0.908	0.002	< 0.00005	< 0.005	< 0.008	< 0.002	< 0.0002	< 0.0016	< 0.002	< 0.005
	25-Aug-2005		251	8.2	< 0.2	< 0.06	29	< 0.005	0.008	1.20	< 0.00001	< 0.007	< 0.002	0.719	< 0.001	< 0.00005	< 0.006	0.039	< 0.001	< 0.0001	< 0.0008	< 0.001	0.009
	20-Aug-2006		221	8.0	< 0.2	< 0.06	11	< 0.005	< 0.005	0.93	< 0.00001	< 0.007	< 0.002	0.532	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	21-Aug-2007		213	7.6	< 0.2	< 0.06	14	0.005	0.026	1.13	< 0.00001	0.003	0.0030	0.44	0.0054	---	0.0006	0.0142	0.006	< 0.0001	< 0.0002	0.0005	0.019
	19-Aug-2008		190	7.9	< 0.003	< 0.003	10	< 0.001	0.004	1.0	0.00002	< 0.001	0.0017	0.48	< 0.0002	---	< 0.0002	0.0021	< 0.001	< 0.0001	< 0.0002	< 0.0001	0.029
	17-Aug-2009		150	7.61	0.007	0.004	14	< 0.001	0.012	1.1	< 0.000005	< 0.001	0.0005	0.68	< 0.0002	---	< 0.0002	0.0027	0.0006	< 0.0001	< 0.0002	< 0.0001	0.004
	20-Aug-2010		140	8.04	0.033	0.004	7	< 0.001	0.0026	0.92	< 0.000005	< 0.001	0.0008	0.20	< 0.0002	---	0.0002	0.0011	0.0015	< 0.0001	< 0.0002	< 0.0001	0.004
	17-Aug-2011		110	---	0.10	< 0.03	< 2	0.005	0.0050	0.67	0.000008	< 0.001	0.0009	0.21	0.0004	---	< 0.0002	0.0015	0.0014	< 0.0001	< 0.0002	0.0001	0.007
NWR 03-43-20	26-Aug-2003	**W-CAT-3**	135	7.4	< 0.2	< 0.06	---	---	0.021	1.042	< 0.002	< 0.007	< 0.009	0.046	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
	25-Aug-2005		184	7.5	< 0.2	< 0.06	45	< 0.005	0.0497	0.95	0.00001	< 0.007	< 0.002	0.663	0.009	< 0.00005	< 0.006	0.030	0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
(Duplicate)	25-Aug-2005		---	---	---	---	45	< 0.005	0.0581	0.99	0.00001	< 0.007	< 0.002	0.554	0.0126	0.00006	< 0.006	< 0.008	0.003	< 0.0001	< 0.0008	< 0.001	0.021
	20-Aug-2006		285	7.6	< 0.2	< 0.06	12	< 0.005	0.018	1.09	< 0.00001	< 0.007	< 0.002	0.094	< 0.001	< 0.00005	< 0.006	0.031	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	21-Aug-2007		169	7.3	< 0.2	< 0.06	29	0.010	0.039	0.89	< 0.00001	0.003	0.0049	0.12	0.0157	---	0.0007	0.0123	0.009	< 0.0001	< 0.0002	0.0004	0.020
	19-Aug-2008		240	8.0	0.005	< 0.003	12	< 0.001	0.012	1.1	< 0.00001	< 0.001	0.0009	0.11	< 0.0002	---	< 0.0002	0.0021	0.004	< 0.0001	< 0.0002	< 0.0001	0.015
	17-Aug-2009		96	7.29	0.010	< 0.003	15	0.015	0.045	0.57	< 0.000005	< 0.001	0.0018	1.3	0.0006	---	< 0.0002	0.019	0.0006	< 0.0001	< 0.0002	0.0008	0.010
	20-Aug-2010		170	8.11	0.030	< 0.003	5	0.002	0.0043	1.0	< 0.000005	< 0.001	0.0007	0.18	< 0.0002	---	0.0012	0.0013	0.0016	< 0.0001	< 0.0002	0.0001	0.005
	17-Aug-2011		160	---	0.05	< 0.03	< 2	0.005	0.0078	0.91	< 0.00003	< 0.001	< 0.0002	0.14	< 0.0002	---	< 0.0002	0.0020	0.0015	< 0.0001	< 0.0002	0.0005	0.009
	19-Aug-2012		140	---	< 0.0030	< 0.0030	8.9	0.0032	0.027	0.70	< 0.000025	< 0.0010	0.00055	1.2	0.00023	---	< 0.00020	0.0022	0.0014	< 0.00010	< 0.00020	0.00030	0.012
NWR 09-1-20	25-Oct-2011	**W-CAT-3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		140	7.73	< 0.0030	0.0034	7.0	0.0036	0.013	0.60	0.000011	< 0.0010	0.00090	1.6	< 0.00020	---	0.0011	0.0031	0.0029	< 0.00010	< 0.00020	0.00029	0.0071
	25-Aug-2013		130	8.08	< 0.0030	< 0.0030	< 10	0.0043	0.0075	0.61	< 0.000025	< 0.0010	0.00031	2.4	< 0.00020	---	0.00091	0.0015	0.00070	< 0.00010	< 0.00020	0.00019	< 0.0030
	08-May-2014		82	7.42	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Aug-2014		100	7.33	< 0.010	< 0.010	18	0.0066	0.0038	0.54	< 0.000020	< 0.0010	0.0010	1.7	< 0.00020	---	< 0.00020	0.00059	0.0042	< 0.00010	< 0.00020	< 0.00010	0.0049
	31-May-2015		120	7.84	< 0.010	0.011	3.2	0.0055	0.0034	0.75	< 0.000020	< 0.0010	0.0012	0.42	< 0.00020	---	< 0.00020	0.0014	0.0017	< 0.00010	< 0.00020	< 0.00010	< 0.0030
	05-Jul-2015		---	---	---	---	---	---	---	---	---	---	---	---	0.00025	---	---	---	---	---	---	---	---
(Duplicate)	05-Jul-2015		---	---	---	---	---	---	---	---	---	---	---	---	0.00022	---	---	---	---	---	---	---	---
	08-Aug-2015		180	7.66	< 0.010	< 0.010	7.5	< 0.0030	0.0033	0.67	< 0.000020	< 0.0010	0.00061	0.34	< 0.00020	---	< 0.00020	0.0016	0.0050	< 0.00010	< 0.00020	< 0.00010	0.0054
	25-Nov-2015		170	7.81	< 0.010	< 0.010	4.3	0.0073	0.0051	1.0	< 0.000020	< 0.0010	0.0012	0.84	< 0.00020	---	< 0.00020	0.0011	0.0019	< 0.00010	< 0.00020	< 0.00010	0.0074
	12-Mar-2016		63	7.56	< 0.010	< 0.010	3.2	0.0051	0.0020	0.60	< 0.000020	< 0.0010	0.00058	0.24	< 0.00020	---	< 0.00020	0.0017	0.00050	< 0.00010	< 0.00020	< 0.00010	0.012
	05-Aug-2016		82	---	< 0.010	< 0.010	---	0.0060	0.0035	0.58	< 0.000020	0.0025	0.0012	0.82	< 0.00020	---	< 0.00020	0.0029	0.0010	< 0.00010	< 0.00020	< 0.00010	0.0074

Advisian
WorleyParsons Group

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
NWR 09-1-20 (cont'd)	03-Nov-2016		100	7.67	< 0.050	< 0.050	3.5	0.0050	0.0022	0.66	< 0.000020	< 0.0010	< 0.00020	1.2	< 0.00020	---	< 0.00020	< 0.00050	0.0034	< 0.00010	< 0.00020	0.0011	< 0.0030
	13-Aug-2017		290	---	< 0.010	< 0.010	---	0.0078	0.0039	0.75	< 0.000020	< 0.0010	0.00055	1.1	< 0.00020	---	< 0.00020	0.00069	0.00026	< 0.00010	< 0.00020	< 0.00010	0.0080
	22-Jul-2018		320	---	< 0.010	< 0.010	---	0.011	0.0028	0.87	< 0.000020	< 0.0010	0.00059	1.2	< 0.00020	---	< 0.00020	0.00055	0.00061	< 0.00010	< 0.00020	< 0.00010	0.0044
NWR 09-1-2	17-Aug-2009	**W-CAT-4**	37	6.98	< 0.003	< 0.003	3	0.002	0.0023	0.02	0.000053	< 0.001	0.0036	4.4	0.0003	---	0.0015	0.025	0.0004	< 0.0001	< 0.0002	0.0084	0.012
NWR 09-2-2	17-Aug-2009	**W-CAT-4**	19	6.98	0.004	0.004	42	0.005	0.014	0.02	0.000005	0.004	0.0019	32	0.0018	---	0.0048	0.019	0.0012	< 0.0001	< 0.0002	0.0038	0.013
NWR 09-2-26	20-Aug-2010	**W-CAT-3**	2700	8.33	< 0.003	< 0.003	8	0.004	0.017	1.2	0.000029	< 0.001	0.0016	0.10	< 0.0002	---	0.050	0.0055	0.0007	< 0.0001	< 0.0002	0.0050	0.005
	18-Aug-2011		3100	8.17	0.007	< 0.003	26	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	20-Aug-2012		3100	8.17	< 0.015	< 0.015	**< 40**	0.083	0.0050	1.0	< 0.000050	**< 0.010**	0.0035	0.46	< 0.0020	---	< 0.0020	< 0.0050	0.0021	**< 0.0010**	< 0.0020	0.0016	**< 0.030**
	25-Aug-2013		80	---	< 0.0030	< 0.0030	100	0.052	0.020	0.11	< 0.000025	0.0014	0.00044	21	< 0.00020	---	0.0035	0.0066	0.00093	< 0.00010	< 0.00020	0.0080	< 0.0030
(Duplicate)	25-Aug-2013		170	---	< 0.0030	< 0.0030	110	0.045	0.020	0.10	< 0.000025	0.0013	< 0.00020	21	< 0.00020	---	0.0034	0.0057	0.00091	< 0.00010	< 0.00020	0.0078	< 0.0030
	08-May-2014		190	7.50	< 0.010	0.017	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Aug-2014		1900	---	< 0.010	< 0.010	23	< 0.030	0.0063	0.60	0.00099	**< 0.010**	< 0.0020	3.4	< 0.0020	---	0.0035	< 0.0050	< 0.0020	**< 0.0010**	< 0.0020	0.010	**< 0.030**
(Duplicate)	01-Aug-2014		2400	---	< 0.010	< 0.010	24	0.017	0.0043	0.71	< 0.000020	< 0.0010	0.00077	2.8	< 0.00020	---	0.00066	0.0010	0.0015	< 0.00010	< 0.00020	0.0020	0.0072
	01-Jun-2015		93	7.25	< 0.010	0.011	65	0.016	0.0092	0.10	< 0.000020	< 0.0010	0.00045	3.6	< 0.00020	---	0.0029	0.0053	0.0018	< 0.00010	< 0.00020	0.028	< 0.0030
	04-Jul-2015		---	---	---	---	---	---	---	---	---	---	---	---	0.00049	---	---	---	---	---	---	---	---
(Duplicate)	04-Jul-2015		---	---	---	---	---	---	---	---	---	---	---	---	0.00024	---	---	---	---	---	---	---	---
	08-Aug-2015		2400	---	< 0.010	< 0.010	< 10	< 0.060	0.0066	0.58	< 0.00040	**< 0.020**	< 0.0040	1.9	< 0.0040	---	< 0.0040	< 0.010	< 0.0040	**< 0.0020**	< 0.0040	0.010	**< 0.060**
	25-Nov-2015		3100	7.70	< 0.010	< 0.010	< 10	0.0075	0.0043	1.1	< 0.000020	< 0.0010	0.0023	1.8	< 0.00020	---	0.00080	0.0022	0.0016	< 0.00010	< 0.00020	0.0035	0.0095
	12-Mar-2016		160	7.54	< 0.010	0.010	44	0.016	0.0081	0.11	0.00047	< 0.0010	< 0.00020	2.6	< 0.00020	---	0.0025	0.0064	0.0039	< 0.00010	< 0.00020	0.015	0.0088
	05-Aug-2016		82	---	< 0.010	< 0.010	---	0.013	0.0078	0.28	< 0.000020	< 0.0010	0.00021	1.7	< 0.00020	---	0.0024	0.0047	0.0014	< 0.00010	< 0.00020	0.0079	0.0052
(Duplicate)	05-Aug-2016		29	---	< 0.010	< 0.010	---	0.012	0.0074	0.27	< 0.000020	< 0.0010	< 0.00020	1.7	< 0.00020	---	0.0023	0.0043	0.0011	< 0.00010	< 0.00020	0.0073	< 0.0030
	03-Nov-2016		24	7.50	< 0.050	< 0.050	46	0.0054	0.00081	0.042	0.000031	< 0.0010	0.0017	2.2	< 0.00020	---	0.0036	0.0029	0.00034	< 0.00010	< 0.00020	0.26	0.0051
(Duplicate)	03-Nov-2016		24	7.35	< 0.010	< 0.010	46	0.0047	0.00029	0.047	< 0.000020	< 0.0010	< 0.00020	2.2	0.00031	---	0.0017	0.00055	< 0.00020	< 0.00010	< 0.00020	0.00033	0.60
	13-Aug-2017		2600	---	< 0.10	**< 0.10**	---	0.0077	0.0040	1.2	< 0.000020	< 0.0010	0.0013	2.8	< 0.00020	---	0.00079	0.00070	0.00045	< 0.00010	< 0.00020	0.00070	0.0075
(Duplicate)	13-Aug-2017		2300	---	< 0.10	**< 0.10**	---	0.0056	0.0039	1.2	< 0.000020	0.0016	0.0012	2.7	< 0.00020	---	0.00085	0.0010	0.00061	< 0.00010	< 0.00020	0.00069	0.0040
	20-Jul-2018		2400	---	< 0.010	< 0.010	---	0.012	0.0043	1.1	< 0.000020	< 0.0010	0.0011	0.70	< 0.00020	---	0.00069	0.00091	0.00055	< 0.00010	< 0.00020	0.00048	0.0075
(Duplicate)	20-Jul-2018		1800	---	< 0.010	< 0.010	---	0.0045	0.0046	0.97	< 0.000020	< 0.0010	0.0012	1.1	< 0.00020	---	0.00090	0.0016	0.00083	< 0.00010	< 0.00020	0.0016	0.0093
NWR 09-3-20	13-Sep-2009	**W-CAT-3**	140	7.66	0.003	< 0.003	4	0.002	0.018	0.69	0.00010	< 0.001	0.0031	< 0.06	0.0003	---	0.031	0.0069	0.0009	< 0.0001	< 0.0002	0.0054	0.010
	20-Aug-2010		120	8.35	< 0.003	0.003	4	0.002	0.016	0.82	0.000012	< 0.001	0.0011	< 0.06	0.0003	---	0.0035	0.0088	0.0003	< 0.0001	< 0.0002	0.0004	0.012
	18-Aug-2011		120	7.93	< 0.003	< 0.003	4	0.003	0.012	0.65	0.000006	< 0.001	0.0010	0.10	< 0.0002	---	0.0034	0.0031	0.0006	< 0.0001	< 0.0002	0.0004	0.013
	19-Aug-2012		95	7.77	< 0.0030	< 0.0030	4.4	0.0032	0.0096	0.58	< 0.000025	< 0.0010	0.00036	0.073	< 0.00020	---	0.0058	0.0032	0.00046	< 0.00010	< 0.00020	0.00035	0.0078
	21-Aug-2013		140	---	0.010	< 0.0030	19	0.0039	0.011	0.86	0.000028	< 0.0010	0.00036	1.7	< 0.00020	---	0.0042	0.0029	0.00033	< 0.00010	< 0.00020	0.00051	0.0063
	11-Oct-2013		85	7.62	0.014	< 0.0030	---	---	---	---	---	---	---	0.12	---	---	---	---	---	---	---	---	---
	08-May-2014		110	8.10	0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Aug-2014		110	---	< 0.010	< 0.010	12	0.0053	0.0072	0.85	< 0.000020	< 0.0010	0.00087	1.5	0.00023	---	0.0047	0.0023	0.00078	< 0.00010	< 0.00020	0.00059	0.0089
	31-May-2015		200	7.87	< 0.010	< 0.010	11	< 0.0030	0.0057	1.0	< 0.000020	< 0.0010	0.00081	2.0	< 0.00020	---	0.0039	0.0018	0.00026	< 0.00010	< 0.00020	0.00044	< 0.0030

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
NWR 09-3-20 (cont'd)	04-Jul-2015		---	---	---	---	---	---	---	---	---	---	---	---	< 0.00020	---	---	---	---	---	---	---	---
(Duplicate)	04-Jul-2015		---	---	---	---	---	---	---	---	---	---	---	---	< 0.00020	---	---	---	---	---	---	---	---
	09-Aug-2015		190	---	< 0.010	< 0.010	9.3	0.0034	0.0054	0.98	< 0.000020	< 0.0010	0.0023	2.2	< 0.00020	---	0.0032	0.0013	0.00023	< 0.00010	< 0.00020	0.00036	0.0070
	25-Nov-2015		170	7.72	< 0.010	< 0.010	< 4.0	0.0033	0.0056	1.0	< 0.000020	< 0.0010	0.00063	3.1	< 0.00020	---	0.0030	0.0025	0.00070	< 0.00010	< 0.00020	0.00037	0.0087
	12-Mar-2016		130	7.62	< 0.010	< 0.010	4.1	0.0042	0.0056	0.90	< 0.000020	< 0.0010	< 0.00020	2.4	< 0.00020	---	0.0012	0.0013	0.0013	< 0.00010	< 0.00020	0.00032	0.0064
	05-Aug-2016		130	---	< 0.010	< 0.010	---	0.0039	0.0054	0.82	0.000056	< 0.0010	0.00072	2.2	0.0017	---	0.00090	0.0013	0.00040	< 0.00010	< 0.00020	0.00026	0.0039
	15-Aug-2017		110	---	< 0.010	< 0.010	---	0.0040	0.0050	0.84	< 0.000020	< 0.0010	0.0013	2.4	< 0.00020	---	0.00088	0.0013	0.00029	< 0.00010	< 0.00020	0.00027	0.0053
	20-Jul-2018		170	---	< 0.010	< 0.010	---	< 0.0030	0.0047	0.81	< 0.000020	< 0.0010	0.00043	2.9	< 0.00020	---	0.00068	0.00079	0.00058	< 0.00010	< 0.00020	0.00022	0.0048
NWR 09-4-17	13-Sep-2009	**W-CAT-3**	86	8.03	0.074	0.26	13	0.001	0.022	0.65	0.000050	< 0.001	0.0019	< 0.06	< 0.0002	---	0.022	0.013	0.0020	< 0.0001	< 0.0002	0.0062	< 0.003
	20-Aug-2010		130	8.22	0.020	0.006	3	0.002	0.013	0.95	0.000009	< 0.001	0.0013	< 0.06	0.0002	---	0.013	0.012	0.0006	< 0.0001	< 0.0002	0.0021	0.009
	18-Aug-2011		140	8.06	0.006	< 0.003	3	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	20-Aug-2012		120	8.13	0.083	0.019	5.2	0.0019	0.0074	0.89	0.000011	< 0.0010	0.00053	0.22	< 0.00020	---	0.0031	0.0074	0.00041	< 0.00010	< 0.00020	0.0015	0.0045
	25-Aug-2013		110	---	0.029	0.0095	2.6	0.0047	0.013	0.83	< 0.000025	< 0.0010	< 0.00020	0.14	< 0.00020	---	0.0020	0.0050	0.00043	< 0.00010	< 0.00020	0.0012	< 0.0030
	08-May-2014		110	7.62	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Aug-2014		100	---	0.016	< 0.010	7.4	0.0041	0.010	0.92	0.000038	< 0.0010	0.0012	1.0	0.074	---	0.0028	0.025	0.00035	< 0.00010	< 0.00020	0.0014	0.029
	01-Jun-2015		100	7.86	< 0.010	< 0.010	5.3	< 0.0030	0.010	0.88	0.000038	< 0.0010	0.0012	1.4	0.0014	---	0.0026	0.029	0.00021	< 0.00010	< 0.00020	0.0017	0.0062
	04-Jul-2015		---	---	---	---	---	---	---	---	---	---	---	---	0.0018	---	---	---	---	---	---	---	---
(Duplicate)	04-Jul-2015		---	---	---	---	---	---	---	---	---	---	---	---	0.0014	---	---	---	---	---	---	---	---
	08-Aug-2015		100	---	< 0.010	< 0.010	< 2.0	< 0.0030	0.0094	0.98	< 0.000020	< 0.0010	< 0.00020	1.3	0.0018	---	0.0012	0.012	0.00056	< 0.00010	< 0.00020	0.0011	0.0048
	25-Nov-2015		110	7.63	< 0.010	< 0.010	< 2.0	0.0030	0.0092	0.94	< 0.000020	< 0.0010	0.00043	2.4	0.00072	---	0.00037	0.0068	0.00072	< 0.00010	< 0.00020	0.00090	0.0063
	12-Mar-2016		110	7.77	< 0.010	< 0.010	4.1	0.0037	0.0088	1.0	0.000024	< 0.0010	< 0.00020	1.6	0.00086	---	0.00064	0.010	0.00082	< 0.00010	< 0.00020	0.00096	0.0083
	05-Aug-2016		100	---	< 0.010	< 0.010	---	0.0034	0.015	0.95	< 0.000020	< 0.0010	0.00036	1.8	0.00025	---	0.00050	0.020	0.00028	< 0.00010	< 0.00020	0.00093	0.011
	03-Nov-2016		100	7.84	< 0.010	< 0.010	4.0	0.0038	0.0025	0.97	0.000038	< 0.0010	0.0026	0.23	0.0029	---	0.0010	0.015	0.00021	< 0.00010	< 0.00020	0.066	0.13
	13-Aug-2017		110	---	< 0.010	< 0.010	---	< 0.0030	0.020	0.95	0.000031	< 0.0010	0.00030	2.4	0.00049	---	0.00061	0.0088	0.00030	< 0.00010	< 0.00020	0.00078	0.0047
	22-Jul-2018		110	---	< 0.010	< 0.010	---	< 0.0030	0.025	0.93	< 0.000020	< 0.0010	0.00026	2.5	0.00060	---	0.00040	0.0060	0.00036	< 0.00010	< 0.00020	0.00075	0.0031
(Duplicate)	22-Jul-2018		110	---	< 0.010	< 0.010	---	< 0.0030	0.025	0.92	< 0.000020	< 0.0010	< 0.00020	2.6	0.00061	---	0.00039	0.0063	0.00038	< 0.00010	< 0.00020	0.00074	< 0.0030
NWR 09-4-5	17-Aug-2009	**W-CAT-3**	19	6.79	< 0.003	< 0.003	88	0.018	0.099	0.11	0.000005	0.002	0.0014	29	0.0046	---	0.0011	0.018	0.0025	< 0.0001	< 0.0002	0.0021	0.010
	21-Aug-2010		68	7.57	0.003	0.003	20	0.019	0.044	0.39	< 0.00003	< 0.001	0.0013	6.8	0.0054	---	< 0.0002	0.021	0.0005	< 0.0001	< 0.0002	0.0015	0.013
	18-Aug-2011		110	7.58	0.015	0.003	24	0.023	0.070	0.44	< 0.00003	< 0.001	0.0005	11	0.0020	---	0.0032	0.0083	0.0009	< 0.0001	< 0.0002	0.0014	0.017
	20-Aug-2012		19	7.15	< 0.0030	< 0.0030	58	0.056	0.068	0.15	0.000014	0.0012	0.0012	63	0.0012	---	0.00077	0.023	0.0015	< 0.00010	< 0.00020	0.00075	0.0054
	21-Aug-2013		42	---	0.018	0.0047	120	0.038	0.089	0.18	0.000038	0.0013	0.00076	45	0.0012	---	0.00097	0.011	0.0013	< 0.00010	< 0.00020	0.00066	0.010
	11-Oct-2013		59	7.56	0.0036	< 0.0030	---	---	---	---	---	---	---	13	---	---	---	---	---	---	---	---	---
	01-Aug-2014		29	---	< 0.010	< 0.010	61	0.029	0.060	0.29	< 0.000020	< 0.0010	0.0016	27	0.00097	---	0.0011	0.013	0.0010	< 0.00010	< 0.00020	0.0010	0.011
	31-May-2015		10	6.94	< 0.010	< 0.010	39	0.026	0.017	0.068	0.000099	< 0.0010	0.0024	14	0.0012	---	0.00021	0.016	0.00072	< 0.00010	< 0.00020	0.00074	0.017
	09-Aug-2015		40	---	< 0.010	< 0.010	73	0.019	0.052	0.30	0.000023	< 0.0010	0.0024	45	0.0017	---	0.00095	0.0077	0.00095	< 0.00010	< 0.00020	0.00066	0.040
	25-Nov-2015		73	7.10	< 0.010	< 0.010	27	0.022	0.049	0.39	< 0.000020	< 0.0010	0.00063	36	0.00081	---	0.00045	0.010	0.0016	< 0.00010	< 0.00020	0.00048	0.030
	05-Aug-2016		14	---	< 0.010	< 0.010	---	0.035	0.088	0.13	0.000024	0.0012	0.00060	58	0.0011	---	0.0011	0.010	0.00098	< 0.00010	< 0.00020	0.00050	0.032
	11-Apr-2017		55	7.51	< 0.010	< 0.010	---	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
NWR 09-4-5 (cont'd)	16-Jun-2017		5.1	---	< 0.010	< 0.010	---	---	---	---	---	---	---	40	---	---	---	---	---	---	---	---	---
	15-Jul-2017		6.9	---	< 0.050	< 0.050	---	---	---	---	---	---	---	40	---	---	---	---	---	---	---	---	---
	15-Aug-2017		15	---	< 0.050	< 0.050	---	0.072	0.12	0.067	< 0.000020	0.0015	0.00048	88	0.0022	---	0.00067	0.0061	0.0010	< 0.00010	< 0.00020	0.00019	0.0091
	14-Sep-2017		22	---	< 0.010	< 0.010	---	---	---	---	---	---	---	68	---	---	---	---	---	---	---	---	---
	14-Oct-2017		57	---	< 0.010	< 0.010	---	---	---	---	---	---	---	39	---	---	---	---	---	---	---	---	---
	23-Nov-2017		72	---	< 0.010	< 0.010	---	---	---	---	---	---	---	28	---	---	---	---	---	---	---	---	---
	20-Jul-2018		30	---	< 0.10	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR 09-5-19	13-Sep-2009	**W-CAT-3**	74	7.60	0.025	0.003	2	< 0.001	0.021	0.69	0.000037	< 0.001	0.0013	< 0.06	< 0.0002	---	0.014	0.0086	0.0017	< 0.0001	< 0.0002	0.0018	0.009
	20-Aug-2010		91	7.92	0.024	< 0.003	3	0.002	0.023	0.58	< 0.000005	< 0.001	0.0015	0.50	< 0.0002	---	0.0005	0.0024	0.0007	< 0.0001	< 0.0002	< 0.0001	0.010
	18-Aug-2011		120	7.95	< 0.003	< 0.003	3	0.003	0.024	0.54	0.000006	< 0.001	0.0014	< 0.06	< 0.0002	---	< 0.0002	0.0012	0.0009	< 0.0001	< 0.0002	0.0003	0.014
(Duplicate)	18-Aug-2011		---	---	---	---	4	0.004	0.023	0.54	< 0.000005	< 0.001	0.0013	0.60	< 0.0002	---	< 0.0002	0.0012	0.0008	< 0.0001	< 0.0002	< 0.0001	0.007
	20-Aug-2012		87	7.89	0.0066	< 0.0030	6.9	0.0055	0.0077	0.59	0.000012	< 0.0010	0.0011	0.85	< 0.00020	---	0.00025	0.0014	0.00040	< 0.00010	< 0.00020	< 0.00010	0.0096
(Duplicate)	20-Aug-2012		---	---	---	---	8.2	0.0031	0.0074	0.58	0.000013	< 0.0010	0.00096	0.84	< 0.00020	---	0.00025	0.0013	0.00037	< 0.00010	< 0.00020	< 0.00010	0.0040
	21-Aug-2013		640	---	0.035	< 0.015	11	0.0035	0.039	1.2	0.000033	< 0.0010	0.0010	1.5	< 0.00020	---	0.0024	0.0059	0.00035	< 0.00010	< 0.00020	0.00034	0.0062
(Duplicate)	21-Aug-2013		640	---	0.0058	< 0.0030	32	0.0038	0.039	1.2	0.000027	< 0.0010	0.00084	1.4	< 0.00020	---	0.0025	0.0050	0.00033	< 0.00010	< 0.00020	0.00035	0.0041
	08-May-2014		210	7.51	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Aug-2014		210	---	0.019	< 0.010	19	0.0042	0.034	1.4	< 0.000020	< 0.0010	0.0010	1.8	< 0.00020	---	0.0022	0.0025	0.00065	< 0.00010	< 0.00020	0.00025	0.0068
(Duplicate)	01-Aug-2014		380	---	0.035	< 0.010	18	0.0048	0.046	1.6	< 0.000020	< 0.0010	0.0011	2.1	< 0.00020	---	0.0029	0.0037	0.00039	< 0.00010	< 0.00020	0.00026	0.010
	31-May-2015		110	7.68	< 0.010	< 0.010	4.7	0.0038	0.012	0.76	0.000026	< 0.0010	0.00039	0.50	< 0.00020	---	< 0.00020	0.00094	0.0022	< 0.00010	< 0.00020	0.00013	< 0.0030
	08-Aug-2015		420	---	< 0.010	< 0.010	2.7	< 0.0030	0.035	1.0	< 0.000020	< 0.0010	0.00045	1.8	< 0.00020	---	0.00048	0.0017	0.00033	< 0.00010	< 0.00020	0.00027	0.0053
(Duplicate)	08-Aug-2015		---	---	---	---	4.4	< 0.0030	0.036	1.0	< 0.000020	< 0.0010	0.00030	1.6	< 0.00020	---	0.00048	0.0016	0.00036	< 0.00010	< 0.00020	0.00025	0.0047
	25-Nov-2015		730	7.87	< 0.010	< 0.010	28	< 0.030	0.037	1.4	< 0.00020	**< 0.010**	< 0.0020	3.6	< 0.0020	---	< 0.0020	< 0.0050	< 0.0020	**< 0.0010**	< 0.0020	< 0.0010	< 0.030
	12-Mar-2016		200	7.64	< 0.010	< 0.010	15	0.0053	0.045	1.4	< 0.000020	< 0.0010	< 0.00020	3.9	< 0.00020	---	0.00024	0.0026	0.0012	< 0.00010	< 0.00020	0.00023	0.012
	05-Aug-2016		200	---	< 0.010	< 0.010	---	0.0052	0.022	0.74	< 0.000020	< 0.0010	0.00091	1.8	< 0.00020	---	< 0.00020	0.0016	0.00044	< 0.00010	< 0.00020	0.00013	0.0058
	13-Aug-2017		660	---	< 0.10	**< 0.10**	---	0.0036	0.061	1.1	< 0.000020	< 0.0010	0.00051	2.4	< 0.00020	---	< 0.00020	0.0013	0.00031	< 0.00010	< 0.00020	0.00024	0.0060
	22-Jul-2018		480	---	< 0.010	< 0.010	---	< 0.0030	0.065	1.5	< 0.000020	< 0.0010	0.00051	4.0	< 0.00020	---	0.00027	0.0013	0.00045	< 0.00010	< 0.00020	0.00025	< 0.0030
NWR-OBS33	01-Oct-2001	**W-CAT-3**	398	7.3	< 0.02	< 0.005	---	0.05	< 0.05	0.532	< 0.002	< 0.005	< 0.005	0.142	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	25-Nov-2015		290	7.51	< 0.010	< 0.010	< 2.0	0.0034	0.010	0.36	< 0.000020	< 0.0010	0.0019	1.0	< 0.00020	---	< 0.00020	0.0024	0.00082	< 0.00010	< 0.00020	< 0.00010	0.015
	02-Nov-2016		330	7.37	< 0.010	< 0.010	14	0.0043	0.0015	0.43	0.000063	< 0.0010	0.0012	5.6	< 0.00020	---	0.0031	0.0044	0.00021	< 0.00010	< 0.00020	0.030	0.0086
NWR-OBS34	01-Oct-2001	**W-CAT-3**	346	7.4	< 0.02	0.006	---	< 0.02	0.05	0.434	< 0.002	< 0.005	< 0.005	0.187	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	0.015
NWR-OBS37	01-Oct-2001	**W-CAT-3**	321	7.7	0.03	< 0.030	---	0.06	< 0.05	0.837	< 0.002	< 0.005	< 0.005	0.166	< 0.03	---	< 0.005	< 0.008	0.03	**< 0.01**	< 0.03	---	< 0.005
RB-OBS32	31-May-2015	**W-CAT-3**	15	7.18	< 0.010	< 0.010	**< 100**	0.0065	0.0061	0.29	< 0.000020	< 0.0010	0.00073	1.6	0.00039	---	< 0.00020	0.0044	0.0013	< 0.00010	< 0.00020	0.0014	0.010
RB-OBS33	12-Mar-2016	**W-CAT-3**	370	7.30	< 0.010	< 0.010	< 10	0.0064	0.018	0.37	< 0.000020	< 0.0010	0.0011	4.8	< 0.00020	---	0.00037	0.0022	0.00077	< 0.00010	< 0.00020	< 0.00010	0.013
RB-OBS35	01-Oct-2001	**W-CAT-3**	309	7.7	< 0.02	0.014	---	< 0.02	0.06	0.863	< 0.002	< 0.005	< 0.005	0.106	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	05-Feb-2003		246	7.8	< 0.2	**< 0.3**	---	---	---	---	---	---	---	1.075	---	---	---	---	---	---	---	---	---

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
RB-OBS36	01-Oct-2001	**W-CAT-3**	338	7.5	< 0.02	0.009	---	< 0.02	< 0.05	0.654	< 0.002	< 0.005	< 0.005	0.146	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
RB-OBS38	01-Oct-2001	**W-CAT-3**	347	7.6	< 0.02	0.007	---	< 0.02	< 0.05	0.518	< 0.002	< 0.005	< 0.005	0.118	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	05-Feb-2003		307	7.9	< 0.2	**< 0.3**	---	---	---	---	---	---	---	0.559	---	---	---	---	---	---	---	---	---
RB-OBS39	05-Feb-2003	**W-CAT-3**	274	7.9	< 0.2	**< 0.3**	---	---	---	---	---	---	---	1.298	---	---	---	---	---	---	---	---	---
	31-May-2015		80	7.38	< 0.010	0.014	**< 100**	0.0043	0.015	0.52	< 0.000020	< 0.0010	0.00074	4.2	0.00044	---	0.00037	0.0025	0.00047	< 0.00010	< 0.00020	0.00080	0.0043
RB-OBS-40	21-Aug-2012	**W-CAT-4**	19	7.64	0.019	0.0058	120	0.016	0.023	0.030	0.000020	0.0012	0.00029	63	0.00052	---	0.0028	0.0095	0.0028	< 0.00010	< 0.00020	0.00065	< 0.0030
(Duplicate)	21-Aug-2012		---	---	---	---	110	0.017	0.024	0.027	0.000032	0.0012	0.0013	64	0.00088	---	0.0028	0.0076	0.0030	< 0.00010	< 0.00020	0.00053	0.0037
	11-Oct-2013		19	7.17	< 0.0030	0.011	---	---	---	---	---	---	---	10	---	---	---	---	---	---	---	---	---
	19-Sep-2014		16	7.03	< 0.010	< 0.010	86	0.041	0.028	0.028	0.000021	0.0021	0.0037	65	0.00071	---	0.0077	0.016	0.0024	< 0.00010	< 0.00020	0.0028	0.0093
RB-OBS-41	21-Aug-2012	**W-CAT-4**	18	7.51	0.010	< 0.0030	130	0.011	0.0081	0.089	0.00043	< 0.0010	0.0035	5.4	0.00027	---	0.0038	0.072	0.0018	< 0.00010	< 0.00020	0.0077	0.020
	11-Oct-2013		8.4	6.93	< 0.0030	0.0066	---	---	---	---	---	---	---	0.071	---	---	---	---	---	---	---	---	---
	19-Sep-2014		12	7.04	0.014	< 0.010	---	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
RB-OBS-44	31-May-2015	**W-CAT-4**	29	7.26	18	< 0.010	9.2	0.0047	0.00049	0.070	0.00012	< 0.0010	0.0075	< 0.060	< 0.00020	---	0.00023	0.0029	0.00056	< 0.00010	< 0.00020	0.024	0.013
RB-OBS-45	21-Aug-2012	**W-CAT-4**	24	7.72	0.038	0.38	99	0.013	0.018	0.044	0.000062	< 0.0010	0.00083	20	0.0020	---	0.0056	0.037	0.0036	< 0.00010	< 0.00020	0.0088	0.016
	31-May-2015		13	7.14	< 0.010	< 0.010	61	0.024	0.014	0.021	0.000027	0.0010	0.0012	26	0.0011	---	0.0029	0.013	0.0014	< 0.00010	< 0.00020	0.0014	0.0052
	25-Nov-2015		22	6.98	< 0.010	< 0.010	98	0.023	0.030	0.051	0.00028	0.0018	0.0012	85	0.0011	---	0.0064	0.013	0.0022	< 0.00010	< 0.00020	0.0027	0.011
RB-OBS-46	21-Aug-2012	**W-CAT-4**	25	7.37	< 0.0030	0.020	200	0.069	0.047	< 0.10	0.000044	0.0043	0.0017	80	0.0033	---	0.0052	0.031	0.0032	< 0.00010	< 0.00020	0.0015	0.015
	09-May-2014		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-May-2015		15	7.09	< 0.050	< 0.050	100	0.072	0.039	0.021	0.000075	0.0038	0.0017	90	0.0023	---	0.0073	0.022	0.0030	< 0.00010	< 0.00020	0.00071	0.0063
	25-Nov-2015		15	6.93	< 0.010	0.014	100	0.11	0.065	0.027	0.000032	0.0054	0.0012	130	0.0032	---	0.0044	0.012	0.0029	< 0.00010	< 0.00020	0.00024	0.0038
	15-Aug-2016		16	7.02	< 0.010	0.011	89	0.091	0.066	0.025	0.000035	0.0046	0.00083	120	0.0041	---	0.0054	0.022	0.0024	< 0.00010	< 0.00020	0.00023	0.019
	11-Apr-2017		16	7.34	< 0.050	< 0.050	---	---	---	---	---	---	---	0.63	---	---	---	---	---	---	---	---	---
	10-May-2017		12	6.93	< 0.010	< 0.010	---	---	---	---	---	---	---	120	---	---	---	---	---	---	---	---	---
	15-Jun-2017		12	---	< 0.010	< 0.010	---	---	---	---	---	---	---	110	---	---	---	---	---	---	---	---	---
	15-Jul-2017		13	---	< 0.050	< 0.050	---	---	---	---	---	---	---	28	---	---	---	---	---	---	---	---	---
	19-Aug-2017		13	---	< 0.010	< 0.010	---	---	---	---	---	---	---	120	---	---	---	---	---	---	---	---	---
	15-Sep-2017		12	---	< 0.010	< 0.010	---	---	---	---	---	---	---	130	---	---	---	---	---	---	---	---	---
	14-Oct-2017		15	---	< 0.010	< 0.010	---	---	---	---	---	---	---	110	---	---	---	---	---	---	---	---	---
	23-Nov-2017		14	---	< 0.010	< 0.010	---	---	---	---	---	---	---	23	---	---	---	---	---	---	---	---	---
RB-OBS-47	21-Aug-2012	**W-CAT-4**	21	7.69	< 0.0030	0.011	140	0.027	0.035	0.021	0.000025	0.0018	0.0014	32	0.0046	---	0.0045	0.040	0.0044	< 0.00010	< 0.00020	0.0043	0.0092
	09-May-2014		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Jun-2015		11	7.46	< 0.010	< 0.010	31	---	---	---	---	---	---	1.2	---	---	---	---	---	---	---	---	---
	15-Aug-2016		9.2	7.49	< 0.010	< 0.010	37	0.019	0.013	0.036	0.000053	< 0.0010	0.0011	23	0.0020	---	0.0042	0.025	0.0022	< 0.00010	< 0.00020	0.0046	0.012
	10-May-2017		14	7.09	< 0.010	< 0.010	---	---	---	---	---	---	---	11	---	---	---	---	---	---	---	---	---

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
RB-OBS-47 (cont'd)	15-Jul-2017		9.3	---	< 0.010	< 0.010	---	---	---	---	---	---	---	3.0	---	---	---	---	---	---	---	---	---
(Duplicate)	15-Jul-2017		8.8	---	< 0.010	< 0.010	---	---	---	---	---	---	---	11	---	---	---	---	---	---	---	---	---
	19-Aug-2017		6.5	---	< 0.010	< 0.010	---	---	---	---	---	---	---	49	---	---	---	---	---	---	---	---	---
	15-Sep-2017		8.5	---	< 0.010	< 0.010	---	---	---	---	---	---	---	61	---	---	---	---	---	---	---	---	---
	14-Oct-2017		9.7	---	< 0.010	< 0.010	---	---	---	---	---	---	---	64	---	---	---	---	---	---	---	---	---
RB-OBS-48	21-Aug-2012	**W-CAT-4**	15	7.71	0.018	0.011	450	0.033	0.023	0.042	0.00018	0.0018	0.0058	5.9	0.013	---	0.0058	0.057	0.0022	< 0.00010	< 0.00020	0.0073	0.027
	08-May-2014		6.0	7.49	0.097	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Nov-2015		23	7.22	< 0.010	< 0.010	< 10	0.0091	0.0022	< 0.020	0.000020	< 0.0010	0.0013	2.5	0.00027	---	0.0042	0.0076	0.0019	< 0.00010	< 0.00020	0.011	0.013
	15-Aug-2016		7.0	7.49	< 0.010	< 0.010	7.6	0.028	0.0065	0.035	0.000023	< 0.0010	0.00076	19	< 0.00020	---	0.0015	0.0077	0.0017	< 0.00010	< 0.00020	0.0017	0.0079
RB-OBS-49	31-May-2015	**W-CAT-4**	14	7.18	< 0.010	< 0.010	130	0.088	0.029	0.023	0.000032	0.0020	0.0018	48	0.0025	---	0.0034	0.027	0.0014	< 0.00010	< 0.00020	0.0043	< 0.0030
	25-Nov-2015		14	7.35	< 0.010	< 0.010	140	0.14	0.079	0.026	0.00014	0.0072	0.0040	89	0.0039	---	0.0051	0.024	0.0043	< 0.00010	< 0.00020	0.00094	0.015
RB-OBS-50	31-May-2015	**W-CAT-4**	6.3	7.34	< 0.010	< 0.010	22	0.012	0.033	0.030	0.000042	< 0.0010	0.0068	21	0.00049	---	0.0013	0.023	0.00097	< 0.00010	< 0.00020	0.012	0.014
RB-OBS-52	21-Aug-2012	**W-CAT-4**	35	7.72	< 0.0030	0.012	---	---	---	---	---	---	---	3.0	---	---	---	---	---	---	---	---	---
RB-RW-1	05-Mar-2003	**W-CAT-3**	112	7.6	< 0.2	**< 0.3**	---	---	---	---	---	---	---	0.095	---	---	---	---	---	---	---	---	---
RB-RW-2	05-Mar-2003	**W-CAT-3**	122	7.7	< 0.2	**< 0.3**	---	---	---	---	---	---	---	0.117	---	---	---	---	---	---	---	---	---
RB-RW-3	01-Jun-2015	**W-CAT-4**	11	7.35	< 0.010	< 0.010	36	0.029	0.024	0.030	0.000031	0.0016	0.0041	9.4	0.0011	---	0.0033	0.026	0.0015	< 0.00010	< 0.00020	0.0026	0.0055
RB-RW-4	31-May-2015	**W-CAT-4**	9.1	7.41	< 0.010	< 0.010	12	0.011	0.0076	0.021	0.000032	< 0.0010	0.0010	2.9	0.00071	---	0.00084	0.0093	0.00071	< 0.00010	< 0.00020	0.0033	0.0046
	25-Nov-2015		20	7.20	< 0.010	< 0.010	79	0.050	0.062	0.030	< 0.000020	0.0023	0.00046	63	0.0010	---	0.0011	0.014	0.0024	< 0.00010	< 0.00020	0.0021	0.0042
	15-Aug-2016		17	7.39	< 0.010	< 0.010	38	0.012	0.039	0.034	< 0.000020	< 0.0010	< 0.00020	20	0.00085	---	0.00091	0.0075	0.0019	< 0.00010	< 0.00020	0.0014	0.0064
RB-RW-5	11-Oct-2013	**W-CAT-4**	25	6.95	0.093	0.0031	---	---	---	---	---	---	---	0.17	---	---	---	---	---	---	---	---	---
	19-Sep-2014		25	6.85	< 0.010	< 0.010	16	0.010	0.076	0.092	< 0.000020	0.0012	0.00069	46	0.0014	---	0.00043	0.0029	0.00061	< 0.00010	< 0.00020	0.0074	0.0042
	25-Nov-2015		24	7.29	< 0.010	< 0.010	92	0.0076	0.11	0.10	< 0.000020	< 0.0010	0.00077	40	0.00024	---	0.00026	0.0016	0.0016	< 0.00010	< 0.00020	0.0053	0.010
	02-Nov-2016		24	7.43	< 0.010	< 0.010	35	< 0.0030	0.00080	0.11	< 0.000020	< 0.0010	< 0.00020	16	< 0.00020	---	0.00069	< 0.00050	0.0013	< 0.00010	< 0.00020	0.00072	< 0.0030
	15-Mar-2017		25	7.40	0.014	< 0.010	---	---	---	---	---	---	---	0.87	---	---	---	---	---	---	---	---	---
	11-Apr-2017		25	7.53	< 0.010	< 0.010	---	---	---	---	---	---	---	6.5	---	---	---	---	---	---	---	---	---
	10-May-2017		22	7.40	0.017	< 0.010	---	---	---	---	---	---	---	12	---	---	---	---	---	---	---	---	---
	16-Jun-2017		20	---	1.9	0.088	---	---	---	---	---	---	---	0.91	---	---	---	---	---	---	---	---	---
	15-Jul-2017		21	---	< 0.010	< 0.010	---	---	---	---	---	---	---	0.075	---	---	---	---	---	---	---	---	---
	19-Aug-2017		23	---	0.016	< 0.010	---	---	---	---	---	---	---	46	---	---	---	---	---	---	---	---	---
	15-Sep-2017		24	---	< 0.010	< 0.010	---	---	---	---	---	---	---	2.8	---	---	---	---	---	---	---	---	---
	14-Oct-2017		24	---	< 0.010	< 0.010	---	---	---	---	---	---	---	26	---	---	---	---	---	---	---	---	---
	23-Nov-2017		22	---	< 0.010	< 0.010	---	---	---	---	---	---	---	39	---	---	---	---	---	---	---	---	---

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
RB-RW-6	11-Oct-2013	**W-CAT-4**	20	7.36	< 0.0030	0.0034	---	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
	19-Sep-2014		20	7.01	< 0.010	< 0.010	12	0.0050	0.0034	0.26	< 0.000020	< 0.0010	< 0.00020	1.4	0.00066	---	< 0.00020	0.0013	0.0040	< 0.00010	< 0.00020	0.0023	0.0031
	25-Nov-2015		16	7.17	< 0.010	< 0.010	7.9	0.0039	0.00070	0.22	< 0.000020	< 0.0010	0.0014	0.98	< 0.00020	---	0.00039	0.0042	0.0044	< 0.00010	< 0.00020	0.0059	0.0031
	15-Aug-2016		21	7.30	0.30	0.031	5.4	0.0071	0.0045	0.23	< 0.000020	< 0.0010	0.0011	2.8	0.00066	---	0.0011	0.0039	0.0017	< 0.00010	< 0.00020	0.0043	0.015
RB-RW-8	11-Oct-2013	**W-CAT-4**	9.2	7.09	0.0030	0.0063	---	---	---	---	---	---	---	5.7	---	---	---	---	---	---	---	---	---
	19-Sep-2014		6.4	6.87	< 0.010	< 0.010	25	0.019	0.028	0.067	0.000020	0.0012	0.0013	12	0.0051	---	0.0022	0.015	0.00098	< 0.00010	< 0.00020	0.0031	0.29
	01-Jun-2015		3.0	7.64	< 0.010	< 0.010	3.4	0.0046	0.0050	< 0.020	0.000025	< 0.0010	0.0022	0.51	< 0.00020	---	0.0052	0.0045	0.00024	< 0.00010	< 0.00020	0.0024	0.17
	15-Aug-2016		57	7.51	< 0.010	0.013	20	0.0093	0.086	0.40	< 0.000020	< 0.0010	0.00059	10	0.00061	---	0.0012	0.0067	0.00096	< 0.00010	< 0.00020	0.0020	0.037
	15-Mar-2017		70	7.60	< 0.010	< 0.010	---	---	---	---	---	---	---	4.1	---	---	---	---	---	---	---	---	---
	11-Apr-2017		81	7.51	< 0.010	< 0.010	---	---	---	---	---	---	---	15	---	---	---	---	---	---	---	---	---
(Duplicate)	11-Apr-2017		82	7.50	< 0.010	< 0.010	---	---	---	---	---	---	---	14	---	---	---	---	---	---	---	---	---
	10-May-2017		3.4	7.55	0.11	0.033	---	---	---	---	---	---	---	0.34	---	---	---	---	---	---	---	---	---
(Duplicate)	10-May-2017		3.6	7.57	0.13	0.035	---	---	---	---	---	---	---	0.32	---	---	---	---	---	---	---	---	---
	16-Jul-2017		3.4	---	< 0.010	< 0.010	---	---	---	---	---	---	---	1.0	---	---	---	---	---	---	---	---	---
	19-Aug-2017		4.1	---	0.12	0.061	---	---	---	---	---	---	---	18	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2017		4.0	---	0.068	0.039	---	---	---	---	---	---	---	18	---	---	---	---	---	---	---	---	---
	14-Sep-2017		2.9	---	< 0.010	< 0.010	---	---	---	---	---	---	---	20	---	---	---	---	---	---	---	---	---
(Duplicate)	14-Sep-2017		2.7	---	< 0.010	< 0.010	---	---	---	---	---	---	---	21	---	---	---	---	---	---	---	---	---
	14-Oct-2017		4.9	---	< 0.010	< 0.010	---	---	---	---	---	---	---	75	---	---	---	---	---	---	---	---	---
	22-Nov-2017		4.3	---	< 0.010	< 0.010	---	---	---	---	---	---	---	74	---	---	---	---	---	---	---	---	---
RB-RW-9	11-Oct-2013	**W-CAT-4**	22	7.16	< 0.0030	< 0.0030	---	---	---	---	---	---	---	16	---	---	---	---	---	---	---	---	---
	19-Sep-2014		70	6.84	< 0.010	< 0.010	140	0.025	0.025	0.038	0.000065	0.0016	0.00062	65	0.0054	---	0.0017	0.017	0.0051	< 0.00010	< 0.00020	0.0024	0.0048
	01-Jun-2015		3.7	7.31	0.48	< 0.010	9.6	0.0040	0.0014	0.084	0.00016	< 0.0010	0.0041	0.25	0.00041	---	0.00055	0.0088	0.00099	< 0.00010	< 0.00020	0.0044	0.079
	15-Aug-2016		21	7.28	< 0.10	**< 0.10**	140	0.016	0.021	0.036	0.000081	0.0012	0.0012	61	0.0018	---	0.0016	0.014	0.0048	< 0.00010	< 0.00020	0.00024	0.027
	15-Mar-2017		24	7.37	< 0.010	< 0.010	---	---	---	---	---	---	---	23	---	---	---	---	---	---	---	---	---
	11-Apr-2017		24	7.37	< 0.010	< 0.010	---	---	---	---	---	---	---	43	---	---	---	---	---	---	---	---	---
	10-May-2017		4.0	7.37	< 0.010	< 0.010	---	---	---	---	---	---	---	5.2	---	---	---	---	---	---	---	---	---
	15-Jun-2017		3.8	---	0.032	< 0.010	---	---	---	---	---	---	---	0.10	---	---	---	---	---	---	---	---	---
	16-Jul-2017		9.0	---	< 0.010	< 0.010	---	---	---	---	---	---	---	1.2	---	---	---	---	---	---	---	---	---
	19-Aug-2017		12	---	0.34	0.048	---	---	---	---	---	---	---	52	---	---	---	---	---	---	---	---	---
	14-Sep-2017		14	---	0.034	< 0.010	---	---	---	---	---	---	---	61	---	---	---	---	---	---	---	---	---
	14-Oct-2017		17	---	< 0.010	< 0.010	---	---	---	---	---	---	---	62	---	---	---	---	---	---	---	---	---
	23-Nov-2017		18	---	< 0.010	< 0.010	---	---	---	---	---	---	---	56	---	---	---	---	---	---	---	---	---
RB-RW-10	11-Oct-2013	**W-CAT-3**	110	7.30	< 0.0030	< 0.0030	---	---	---	---	---	---	---	0.85	---	---	---	---	---	---	---	---	---
	15-Aug-2016		94	7.53	< 0.010	< 0.010	30	0.0071	0.029	0.59	< 0.000020	< 0.0010	0.00094	4.6	0.00039	---	0.00023	0.0010	0.0024	< 0.00010	< 0.00020	0.00027	0.0095

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
RB-RW-12	01-Jun-2015	**W-CAT-4**	7.5	7.44	< 0.010	< 0.010	16	0.0069	0.0026	0.026	0.00018	< 0.0010	0.0036	1.9	< 0.00020	---	0.0073	0.015	0.00055	< 0.00010	< 0.00020	0.0093	1.3
	15-Aug-2016		12	7.47	0.013	< 0.010	**62**	0.021	0.015	0.030	0.000070	0.0013	0.00058	22	0.00062	---	0.0047	0.013	**0.0014**	< 0.00010	< 0.00020	0.00087	0.035
RB-RW-13	01-Jun-2015	**W-CAT-4**	7.2	7.24	< 0.010	< 0.010	**190**	0.0055	0.0079	0.036	< 0.000020	< 0.0010	0.0011	4.2	< 0.00020	---	0.00061	0.0082	< 0.00020	< 0.00010	< 0.00020	0.0036	0.026
	15-Mar-2017		26	7.40	< 0.010	< 0.010	---	---	---	---	---	---	---	11	---	---	---	---	---	---	---	---	---
	11-Apr-2017		50	7.55	< 0.010	< 0.010	---	---	---	---	---	---	---	6.8	---	---	---	---	---	---	---	---	---
	10-May-2017		48	7.54	< 0.010	< 0.010	---	---	---	---	---	---	---	4.0	---	---	---	---	---	---	---	---	---
	15-Jun-2017		8.6	---	0.51	0.029	---	---	---	---	---	---	---	0.32	---	---	---	---	---	---	---	---	---
(Duplicate)	15-Jun-2017		8.3	---	0.49	0.019	---	---	---	---	---	---	---	0.34	---	---	---	---	---	---	---	---	---
	16-Jul-2017		12	---	< 0.010	< 0.010	---	---	---	---	---	---	---	0.096	---	---	---	---	---	---	---	---	---
	19-Aug-2017		11	---	< 0.010	< 0.010	---	---	---	---	---	---	---	0.76	---	---	---	---	---	---	---	---	---
	15-Sep-2017		15	---	< 0.010	< 0.010	---	---	---	---	---	---	---	0.35	---	---	---	---	---	---	---	---	---
	14-Oct-2017		20	---	< 0.010	< 0.010	---	---	---	---	---	---	---	12	---	---	---	---	---	---	---	---	---
	23-Nov-2017		11	---	< 0.010	< 0.010	---	---	---	---	---	---	---	6.9	---	---	---	---	---	---	---	---	---
RB-13-1-2.4	11-Oct-2013	**W-CAT-4**	53	7.68	0.035	< 0.030	---	---	---	---	---	---	---	14	---	---	---	---	---	---	---	---	---
	13-Sep-2014		40	7.25	< 0.010	< 0.010	20	0.031	**0.039**	0.25	0.000057	0.0048	0.0015	**29**	0.00076	---	0.0035	0.015	0.00068	< 0.00010	< 0.00020	0.0086	0.012
	14-Sep-2017		110	---	< 0.010	< 0.010	---	---	---	---	---	---	---	**42**	---	---	---	---	---	---	---	---	---
RB-13-2-2.4	11-Oct-2013	**W-CAT-4**	150	7.72	< 0.0030	0.0066	---	---	---	---	---	---	---	3.8	---	---	---	---	---	---	---	---	---
	14-Sep-2014		130	7.36	< 0.010	< 0.010	18	0.0068	0.028	0.53	< 0.000020	< 0.0010	0.0018	**28**	0.00087	---	0.011	0.018	0.00047	< 0.00010	< 0.00020	0.0058	0.0068
	31-May-2015		37	7.41	< 0.010	< 0.010	3.7	0.0049	0.0026	0.16	< 0.000020	< 0.0010	0.0014	1.6	< 0.00020	---	0.014	0.013	0.00029	< 0.00010	< 0.00020	0.018	0.0075
	18-Oct-2015		60	7.13	< 0.010	< 0.010	10	0.0088	0.022	0.40	< 0.000020	< 0.0010	0.00033	25	0.00028	---	0.010	0.016	0.00042	< 0.00010	< 0.00020	0.012	0.0087
	15-Aug-2016		89	7.71	< 0.010	< 0.010	14	0.010	**0.035**	0.59	0.000030	< 0.0010	0.00031	22	0.00036	---	0.0033	0.020	**0.0011**	< 0.00010	< 0.00020	0.0025	0.015
	01-Oct-2016		---	7.40	---	---	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		170	---	< 0.010	< 0.010	---	---	---	---	---	---	---	9.4	---	---	---	---	---	---	---	---	---
RB-13-3-2.4	11-Oct-2013	**W-CAT-4**	**340**	7.91	1.5	**0.61**	---	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
	14-Sep-2014		**310**	7.54	< 0.010	< 0.010	16	0.0070	0.020	0.69	< 0.000020	< 0.0010	0.0014	16	< 0.00020	---	0.012	0.0088	0.00049	< 0.00010	< 0.00020	0.0030	0.023
	15-Aug-2016		230	7.68	< 0.010	< 0.010	9.0	0.0088	0.013	0.56	0.000062	< 0.0010	0.0010	9.5	< 0.00020	---	0.0053	0.018	0.00061	< 0.00010	< 0.00020	0.0053	**4.0**
	01-Oct-2016		---	7.54	---	---	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-13-4-3	11-Oct-2013	**W-CAT-4**	**280**	**10.1**	< 0.015	< 0.015	---	---	---	---	---	---	---	0.47	---	---	---	---	---	---	---	---	---
	14-Sep-2014		120	8.40	< 0.010	< 0.010	8.8	0.032	0.0033	0.71	< 0.000020	< 0.0010	0.0010	< 0.060	< 0.00020	---	0.020	0.0036	0.00034	< 0.00010	< 0.00020	0.00026	0.0077
	18-Oct-2015		230	8.76	< 0.010	< 0.010	19	0.036	0.017	1.4	< 0.000020	< 0.0010	0.00033	0.093	< 0.00020	---	0.020	0.0050	0.00049	< 0.00010	< 0.00020	0.0019	0.0052
(Duplicate)	18-Oct-2015		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Oct-2016		---	8.13	---	---	6.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		180	---	< 0.010	< 0.010	---	---	---	---	---	---	---	0.56	---	---	---	---	---	---	---	---	---

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals															
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
RB-13-6-2.4	11-Oct-2013	**W-CAT-4**	200	7.99	3.0	0.58	---	---	---	---	---	---	---	0.10	---	---	---	---	---	---	---	---	---
	13-Sep-2014		180	8.03	0.011	< 0.010	23	0.0099	0.019	0.48	< 0.000020	< 0.0010	0.0050	11	< 0.00020	---	0.022	0.0099	0.00056	< 0.00010	< 0.00020	0.0018	0.36
	19-Oct-2015		140	7.38	< 0.010	< 0.010	---	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
	15-Aug-2016		140	7.49	0.010	0.011	20	0.013	0.017	0.30	0.000036	< 0.0010	0.00064	12	0.00023	---	0.013	0.011	0.00080	< 0.00010	< 0.00020	0.0049	2.3
	01-Oct-2016		---	7.63	---	---	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-13-7-1.5	11-Oct-2013	**W-CAT-4**	160	7.92	0.0044	0.0044	---	---	---	---	---	---	---	0.076	---	---	---	---	---	---	---	---	---
	13-Sep-2014		150	8.17	< 0.010	< 0.010	36	---	---	---	---	---	---	0.82	---	---	---	---	---	---	---	---	---
RB-13-8-1.5	11-Oct-2013	**W-CAT-4**	160	7.92	0.36	0.0085	---	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
	13-Sep-2014		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Oct-2015		170	7.68	0.17	< 0.010	15	0.12	0.00059	0.049	0.00038	< 0.0010	0.0027	0.42	0.00043	---	0.0031	0.0094	0.00029	< 0.00010	< 0.00020	0.0047	0.59
	15-Aug-2016		200	7.83	< 0.010	< 0.010	19	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
	01-Oct-2016		---	7.96	---	---	4.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-01	16-Jun-2017	**W-CAT-4**	19	---	< 0.010	< 0.010	---	---	---	---	---	---	---	66	---	---	---	---	---	---	---	---	---
	15-Jul-2017		25	---	0.014	< 0.010	---	---	---	---	---	---	---	0.50	---	---	---	---	---	---	---	---	---
	19-Aug-2017		18	---	< 0.010	< 0.010	---	---	---	---	---	---	---	89	---	---	---	---	---	---	---	---	---
	14-Sep-2017		16	---	< 0.010	< 0.010	---	---	---	---	---	---	---	95	---	---	---	---	---	---	---	---	---
	14-Oct-2017		16	---	< 0.010	< 0.010	---	---	---	---	---	---	---	96	---	---	---	---	---	---	---	---	---
	23-Nov-2017		18	---	0.062	< 0.010	---	---	---	---	---	---	---	33	---	---	---	---	---	---	---	---	---
RB-MW17-02	16-Jun-2017	**W-CAT-4**	32	---	< 0.010	< 0.010	---	---	---	---	---	---	---	11	---	---	---	---	---	---	---	---	---
	15-Jul-2017		31	---	< 0.010	< 0.010	---	---	---	---	---	---	---	1.2	---	---	---	---	---	---	---	---	---
	19-Aug-2017		26	---	0.053	0.15	---	---	---	---	---	---	---	20	---	---	---	---	---	---	---	---	---
	14-Sep-2017		22	---	< 0.010	0.027	---	---	---	---	---	---	---	28	---	---	---	---	---	---	---	---	---
	14-Oct-2017		17	---	< 0.010	< 0.010	---	---	---	---	---	---	---	27	---	---	---	---	---	---	---	---	---
	23-Nov-2017		25	---	< 0.010	< 0.010	---	---	---	---	---	---	---	23	---	---	---	---	---	---	---	---	---
RB-MW17-03	16-Jun-2017	**W-CAT-4**	56	---	0.018	< 0.010	---	---	---	---	---	---	---	7.9	---	---	---	---	---	---	---	---	---
	16-Jul-2017		32	---	< 0.010	< 0.010	---	---	---	---	---	---	---	0.92	---	---	---	---	---	---	---	---	---
	19-Aug-2017		28	---	< 0.010	< 0.010	---	---	---	---	---	---	---	24	---	---	---	---	---	---	---	---	---
	14-Sep-2017		23	---	< 0.010	< 0.010	---	---	---	---	---	---	---	26	---	---	---	---	---	---	---	---	---
	14-Oct-2017		17	---	< 0.010	< 0.010	---	---	---	---	---	---	---	29	---	---	---	---	---	---	---	---	---
	23-Nov-2017		26	---	< 0.010	< 0.010	---	---	---	---	---	---	---	29	---	---	---	---	---	---	---	---	---
RB-MW17-04	15-Jun-2017	**W-CAT-4**	88	---	0.024	< 0.010	---	---	---	---	---	---	---	2.6	---	---	---	---	---	---	---	---	---
	15-Jul-2017		63	---	0.012	< 0.010	---	---	---	---	---	---	---	0.30	---	---	---	---	---	---	---	---	---
(Duplicate)	15-Jul-2017		61	---	0.012	< 0.010	---	---	---	---	---	---	---	0.28	---	---	---	---	---	---	---	---	---
	19-Aug-2017		14	---	0.017	< 0.010	---	---	---	---	---	---	---	0.066	---	---	---	---	---	---	---	---	---
	14-Sep-2017		20	---	< 0.010	< 0.010	---	---	---	---	---	---	---	5.8	---	---	---	---	---	---	---	---	---
(Duplicate)	14-Sep-2017		20	---	< 0.010	< 0.010	---	---	---	---	---	---	---	5.8	---	---	---	---	---	---	---	---	---

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
RB-MW17-04 (cont'd)	14-Oct-2017		19	---	< 0.010	< 0.010	---	---	---	---	---	---	---	8.5	---	---	---	---	---	---	---	---	---
	23-Nov-2017		23	---	< 0.010	< 0.010	---	---	---	---	---	---	---	8.8	---	---	---	---	---	---	---	---	---
RB-MW17-05	15-Jul-2017	**W-CAT-4**	6.9	---	0.71	0.12	---	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
	19-Aug-2017		2.5	---	0.19	0.028	---	---	---	---	---	---	---	0.93	---	---	---	---	---	---	---	---	---
	14-Sep-2017		5.6	---	0.040	0.061	---	---	---	---	---	---	---	18	---	---	---	---	---	---	---	---	---
RB-MW17-06	16-Jun-2017	**W-CAT-4**	16	---	0.11	< 0.010	---	---	---	---	---	---	---	0.16	---	---	---	---	---	---	---	---	---
	15-Jul-2017		19	---	0.072	0.011	---	---	---	---	---	---	---	0.19	---	---	---	---	---	---	---	---	---
	19-Aug-2017		10	---	0.012	< 0.010	---	---	---	---	---	---	---	32	---	---	---	---	---	---	---	---	---
	14-Sep-2017		7.7	---	< 0.010	< 0.010	---	---	---	---	---	---	---	78	---	---	---	---	---	---	---	---	---
	14-Oct-2017		7.7	---	< 0.010	< 0.010	---	---	---	---	---	---	---	61	---	---	---	---	---	---	---	---	---
	23-Nov-2017		7.4	---	0.011	< 0.010	---	---	---	---	---	---	---	76	---	---	---	---	---	---	---	---	---
RB-MW17-07	16-Jun-2017	**W-CAT-4**	97	---	< 0.010	< 0.010	---	---	---	---	---	---	---	11	---	---	---	---	---	---	---	---	---
	15-Jul-2017		86	---	< 0.010	< 0.010	---	---	---	---	---	---	---	0.76	---	---	---	---	---	---	---	---	---
	19-Aug-2017		38	---	0.11	0.012	---	---	---	---	---	---	---	0.077	---	---	---	---	---	---	---	---	---
	14-Sep-2017		36	---	0.12	< 0.010	---	---	---	---	---	---	---	0.077	---	---	---	---	---	---	---	---	---
	14-Oct-2017		44	---	0.023	< 0.010	---	---	---	---	---	---	---	6.3	---	---	---	---	---	---	---	---	---
	23-Nov-2017		87	---	< 0.010	< 0.010	---	---	---	---	---	---	---	19	---	---	---	---	---	---	---	---	---
RB-MW17-08	16-Jun-2017	**W-CAT-4**	77	---	0.015	< 0.010	---	---	---	---	---	---	---	9.7	---	---	---	---	---	---	---	---	---
	15-Jul-2017		76	---	0.017	< 0.010	---	---	---	---	---	---	---	1.9	---	---	---	---	---	---	---	---	---
	19-Aug-2017		56	---	< 0.010	< 0.010	---	---	---	---	---	---	---	23	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2017		55	---	< 0.010	< 0.010	---	---	---	---	---	---	---	23	---	---	---	---	---	---	---	---	---
	14-Sep-2017		39	---	< 0.010	< 0.010	---	---	---	---	---	---	---	26	---	---	---	---	---	---	---	---	---
	14-Oct-2017		44	---	< 0.010	< 0.010	---	---	---	---	---	---	---	19	---	---	---	---	---	---	---	---	---
	23-Nov-2017		62	---	< 0.010	< 0.010	---	---	---	---	---	---	---	26	---	---	---	---	---	---	---	---	---
RB-MW17-09	16-Jun-2017	**W-CAT-4**	46	---	0.032	< 0.010	---	---	---	---	---	---	---	20	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Jun-2017		46	---	0.032	< 0.010	---	---	---	---	---	---	---	20	---	---	---	---	---	---	---	---	---
	15-Jul-2017		47	---	< 0.010	< 0.010	---	---	---	---	---	---	---	1.7	---	---	---	---	---	---	---	---	---
	19-Aug-2017		43	---	< 0.010	< 0.010	---	---	---	---	---	---	---	22	---	---	---	---	---	---	---	---	---
	14-Sep-2017		43	---	< 0.010	< 0.010	---	---	---	---	---	---	---	27	---	---	---	---	---	---	---	---	---
	14-Oct-2017		36	---	< 0.010	< 0.010	---	---	---	---	---	---	---	17	---	---	---	---	---	---	---	---	---
	23-Nov-2017		26	---	< 0.010	< 0.010	---	---	---	---	---	---	---	40	---	---	---	---	---	---	---	---	---
RB-MW17-10	23-Nov-2017	**W-CAT-4**	52	---	< 0.010	< 0.010	---	---	---	---	---	---	---	28	---	---	---	---	---	---	---	---	---
RB-MW17-11	24-Jun-2018	**W-CAT-4**	31	---	< 0.010	< 0.010	---	---	---	---	---	---	---	4.2	---	---	---	---	---	---	---	---	---
PW-18-1	18-Jul-2018	**W-CAT-4**	22	---	< 0.010	< 0.010	---	0.029	0.0010	0.12	0.000029	< 0.0010	0.00082	0.23	< 0.00020	---	0.00047	0.035	< 0.00020	< 0.00010	< 0.00020	0.0068	0.014
(Duplicate)	18-Jul-2018		22	---	< 0.010	< 0.010	---	0.048	0.0016	0.12	0.00030	< 0.0010	0.00097	0.24	0.00020	---	0.00072	0.035	0.00035	< 0.00010	< 0.00020	0.0065	0.014

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-4			**280**	**8.7**	**0.2**	**0.06**	**20**	**0.07**	**0.031**	**1.13**	**0.0014**	**0.007**	**0.012**	**25**	**0.042**	**0.00005**	**0.020**	**0.02**	**0.001**	**0.0001**	**0.0012**	**0.411**	**1.40**
PW-18-2	18-Jul-2018	**W-CAT-4**	130	---	< 0.010	< 0.010	---	< 0.0030	0.00076	0.052	0.00024	< 0.0010	0.0034	0.072	< 0.00020	---	0.0045	0.0069	0.00035	< 0.00010	< 0.00020	0.0069	0.010
PW-18-3	18-Jul-2018	**W-CAT-4**	180	---	< 0.010	< 0.010	---	0.065	0.00073	0.048	0.00037	< 0.0010	0.0028	0.18	< 0.00020	---	0.0018	0.011	0.00035	< 0.00010	< 0.00020	0.0033	0.012
PW-18-4	18-Jul-2018	**W-CAT-4**	130	---	< 0.10	**< 0.10**	---	0.041	0.0064	0.021	0.00021	0.0019	0.00074	0.48	0.00064	---	**0.14**	0.015	**0.0011**	< 0.00010	0.00046	0.0048	0.0082
PW-18-5	18-Jul-2018	**W-CAT-4**	36	---	< 0.10	**< 0.10**	---	0.0037	0.0063	0.084	< 0.000020	< 0.0010	0.00033	7.6	< 0.00020	---	**0.045**	0.0056	0.00037	< 0.00010	0.00033	0.0042	0.0065
PW-18-6	18-Jul-2018	**W-CAT-4**	8.0	---	< 0.10	**< 0.10**	---	0.0056	0.0018	0.040	0.00078	< 0.0010	0.0021	< 0.060	< 0.00020	---	0.011	0.0068	0.00030	< 0.00010	0.00038	0.011	0.015
PW-18-7	19-Jul-2018	**W-CAT-4**	10	---	0.044	< 0.010	---	< 0.0030	0.00034	0.021	0.000075	< 0.0010	0.0018	< 0.060	< 0.00020	---	0.0051	0.0037	0.00039	< 0.00010	< 0.00020	0.0036	0.0030
PW-18-8	19-Jul-2018	**W-CAT-4**	10	---	0.044	< 0.010	---	0.0056	0.00046	0.020	0.000084	< 0.0010	0.0016	< 0.060	< 0.00020	---	0.0049	0.0045	0.00037	< 0.00010	< 0.00020	0.0022	< 0.0030
PW-18-9	19-Jul-2018	**W-CAT-4**	88	---	< 0.010	< 0.010	---	0.017	0.0033	0.083	< 0.000020	< 0.0010	0.00059	0.88	< 0.00020	---	**0.021**	**0.021**	0.00058	< 0.00010	< 0.00020	0.0072	0.0085
PW-18-10	19-Jul-2018	**W-CAT-4**	130	---	< 0.50	**< 0.50**	---	0.0041	0.0073	0.43	< 0.000020	< 0.0010	< 0.00020	21	< 0.00020	---	0.020	0.0014	0.00039	< 0.00010	< 0.00020	0.0017	< 0.0030
PW-18-11	19-Jul-2018	**W-CAT-4**	250	---	< 0.010	< 0.010	---	0.040	0.0012	0.11	0.000057	< 0.0010	0.0010	0.26	< 0.00020	---	0.0024	0.013	0.00023	< 0.00010	< 0.00020	0.0080	0.014
PW-18-12	19-Jul-2018	**W-CAT-4**	11	---	0.042	< 0.010	---	**0.20**	0.0012	< 0.020	0.000089	< 0.0010	0.0026	0.87	0.0012	---	0.0016	0.0043	0.00033	< 0.00010	< 0.00020	0.00095	0.0084

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background
W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background

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Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC: Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	PAH: Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**	**0.0034**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.00005**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**	**0.0002**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**	**0.00042**	**---**	**0.000024**	**0.000009**	**0.0000075**	**0.00006**	**0.0018**	**0.0031**	**0.00172**	**0.00020**	**---**
NWR 93-10-6	07-Sep-1997	**W-CAT-4**	0.030	< 0.0005	0.012	0.0123	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		0.0075	**< 0.0050**	< 0.0050	< 0.0050	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2001		< 0.0050	**< 0.0050**	< 0.0050	< 0.01	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2002		< 0.0050	**< 0.0050**	< 0.0050	< 0.0050	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		0.0047	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-May-2015		0.12	< 0.00040	0.00087	0.025	< 0.1	1.0	0.00016	---	< 0.000010	< 0.0000085	< 0.0000075	0.000011	0.00046	0.01	0.00018	0.000032	---
	15-Aug-2016		0.0076	< 0.00040	< 0.00040	0.0022	< 0.1	0.21	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00011	0.0015	< 0.000050	< 0.000020	---
NWR 93-12-7	07-Sep-1997	**W-CAT-4**	< 0.0005	0.0007	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Sep-1999		< 0.0050	**< 0.0050**	< 0.0050	< 0.0050	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		< 0.0050	**< 0.0050**	< 0.0050	< 0.0050	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2001		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR 93-9-7	17-Sep-2000	**W-CAT-4**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2001		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2002		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR 98-13-21	17-Sep-2000	**W-CAT-3**	0.011	< 0.0005	0.0010	0.01	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2001		0.0033	< 0.0005	< 0.0005	(0.0047-0.0052)	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		0.0107	< 0.0005	< 0.0005	0.0048	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	26-Aug-2003		0.0087	< 0.0005	< 0.0005	(0.0042-0.0047)	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		0.0085	< 0.0005	< 0.0005	0.0030	0.4	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		0.0073	< 0.0005	< 0.0005	< 0.0015	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2007		0.0036	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		0.0074	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2009		0.013	< 0.0004	< 0.0004	< 0.0008	0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	17-Aug-2009		0.013	< 0.0004	< 0.0004	< 0.0008	0.12	0.2	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2010		0.028	< 0.0004	< 0.0004	< 0.0008	0.13	0.2	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Aug-2010		0.028	< 0.0004	< 0.0004	< 0.0008	0.14	0.2	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2011		0.053	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	17-Aug-2011		0.062	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2012		0.045	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.10	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2012		0.051	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2013		0.052	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.25	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Aug-2013		0.051	< 0.00040	< 0.00040	< 0.00080	0.1	0.17	---	---	---	---	---	---	---	---	---	---	---
	09-May-2014		0.036	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.28	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00020	0.00058	0.00069	0.000033	---
	01-Aug-2014		0.033	< 0.00040	< 0.00040	< 0.00080	0.17	0.11	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	0.000019	0.00023	0.00077	0.00057	0.000048	---
(Duplicate)	01-Aug-2014		0.031	< 0.00040	< 0.00040	< 0.00080	0.14	0.12	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00010	0.00032	0.00030	0.000022	---
	31-May-2015		0.049	< 0.00040	< 0.00040	< 0.00080	0.18	0.12	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000067	0.00097	0.000096	< 0.000020	---
	04-Jul-2015		0.026	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.17	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	04-Jul-2015		0.026	< 0.00040	< 0.00040	< 0.00080	0.13	0.15	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.12	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00013	0.00045	0.00044	< 0.000020	---
	25-Nov-2015		0.044	< 0.00040	< 0.00040	< 0.00080	0.1	0.18	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000067	0.00019	0.00021	< 0.000020	---
	12-Mar-2016		0.058	0.00044	< 0.00040	< 0.00080	0.71	0.22	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	0.000011	0.000092	0.00029	0.00022	0.000025	---
(Duplicate)	12-Mar-2016		0.043	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.95	---	---	---	---	---	---	---	---	---	---	---
	05-Aug-2016		0.015	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.20	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000090	0.00020	0.00035	0.000025	---
(Duplicate)	05-Aug-2016		0.015	0.00043	< 0.00040	< 0.00080	< 0.1	0.15	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000073	0.00015	0.00029	0.000021	---
	02-Nov-2016		0.0068	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.29	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00010	0.00015	0.00030	< 0.000020	---
	15-Aug-2017		0.024	< 0.00040	< 0.00040	< 0.00080	0.23	0.18	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	0.000021	0.000057	0.00028	0.00021	< 0.000020	< 0.00020
	20-Jul-2018		---	---	---	---	---	---	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00012	0.0012	0.00023	< 0.000020	< 0.00020
(Duplicate)	20-Jul-2018		---	---	---	---	---	---	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00012	0.0011	0.00023	< 0.000020	< 0.00020
NWR 98-20-3	09-Sep-1998	**W-CAT-4**	3.7	2.8	0.16	0.68	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2001		3.2	2.8	0.15	0.69	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR 98-23-21	10-Sep-1998	**W-CAT-3**	0.011	0.011	0.0075	0.046	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Sep-1999		0.33	**< 0.0050**	< 0.0050	0.0060	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2001		0.2	0.026	0.033	0.317	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		0.29	0.0194	0.0245	0.423	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		0.27	0.0019	0.0098	0.063	< 0.1	40	---	---	---	---	---	---	---	---	---	---	---
	05-Jul-2015		0.44	0.00060	0.0030	0.053	0.18	2.6	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	05-Jul-2015		0.44	0.00062	0.0038	0.045	0.25	2.9	---	---	---	---	---	---	---	---	---	---	---
NWR 99-19-3	15-Sep-1999	**W-CAT-4**	0.55	**< 0.0050**	< 0.0050	0.063	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		1.4	**< 0.01**	0.024	0.2	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2001		1.4	**< 0.0050**	0.034	0.168	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	26-Aug-2001		1.7	**< 0.01**	0.037	0.163	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR 99-21-3	15-Sep-1999	**W-CAT-4**	< 0.0050	**< 0.0050**	< 0.0050	0.015	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		< 0.0005	< 0.0005	< 0.0005	0.017	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR 99-22-4	26-Aug-2001	**W-CAT-4**	4	0.38	0.3	2.09	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		4.33	0.921	0.135	1.69	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		3.5	0.203	0.132	1.47	13.8	52.6	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		0.155	**< 0.005**	0.007	0.0417	0.46	4.7	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2006		0.479	**< 0.005**	< 0.005	0.031	0.335	3.0	---	---	---	---	---	---	---	---	---	---	---
NWR 01-29-7	26-Aug-2001	**W-CAT-4**	3.7	0.012	0.014	1.21	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Oct-2011		0.21	0.0008	< 0.0004	0.17	11	250	---	---	---	---	---	---	---	---	---	---	---
	05-Jul-2015		0.17	**< 0.0040**	< 0.0040	0.16	3.8	29	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	05-Jul-2015		0.13	0.00047	0.0012	0.15	7.8	200	---	---	---	---	---	---	---	---	---	---	---
NWR 01-30-4	20-Aug-2006	**W-CAT-4**	0.0594	< 0.0005	< 0.0005	0.057	0.298	0.6	---	---	---	---	---	---	---	---	---	---	---
NWR 01-31-4	26-Aug-2001	**W-CAT-4**	0.12	**< 0.0050**	0.014	0.32	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2002		0.049	**< 0.01**	< 0.01	0.11	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		0.109	**< 0.0050**	0.0098	0.163	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		0.0968	0.0010	0.0043	0.2522	1.9	103	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		0.0141	< 0.0005	0.0025	0.0752	0.22	0.9	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2006		0.0036	< 0.0005	< 0.0005	0.01	0.296	3.8	---	---	---	---	---	---	---	---	---	---	---
NWR 01-32-4	26-Aug-2001	**W-CAT-4**	0.061	0.0082	0.066	0.44	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2006		0.0797	< 0.0005	0.0015	0.01	0.305	35.0	---	---	---	---	---	---	---	---	---	---	---
NWR 01-33-4	26-Aug-2001	**W-CAT-4**	2.2	1	0.24	1.35	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		2.07	0.35	0.11	1.13	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		2.76	0.0594	0.177	1.12	0.2	14.5	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2006		0.0112	< 0.0005	< 0.0005	0.002	0.409	15.0	---	---	---	---	---	---	---	---	---	---	---
NWR 01-34-2	26-Aug-2001	**W-CAT-4**	0.3	**< 0.0050**	< 0.0050	0.0846	---	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2002		0.072	**< 0.0050**	< 0.0050	< 0.0050	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		0.328	**< 0.0050**	< 0.0050	0.170	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		0.379	**< 0.0050**	< 0.0050	0.0909	0.1	0.9	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		0.0614	< 0.0005	0.0032	0.0289	0.39	0.9	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	0.8	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	0.7	---	---	---	---	---	---	---	---	---	---	---
NWR 02-12-7	21-Aug-2002	**W-CAT-4**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2004		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		< 0.0005	< 0.0005	< 0.0005	< 0.0015	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.2	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2009		< 0.0004	0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---	---
NWR 03-35-5	25-Aug-2005	**W-CAT-4**	1.59	**< 0.05**	< 0.05	0.752	1.3	4.6	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2006		0.417	**< 0.005**	< 0.005	0.066	1.48	7.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2007		0.118	< 0.0004	< 0.0004	0.0108	0.519	4.1	---	---	---	---	---	---	---	---	---	---	---
NWR 03-37-4	23-Aug-2004	**W-CAT-4**	0.955	**< 0.0050**	< 0.0050	0.393	< 0.1	0.6	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		0.206	**< 0.005**	< 0.005	(0.012-0.017)	0.68	7.7	---	---	---	---	---	---	---	---	---	---	---
NWR 03-38-3	26-Aug-2003	**W-CAT-4**	0.0027	< 0.0005	< 0.0005	(0.0131-0.0136)	---	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		< 0.0005	< 0.0005	< 0.0005	< 0.001	0.1	0.3	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		< 0.0005	< 0.0005	< 0.0005	< 0.0015	< 0.1	0.3	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---	---

Advisian
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Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH										
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**	**0.0034**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.00005**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**	**0.0002**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**	**0.00042**	**---**	**0.000024**	**0.000009**	**0.0000075**	**0.00006**	**0.0018**	**0.0031**	**0.00172**	**0.00020**	**---**
NWR 03-39-4	26-Aug-2003	**W-CAT-4**	0.0006	< 0.0005	< 0.0005	(0.0027-0.0032)	---	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		0.0013	< 0.0005	< 0.0005	(0.0023-0.0028)	0.2	0.3	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---	---
NWR 03-40-2	26-Aug-2003	**W-CAT-4**	3.18	3.47	0.552	2.31	---	---	---	---	---	---	---	---	---	---	---	---	---
NWR 03-41-17	26-Aug-2003	**W-CAT-3**	0.0144	< 0.0005	0.0005	0.0857	---	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2006		0.0142	< 0.0005	< 0.0005	0.002	0.229	129	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2007		0.0170	< 0.0004	< 0.0004	0.0029	2.54	81.2	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		0.023	< 0.0004	< 0.0004	0.0086	0.85	28.5	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2009		0.04	< 0.0004	< 0.0004	0.0039	0.44	5.9	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2010		0.095	< 0.0004	< 0.0004	0.0042	0.16	2.9	---	---	---	---	---	---	---	---	---	---	---
NWR 03-42-19	26-Aug-2003	**W-CAT-3**	1.05	0.132	< 0.0500	0.327	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		0.173	**< 0.0050**	0.0089	0.1234	0.2	12.2	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		0.0074	0.0005	< 0.0005	0.0016	0.14	2.2	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2006		0.0056	0.0026	< 0.0005	0.052	0.748	24.6	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2007		0.0181	< 0.0004	< 0.0004	0.0768	0.728	3.2	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		0.0030	< 0.0004	< 0.0004	0.0081	2	17.0	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2009		0.46	0.014	0.011	0.25	2.9	14.3	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2010		0.07	0.0021	0.0032	0.086	0.28	2.9	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2011		0.13	0.0090	0.013	0.23	0.34	13	---	---	---	---	---	---	---	---	---	---	---
NWR 03-43-20	25-Aug-2005	**W-CAT-3**	0.522	0.162	0.0230	0.56	1.5	9.9	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	25-Aug-2005		0.514	0.162	0.0240	0.557	3.6	30.9	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2006		0.0353	0.0011	< 0.0005	0.019	0.733	6.2	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2007		0.695	0.117	0.0349	0.592	2.67	22.3	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		0.016	< 0.0004	0.0029	0.058	0.46	2.7	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2009		0.67	0.034	0.023	0.26	0.97	2.1	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2010		0.044	< 0.0004	0.0005	0.011	< 0.1	4.1	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2011		0.058	0.0007	0.0012	0.02	< 0.1	0.9	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2012		0.76	0.0035	0.018	0.4	1.7	0.80	---	---	---	---	---	---	---	---	---	---	---
NWR 09-1-2	17-Aug-2009	**W-CAT-4**	0.019	0.016	0.014	0.079	0.66	4.2	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000040	0.00089	0.0050	0.0015	0.000058	---
NWR 09-1-20	25-Oct-2011	**W-CAT-3**	0.0055	< 0.0004	< 0.0004	0.0025	0.57	45	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		0.023	< 0.00040	< 0.00040	< 0.00080	0.88	1.4	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013		0.024	< 0.00040	< 0.00040	< 0.00080	0.58	11	---	---	---	---	---	---	---	---	---	---	---
	08-May-2014		0.098	< 0.00040	< 0.00040	0.0037	0.21	2.6	0.00013	---	< 0.000010	< 0.000019	< 0.0000075	0.000026	0.00048	0.0025	0.0011	0.00011	---
	01-Aug-2014		0.073	< 0.00040	< 0.00040	0.0028	0.41	27	< 0.00033	---	< 0.000010	< 0.000074	< 0.000020	0.000058	0.0012	0.0038	0.0032	0.00030	---
	31-May-2015		0.059	< 0.00040	< 0.00040	0.0028	0.33	7.6	0.00096	---	< 0.000010	0.000094	0.000077	0.000069	0.0017	0.0066	0.0039	0.00018	---
	05-Jul-2015		0.065	< 0.00040	< 0.00040	0.0026	0.17	4.9	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	05-Jul-2015		0.063	< 0.00040	< 0.00040	0.0027	0.1	5.1	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2015		0.035	< 0.00040	< 0.00040	0.0018	0.34	5.3	< 0.00010	---	< 0.000010	0.000031	0.000037	0.000030	< 0.000050	0.0043	0.0012	0.000070	---
	25-Nov-2015		0.038	< 0.00040	< 0.00040	0.0024	0.16	20	0.00061	---	< 0.000010	0.00011	0.000029	0.000089	0.0022	0.0058	0.0047	0.00049	---
(Duplicate)	25-Nov-2015		0.041	< 0.00040	< 0.00040	0.0024	< 0.1	0.53	---	---	---	---	---	---	---	---	---	---	---
	12-Mar-2016		0.039	< 0.00040	< 0.00040	0.0014	0.54	5.6	0.00021	---	< 0.000010	0.000055	< 0.0000075	< 0.000010	0.00068	0.0034	0.0012	0.00015	---
	05-Aug-2016		< 0.0040	**< 0.0040**	< 0.0040	< 0.0080	3.9	130	0.00016	---	< 0.000010	0.000028	< 0.0000075	0.000021	0.00062	0.0037	0.0012	0.00011	---
	03-Nov-2016		0.17	< 0.00040	< 0.00040	0.0071	< 0.10	47	< 0.00027	---	0.000034	< 0.000023	< 0.000020	< 0.000027	0.00046	0.0019	0.00073	0.00016	---
	13-Aug-2017		0.0076	< 0.00040	< 0.00040	< 0.00080	0.34	1.2	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00022	0.0020	0.00034	< 0.000020	< 0.00020
	22-Jul-2018		---	---	---	---	---	---	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00026	0.0015	0.00040	< 0.000020	< 0.00020
NWR 09-2-2	17-Aug-2009	**W-CAT-4**	0.43	0.0012	0.014	0.43	2.1	37.2	0.0013	---	**< 0.00010**	0.00010	0.00017	**< 0.00040**	0.0078	0.099	0.0085	0.00031	---
NWR 09-2-26	20-Aug-2010	**W-CAT-3**	0.06	0.0016	0.0008	0.0031	0.26	0.9	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2011		0.043	0.0004	< 0.0004	< 0.0008	0.29	4.4	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		0.084	0.0011	0.0033	0.0032	0.31	10	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013		0.96	0.0021	0.29	0.65	2.6	3.1	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013		0.97	0.0022	0.28	0.65	3.1	3.0	---	---	---	---	---	---	---	---	---	---	---
	08-May-2014		0.66	0.00043	0.19	0.42	1.5	1.6	0.00019	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00052	0.055	0.00042	0.000024	---
	01-Aug-2014		0.28	0.00091	0.027	0.14	3	4.7	---	---	---	---	---	---	---	---	---	---	---
	01-Aug-2014		0.39	0.0074	0.026	0.19	0.8	5.0	---	---	---	---	---	---	---	---	---	---	---
	01-Jun-2015		0.65	0.027	0.018	0.29	2.3	1.7	0.00018	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00029	0.02	0.00022	< 0.000020	---
	04-Jul-2015		0.83	0.074	0.00065	0.36	2.4	1.8	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	04-Jul-2015		0.79	0.068	< 0.00040	0.34	2.1	1.6	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2015		0.15	0.0046	< 0.00040	0.032	0.33	1.8	---	---	---	---	---	---	---	---	---	---	---
	25-Nov-2015		0.061	0.00060	< 0.00040	0.0034	0.17	0.16	< 0.00010	---	0.000011	< 0.0000085	0.0000087	0.000014	0.000060	0.0014	0.00013	0.000023	---
	12-Mar-2016		0.52	0.015	0.00098	0.14	15	32	0.00011	---	**< 0.000034**	0.000032	0.000017	0.000034	0.00028	0.0090	0.00038	0.00010	---
	05-Aug-2016		0.56	0.0080	0.032	0.31	1.3	2.5	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	05-Aug-2016		0.6	0.0086	0.039	0.34	1.6	1.6	---	---	---	---	---	---	---	---	---	---	---
	03-Nov-2016		0.50	0.0044	0.025	0.26	1.1	1.2	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00012	0.017	0.000074	< 0.000020	---
(Duplicate)	03-Nov-2016		0.56	0.0059	0.023	0.29	1.3	1.3	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00012	0.021	0.000073	< 0.000020	---
	13-Aug-2017		0.56	0.0077	0.00091	0.22	2.8	2.5	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	13-Aug-2017		0.35	0.0045	0.0012	0.12	1.3	2.4	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2018		0.12	0.0011	< 0.00040	0.035	0.34	2.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Jul-2018		0.13	0.0011	< 0.00040	0.036	0.42	2.1	---	---	---	---	---	---	---	---	---	---	---
NWR 09-3-20	13-Sep-2009	**W-CAT-3**	0.0076	0.0033	0.0006	0.01	0.22	0.2	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2010		0.0067	0.0007	< 0.0004	0.0008	0.3	0.3	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2011		0.048	0.0014	0.0004	0.0021	0.18	0.3	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2012		0.033	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.13	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2013		0.0095	0.00079	< 0.00040	< 0.00080	< 0.1	0.27	---	---	---	---	---	---	---	---	---	---	---
	11-Oct-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.15	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00014	0.00035	0.000050	< 0.000020	---
	08-May-2014		0.0032	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000070	< 0.00010	0.00012	< 0.000020	---
	01-Aug-2014		0.0026	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.26	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000078	0.00019	0.000086	< 0.000020	---
	31-May-2015		0.0065	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.12	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000059	0.00028	0.000083	< 0.000020	---
	04-Jul-2015		0.0011	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.22	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	04-Jul-2015		0.00077	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.18	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		0.0025	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.18	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000073	0.00019	0.00015	0.000024	---
	25-Nov-2015		0.0028	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000056	< 0.00010	0.000086	< 0.000020	---
	12-Mar-2016		0.0019	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.11	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000065	0.00015	0.00011	< 0.000020	---
	05-Aug-2016		---	---	---	---	---	---	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000058	< 0.00010	0.00012	< 0.000020	---
	15-Aug-2017		---	---	---	---	---	---	< 0.00010	< 0.000050	0.000012	< 0.0000085	< 0.0000075	0.000047	0.000064	0.00038	0.00015	0.000038	< 0.00020
	20-Jul-2018		---	---	---	---	---	---	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	0.000015	0.000056	0.00017	0.00011	< 0.000020	< 0.00020
NWR 09-4-17	13-Sep-2009	**W-CAT-3**	0.014	0.0019	< 0.0004	0.013	0.53	5.4	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2010		0.0010	< 0.0004	< 0.0004	< 0.0008	< 0.1	1.8	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		0.0035	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013		0.017	< 0.00040	< 0.00040	0.0012	< 0.1	0.27	---	---	---	---	---	---	---	---	---	---	---
	08-May-2014		0.0030	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	---
	01-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.20	---	---	---	---	---	---	---	---	---	---	---
	01-Jun-2015		0.0013	< 0.00040	< 0.00040	0.0022	< 0.1	0.22	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000071	0.00057	0.000092	< 0.000020	---
	04-Jul-2015		0.0013	< 0.00040	< 0.00040	0.0017	< 0.1	0.23	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	04-Jul-2015		0.0014	< 0.00040	< 0.00040	0.0018	< 0.1	0.26	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2015		0.0020	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.21	---	---	---	---	---	---	---	---	---	---	---
	25-Nov-2015		0.0041	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	---
	12-Mar-2016		0.0028	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.20	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00013	< 0.000050	< 0.000020	---
	03-Nov-2016		0.0041	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.15	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	0.000057	< 0.000020	---
NWR 09-4-5	17-Aug-2009	**W-CAT-3**	0.19	0.0013	0.0045	0.19	1.7	7.8	0.00082	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000040	0.0040	0.016	0.0058	0.00019	---
	21-Aug-2010		0.11	< 0.0004	0.0028	0.012	1	10.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2011		0.34	0.0007	0.0008	0.025	0.7	18	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		0.13	0.0015	0.00093	0.0074	0.46	2.9	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2013		0.44	0.0026	0.0013	0.033	1.1	12	---	---	---	---	---	---	---	---	---	---	---
	11-Oct-2013		0.072	0.00067	0.0016	0.0036	0.49	1.2	0.00018	---	< 0.000010	< 0.000018	< 0.0000075	0.000035	0.00088	0.0023	0.00072	0.00014	---
	01-Aug-2014		0.026	< 0.00040	0.00055	0.0039	0.74	15	< 0.00010	---	< 0.000010	< 0.000031	< 0.0000075	0.000015	0.00017	0.00079	0.00024	< 0.00015	---
	31-May-2015		0.0070	0.00043	< 0.00040	0.0023	0.19	3.1	0.00022	---	< 0.000010	0.000031	0.000018	0.000026	0.00027	0.00068	0.00014	0.00011	---
	09-Aug-2015		0.25	0.0012	0.00078	0.036	0.28	12	0.00021	---	0.000086	0.000095	< 0.0000075	0.00025	0.00071	0.0015	0.00056	0.00057	---
	25-Nov-2015		0.15	0.00065	0.0012	0.025	0.56	11	0.00013	---	< 0.000010	0.000079	< 0.0000075	< 0.000010	0.00052	0.0017	0.00053	0.00047	---
	05-Aug-2016		0.48	0.0015	0.0022	0.04	0.69	13	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00020	0.0015	0.00011	0.000024	---
	03-Nov-2016		0.060	0.00070	0.00055	0.0047	< 0.10	220	---	---	---	---	---	---	---	---	---	---	---
	15-Mar-2017		0.013	< 0.00040	0.0012	0.0038	0.47	---	---	---	---	---	---	---	---	---	---	---	---
	11-Apr-2017		0.012	< 0.00040	0.00051	0.0095	0.74	61	---	---	---	---	---	---	---	---	---	---	---
	16-Jun-2017		0.021	< 0.00040	< 0.00040	0.0032	0.51	3.4	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		0.33	0.00071	0.00095	0.034	0.55	3.5	---	---	---	---	---	---	---	---	---	---	---

Advisian
WorleyParsons Group

Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH										
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**	**0.0034**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.00005**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**	**0.0002**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**	**0.00042**	**---**	**0.000024**	**0.000009**	**0.0000075**	**0.00006**	**0.0018**	**0.0031**	**0.00172**	**0.00020**	**---**
	15-Aug-2017		0.54	0.0015	0.0029	0.063	0.70	1.2	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000061	0.00074	< 0.000050	0.000024	< 0.00020
	14-Sep-2017		0.43	0.0020	0.0021	0.059	0.94	6.5	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		0.26	0.0017	0.0017	0.046	0.80	4.7	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		0.15	0.015	0.0017	0.056	1.0	3.4	---	---	---	---	---	---	---	---	---	---	---
NWR 09-4-5 (cont'd)	20-Dec-2017		0.14	0.0040	0.0031	0.080	3.0	5.4	---	---	---	---	---	---	---	---	---	---	---
	17-Jan-2018		0.059	0.0099	0.0021	0.038	1.6	8.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	17-Jan-2018		0.054	0.011	0.0023	0.042	1.6	9.3	---	---	---	---	---	---	---	---	---	---	---
	13-Feb-2018		0.051	0.039	0.0015	0.029	8.5	6.2	---	---	---	---	---	---	---	---	---	---	---
	21-Mar-2018		0.036	0.014	0.00077	0.011	1.9	3.5	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Mar-2018		0.034	0.012	0.00084	0.0079	0.80	3.6	---	---	---	---	---	---	---	---	---	---	---
	07-Apr-2018		0.024	0.0092	0.00065	0.0095	0.48	6.6	---	---	---	---	---	---	---	---	---	---	---
	02-May-2018		0.020	0.0027	< 0.00040	0.0059	1.0	3.5	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2018		0.12	0.0026	0.00052	0.0066	0.95	4.3	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2018		0.30	0.0019	0.00078	0.032	0.59	1.1	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000084	0.0013	0.000054	0.000029	< 0.00020
	12-Aug-2018		0.30	0.0041	0.00099	0.046	0.57	1.5	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2018		0.38	0.0011	0.0019	0.097	0.90	4.2	---	---	---	---	---	---	---	---	---	---	---
	16-Oct-2018		0.32	0.0046	0.0021	0.075	0.38	3.7	---	---	---	---	---	---	---	---	---	---	---
NWR 09-5-19	13-Sep-2009	W-CAT-3	0.1	< 0.0004	< 0.0004	0.023	0.42	0.3	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2010		0.064	< 0.0004	< 0.0004	0.017	0.23	0.4	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2011		0.095	< 0.0004	< 0.0004	0.0097	0.17	0.2	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	18-Aug-2011		0.029	< 0.0004	< 0.0004	0.0031	< 0.1	0.5	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		0.085	< 0.00040	< 0.00040	0.0093	0.21	< 0.10	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Aug-2012		0.091	< 0.00040	< 0.00040	0.0095	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2013		0.012	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.19	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Aug-2013		0.012	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.19	---	---	---	---	---	---	---	---	---	---	---
	08-May-2014		0.021	< 0.00040	< 0.00040	0.00098	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000069	0.00047	0.000082	< 0.000020	---
	01-Aug-2014		0.012	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.15	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	01-Aug-2014		0.013	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.12	---	---	---	---	---	---	---	---	---	---	---
	31-May-2015		0.038	< 0.00040	< 0.00040	0.0030	< 0.1	0.26	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00016	0.0026	0.00020	< 0.000020	---
	08-Aug-2015		0.021	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	08-Aug-2015		0.021	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.15	---	---	---	---	---	---	---	---	---	---	---
	25-Nov-2015		0.0012	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00015	< 0.000050	< 0.000020	---
	12-Mar-2016		0.0038	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.19	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	0.000012	0.000069	0.00028	0.00017	0.000025	---
	05-Aug-2016		0.0056	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
NWR-OBS33	01-Oct-2001	W-CAT-3	0.18	**< 0.0050**	< 0.0050	0.085	---	---	0.00031	0.00015	< 0.00001	< 0.00001	< 0.00001	< 0.00001	0.00095	0.0094	0.0010	< 0.00002	---
	08-May-2014		0.051	< 0.00040	< 0.00040	0.0032	7.6	230	**< 0.01**	---	**< 0.0010**	**< 0.0021**	0.00094	0.0023	0.048	0.049	0.091	0.012	---
	31-May-2015		0.13	< 0.00040	0.00054	0.021	0.59	480	---	---	---	---	---	---	---	---	---	---	---
	25-Nov-2015		0.063	< 0.00040	< 0.00040	0.0057	0.95	390	0.0044	---	0.0040	0.00087	0.00019	0.00095	0.021	0.028	0.04	0.0067	---
	02-Nov-2016		0.11	0.00045	0.00058	0.020	0.17	500	< 0.0050	---	0.0018	**< 0.00043**	**< 0.00038**	**< 0.00050**	0.012	0.026	0.026	0.0031	---
NWR-OBS34	01-Oct-2001	W-CAT-3	0.016	0.0006	< 0.0005	0.0043	---	---	0.00002	< 0.00005	< 0.00001	< 0.00001	< 0.00001	< 0.00001	0.00003	< 0.00017	0.00007	< 0.00001	---
NWR-OBS37	01-Oct-2001	W-CAT-3	0.064	0.016	0.01	0.16	---	---	< 0.00027	0.00022	< 0.00001	< 0.00002	< 0.00001	< 0.00001	0.00055	0.0026	0.00083	< 0.00003	---
	24-Oct-2011		0.079	0.0005	0.0018	0.06	1.3	24	---	---	---	---	---	---	---	---	---	---	---
RB-OBS28	01-Oct-2001	W-CAT-3	2.89	0.18	0.06	1.57	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Oct-2011		0.52	0.037	0.085	0.67	22	170	---	---	---	---	---	---	---	---	---	---	---
RB-OBS32	01-Oct-2001	W-CAT-3	0.52	**< 0.04**	< 0.04	0.69	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		0.0220	**< 0.0050**	0.0097	0.237	23.9	783	---	---	---	---	---	---	---	---	---	---	---
	24-Oct-2011		0.017	< 0.0004	0.0013	0.012	1.3	75	---	---	---	---	---	---	---	---	---	---	---
	31-May-2015		0.0034	< 0.00040	< 0.00040	< 0.00080	2.4	950	0.12	---	**< 0.0010**	0.0065	0.01	0.012	0.19	0.1	0.37	0.027	---
RB-OBS33	12-Mar-2016	W-CAT-3	0.12	0.00047	0.00083	0.025	3.3	80	0.00067	---	0.00045	0.000089	0.000021	0.00010	0.0015	0.0085	0.0029	0.00052	---
RB-OBS35	01-Oct-2001	W-CAT-3	0.17	0.071	< 0.0050	0.086	---	---	< 0.0017	0.0038	**< 0.00020**	**< 0.00028**	**< 0.00010**	0.00016	0.0028	**< 0.011**	0.0076	0.00072	---
	05-Feb-2003		2.43	0.47	0.123	1.19	19.1	16.8	< 0.0034	< 0.00051	**< 0.00066**	**< 0.00010**	**< 0.00010**	**< 0.00017**	0.0051	0.052	0.0092	**< 0.0012**	**< 0.010**
	24-Oct-2011		0.095	0.014	0.025	0.41	3.7	190	---	---	---	---	---	---	---	---	---	---	---
RB-OBS36	01-Oct-2001	W-CAT-3	0.14	0.052	0.01	0.13	---	---	< 0.00083	< 0.0016	< 0.00001	< 0.00006	< 0.00001	< 0.00005	0.0014	0.0089	0.0029	< 0.00015	---
	24-Oct-2011		0.026	< 0.0004	< 0.0004	0.0029	0.87	31	---	---	---	---	---	---	---	---	---	---	---
RB-OBS38	01-Oct-2001	W-CAT-3	0.018	0.0094	0.0059	0.15	---	---	< 0.0027	0.0017	**< 0.00010**	**< 0.00010**	**< 0.00010**	**< 0.00010**	0.0049	**< 0.012**	0.0060	< 0.00023	---
	05-Feb-2003		0.0041	0.0013	< 0.0005	0.0094	< 0.1	0.2	< 0.00011	< 0.00002	**< 0.00003**	< 0.00001	< 0.00001	< 0.00001	< 0.00028	0.0030	0.00072	0.00007	< 0.00045
	24-Oct-2011		0.03	< 0.0004	< 0.0004	< 0.0008	3	280	---	---	---	---	---	---	---	---	---	---	---
RB-OBS39	05-Feb-2003	W-CAT-3	0.0827	0.0045	0.0024	0.0298	0.3	3.6	0.00047	< 0.00008	**< 0.00021**	< 0.00003	< 0.00001	< 0.00006	0.0022	0.0090	0.0058	0.00044	**< 0.0053**
	24-Oct-2011		0.014	< 0.0004	< 0.0004	0.062	0.52	26	---	---	---	---	---	---	---	---	---	---	---
	31-May-2015		0.064	0.0011	0.0032	0.033	8	420	0.027	---	**< 0.00010**	0.00064	0.00060	0.0034	0.045	0.14	0.11	0.0040	---
RB-OBS-40	21-Aug-2012	W-CAT-4	0.072	0.0044	0.0057	0.034	0.53	13	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Aug-2012		0.072	0.0045	0.0059	0.036	0.47	13	---	---	---	---	---	---	---	---	---	---	---
	11-Oct-2013		0.051	0.0014	0.0083	0.031	0.38	130	0.0016	---	< 0.000010	**< 0.000047**	< 0.0000075	0.00011	0.013	0.024	0.013	0.00047	---
	19-Sep-2014		0.033	0.00042	0.00091	0.0079	0.6	8.2	---	---	---	---	---	---	---	---	---	---	---
RB-OBS-41	21-Aug-2012	W-CAT-4	1.2	< 0.00040	< 0.00040	0.022	< 0.1	0.46	---	---	---	---	---	---	---	---	---	---	---
	11-Oct-2013		0.19	0.00096	0.00094	0.0040	< 0.1	5.8	< 0.00010	---	< 0.000010	**< 0.000037**	< 0.0000075	0.000055	0.00024	0.00039	0.00071	0.00020	---
	19-Sep-2014		0.38	< 0.00040	< 0.00040	0.0011	0.14	1.3	---	---	---	---	---	---	---	---	---	---	---
RB-OBS-42	25-Nov-2015	W-CAT-4	0.0042	< 0.00040	< 0.00040	0.0013	1.6	---	---	---	---	---	---	---	---	---	---	---	---
RB-OBS-44	31-May-2015	W-CAT-4	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.21	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	0.000018	< 0.000050	< 0.00010	< 0.000050	0.00024	---
RB-OBS-45	21-Aug-2012	W-CAT-4	0.19	< 0.00040	0.00086	0.03	0.77	12	---	---	---	---	---	---	---	---	---	---	---
	31-May-2015		0.13	0.0014	0.00065	0.0068	0.33	2.9	0.00015	---	< 0.000010	< 0.0000085	0.0000077	< 0.000010	0.00029	0.0016	0.000075	< 0.000020	---
	25-Nov-2015		0.36	0.00063	0.0013	0.022	0.47	2.9	0.00013	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00039	0.0015	0.00018	0.000020	---
RB-OBS-46	21-Aug-2012	W-CAT-4	0.94	0.0015	0.0033	0.11	2.9	7.7	---	---	---	---	---	---	---	---	---	---	---
	09-May-2014		0.97	0.00093	0.0043	0.089	1.7	46	< 0.0011	---	**< 0.00027**	**< 0.000093**	**< 0.000082**	**< 0.00011**	0.0034	0.0068	0.0019	0.00044	---
	31-May-2015		0.28	0.0070	0.0030	0.084	0.95	110	0.0014	---	0.00063	0.00014	**< 0.000075**	0.00014	0.0072	0.025	0.0070	0.00095	---
	25-Nov-2015		1	0.0014	0.0053	0.2	1.6	170	0.0038	---	**< 0.00010**	0.00026	**< 0.000075**	0.00025	0.013	0.027	0.013	0.0016	---
	15-Aug-2016		0.82	0.0022	0.0046	0.15	2.2	71	0.0011	---	< 0.000010	0.000039	< 0.0000075	0.000055	0.0035	0.011	0.0028	0.00043	---
	15-Mar-2017		0.83	0.0020	0.0068	0.25	38	5200	---	---	---	---	---	---	---	---	---	---	---
	11-Apr-2017		1.3	0.0010	0.0047	0.19	13	1900	---	---	---	---	---	---	---	---	---	---	---
	10-May-2017		0.78	0.0011	0.0021	0.13	1.7	140	---	---	---	---	---	---	---	---	---	---	---
	15-Jun-2017		0.20	0.0011	0.0019	0.051	3.1	40	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		0.28	0.00085	0.0018	0.072	1.5	35	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		0.94	0.00069	0.0032	0.12	6.2	50	---	---	---	---	---	---	---	---	---	---	---
	15-Sep-2017		0.53	0.00079	0.0039	0.12	1.6	18	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		0.79	0.00071	0.0043	0.14	1.9	33	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		0.62	0.00052	0.0037	0.12	11	46	---	---	---	---	---	---	---	---	---	---	---
	20-Dec-2017		0.67	0.00054	0.0022	0.083	6.5	220	---	---	---	---	---	---	---	---	---	---	---
	17-Jan-2018		0.75	< 0.00040	0.0028	0.075	4.1	110	---	---	---	---	---	---	---	---	---	---	---
	13-Feb-2018		0.92	0.00046	0.0044	0.11	7.6	57	---	---	---	---	---	---	---	---	---	---	---
	21-Mar-2018		0.64	0.00053	0.0035	0.079	2.1	93	---	---	---	---	---	---	---	---	---	---	---
	07-Apr-2018		0.75	0.00045	0.0026	0.095	9.3	400	---	---	---	---	---	---	---	---	---	---	---
	02-May-2018		0.72	0.00078	0.0033	0.049	5.0	280	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2018		0.053	0.00057	0.0012	0.0094	1.0	36	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		0.22	0.00062	0.0016	0.018	0.92	27	---	---	---	---	---	---	---	---	---	---	---
	12-Aug-2018		0.30	0.00051	0.0012	0.013	0.72	21	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2018		0.19	0.00083	0.00087	0.011	0.84	13	---	---	---	---	---	---	---	---	---	---	---
	16-Oct-2018		0.68	0.00099	0.00089	0.028	2.2	55	---	---	---	---	---	---	---	---	---	---	---
RB-OBS-47	21-Aug-2012	W-CAT-4	0.45	0.077	0.0064	0.11	1.6	6.0	---	---	---	---	---	---	---	---	---	---	---
	09-May-2014		0.82	0.0098	0.023	0.11	0.39	2.4	0.00019	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00062	0.0097	0.00038	0.000038	---
	01-Jun-2015		0.0033	0.043	< 0.00040	0.00095	0.28	16	0.00085	---	0.00011	0.000018	0.000012	0.000042	0.0032	0.0077	0.0023	0.00016	---
	15-Aug-2016		0.011	0.00055	0.0012	0.0037	0.81	3.8	< 0.00010	---	0.000021	< 0.0000085	< 0.0000075	< 0.000010	0.00029	0.00069	0.00030	0.000042	---
(Duplicate)	15-Aug-2016		0.011	0.00058	0.0013	0.0039	0.69	6.2	---	---	---	---	---	---	---	---	---	---	---
	11-Apr-2017		0.21	0.0035	0.0078	0.038	8.4	---	---	---	---	---	---	---	---	---	---	---	---
	10-May-2017		0.072	0.00041	0.00072	0.0066	0.62	2.6	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		0.014	0.00060	0.00093	0.0024	0.48	5.5	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	15-Jul-2017		0.014	0.00069	0.00097	0.0029	0.59	4.9	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		0.013	0.00048	0.00075	0.0024	0.39	7.5	---	---	---	---	---	---	---	---	---	---	---
	15-Sep-2017		0.018	0.00065	0.00061	0.0023	0.25	2.7	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		0.040	0.00057	0.0019	0.0053	0.92	6.6	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		0.11	0.00054	0.0027	0.0085	0.53	9.9	---	---	---	---	---	---	---	---	---	---	---
	20-Dec-2017		0.18	0.00043	0.0030	0.011	0.78	6.4	---	---	---	---	---	---	---	---	---	---	---
	17-Jan-2018		0.12	< 0.00040	0.0016	0.0071	0.63	5.8	---	---	---	---	---	---	---	---	---	---	---

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Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH										
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**	**0.0034**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.00005**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**	**0.0002**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**	**0.00042**	**---**	**0.000024**	**0.000009**	**0.0000075**	**0.00006**	**0.0018**	**0.0031**	**0.00172**	**0.00020**	**---**
	13-Feb-2018		0.23	< 0.00040	0.0032	0.014	0.95	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2018		0.018	< 0.00040	< 0.00040	< 0.00089	0.39	3.1	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		0.019	< 0.00040	0.00065	0.0013	0.14	2.9	---	---	---	---	---	---	---	---	---	---	---
	12-Aug-2018		0.030	0.00044	0.00093	0.0030	0.51	3.5	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2018		0.017	0.00063	< 0.00040	< 0.00089	0.33	0.93	---	---	---	---	---	---	---	---	---	---	---
	16-Oct-2018		0.031	0.00055	0.0010	0.0033	< 0.10	2.8	---	---	---	---	---	---	---	---	---	---	---
RB-OBS-48	21-Aug-2012	W-CAT-4	0.91	0.37	0.093	1.2	1.6	10	---	---	---	---	---	---	---	---	---	---	---
	08-May-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.11	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	---
(Duplicate)	08-May-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	25-Nov-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.14	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	---
	15-Aug-2016		0.0024	< 0.00040	0.00047	< 0.00080	< 0.10	0.29	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00028	< 0.000050	< 0.000020	---
	03-Nov-2016		0.0025	< 0.00040	0.00044	0.0040	< 0.10	2.9	---	---	---	---	---	---	---	---	---	---	---
RB-OBS-49	31-May-2015	W-CAT-4	0.022	0.0030	0.0074	0.19	3	5.7	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00022	0.0038	0.00027	0.000025	---
(Duplicate)	01-Jun-2015		0.023	0.0032	0.01	0.21	4.3	35	---	---	---	---	---	---	---	---	---	---	---
	25-Nov-2015		0.014	0.012	0.0091	0.081	0.5	2.2	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.0011	< 0.000050	< 0.000020	---
RB-OBS-50	31-May-2015	W-CAT-4	0.0092	< 0.00040	< 0.00040	0.0075	0.27	0.55	< 0.00010	---	0.000069	0.000016	< 0.0000075	0.00010	0.00022	0.00086	0.00050	0.00038	---
	25-Nov-2015		0.0059	< 0.00040	< 0.00040	0.0029	< 0.1	1.5	---	---	---	---	---	---	---	---	---	---	---
RB-OBS-51	25-Nov-2015	W-CAT-4	0.0043	< 0.00040	< 0.00040	0.0015	0.35	---	---	---	---	---	---	---	---	---	---	---	---
RB-RW-1	05-Mar-2003	W-CAT-3	0.0090	< 0.0005	< 0.0005	(0.0013-0.0018)	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
RB-RW-2	05-Mar-2003	W-CAT-3	0.0021	< 0.0005	< 0.0005	(0.00070-0.0012)	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
RB-RW-3	25-Oct-2011	W-CAT-4	0.12	0.0038	0.0008	0.012	1.6	150	---	---	---	---	---	---	---	---	---	---	---
	01-Jun-2015		0.036	0.0010	0.0018	0.026	7.4	51	0.0023	---	< 0.000010	0.00020	0.00021	0.00027	0.0039	0.018	0.01	0.00054	---
RB-RW-4	25-Oct-2011	W-CAT-4	0.51	< 0.0004	0.0049	0.078	0.58	42	---	---	---	---	---	---	---	---	---	---	---
	31-May-2015		0.14	< 0.00040	< 0.00040	0.59	3.5	25	0.00057	---	0.00057	0.00020	0.000066	0.00064	0.0011	0.0042	0.0017	0.0013	---
	25-Nov-2015		0.22	0.00046	0.0029	0.023	0.67	12	0.00024	---	< 0.000011	0.000072	< 0.0000082	0.000063	0.0010	0.0033	0.0020	0.00039	---
	15-Aug-2016		0.081	< 0.00040	0.00067	0.19	2.8	82	**< 0.01**	---	**< 0.0010**	**< 0.00085**	**< 0.00075**	**< 0.0010**	0.013	0.07	0.022	0.0023	---
RB-RW-5	25-Oct-2011	W-CAT-4	< 0.0004	< 0.0004	< 0.0004	< 0.0008	0.99	49	---	---	---	---	---	---	---	---	---	---	---
	11-Oct-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	4.0	< 0.00010	---	< 0.000010	< 0.0000086	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	0.000064	---
(Duplicate)	11-Oct-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2014		0.0014	< 0.00040	0.00067	0.014	0.72	140	---	---	---	---	---	---	---	---	---	---	---
	25-Nov-2015		0.0012	0.00052	< 0.00040	< 0.00080	< 0.1	6.7	0.00013	---	< 0.000010	0.000030	< 0.0000075	0.000033	0.00061	0.0012	0.0010	0.00015	---
	02-Nov-2016		< 0.00040	0.0072	< 0.00040	< 0.00080	< 0.10	3.0	< 0.00010	---	< 0.000010	0.000021	< 0.0000075	< 0.000010	0.00024	0.00075	0.00036	0.000085	---
	15-Mar-2017		0.0011	0.073	< 0.00040	< 0.00080	< 0.10	27	---	---	---	---	---	---	---	---	---	---	---
	11-Apr-2017		0.0036	0.016	0.00061	0.0065	0.28	33	---	---	---	---	---	---	---	---	---	---	---
	10-May-2017		0.0020	0.17	0.00046	< 0.00080	0.35	33	---	---	---	---	---	---	---	---	---	---	---
	16-Jun-2017		< 0.00040	0.011	< 0.00040	< 0.00080	< 0.10	3.2	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		< 0.00040	0.0025	< 0.00040	< 0.00080	< 0.10	6.9	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		< 0.00040	0.0045	< 0.00040	< 0.00080	< 0.10	22	---	---	---	---	---	---	---	---	---	---	---
	15-Sep-2017		< 0.00040	0.010	< 0.00040	< 0.00080	< 0.10	4.1	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		0.0018	0.015	< 0.00040	< 0.00080	< 0.10	5.6	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		0.0041	0.0087	< 0.00040	< 0.00080	< 0.10	15	---	---	---	---	---	---	---	---	---	---	---
	20-Dec-2017		0.0032	0.0062	< 0.00040	< 0.00089	0.14	2.4	---	---	---	---	---	---	---	---	---	---	---
	17-Jan-2018		0.0025	0.0085	< 0.00040	< 0.00089	0.20	4.6	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	17-Jan-2018		0.0027	0.013	< 0.00040	< 0.00089	< 0.10	4.6	---	---	---	---	---	---	---	---	---	---	---
	13-Feb-2018		0.0021	0.011	< 0.00040	< 0.00089	0.19	7.5	---	---	---	---	---	---	---	---	---	---	---
	21-Mar-2018		0.0020	0.0094	< 0.00040	< 0.00089	0.16	15	---	---	---	---	---	---	---	---	---	---	---
	07-Apr-2018		0.0020	0.0054	< 0.00040	< 0.00089	< 0.10	1.2	---	---	---	---	---	---	---	---	---	---	---
	02-May-2018		0.0018	0.0080	< 0.00040	< 0.00089	0.11	4.4	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	02-May-2018		0.0018	0.0084	< 0.00040	< 0.00089	0.13	4.0	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2018		0.00098	0.086	< 0.00040	< 0.00089	0.15	8.6	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		0.0028	0.11	< 0.00040	0.00092	0.29	11	---	---	---	---	---	---	---	---	---	---	---
	12-Aug-2018		0.0025	0.029	< 0.00040	< 0.00089	0.12	5.7	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2018		0.0031	0.050	< 0.00040	< 0.00089	1.0	12	---	---	---	---	---	---	---	---	---	---	---
	16-Oct-2018		0.0048	0.019	< 0.00040	< 0.00089	0.19	3.8	---	---	---	---	---	---	---	---	---	---	---
RB-RW-6	25-Oct-2011	W-CAT-4	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	84	---	---	---	---	---	---	---	---	---	---	---
	11-Oct-2013		0.0024	0.0010	0.0011	0.0033	< 0.1	0.21	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000092	0.00024	0.000091	< 0.000020	---
	19-Sep-2014		0.0014	0.00054	< 0.00040	< 0.00080	< 0.1	4.9	---	---	---	---	---	---	---	---	---	---	---
	25-Nov-2015		< 0.00040	0.00052	< 0.00040	< 0.00080	0.1	18	0.00025	---	< 0.000010	0.00011	0.000030	< 0.000010	0.0014	0.00088	0.0031	0.00049	---
(Duplicate)	25-Nov-2015		0.00058	< 0.00040	< 0.00040	< 0.00080	0.12	17	---	---	---	---	---	---	---	---	---	---	---
	15-Aug-2016		0.00064	< 0.00040	< 0.00040	< 0.00080	< 0.1	1.4	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00015	0.00015	0.00028	0.000058	---
RB-RW-8	24-Oct-2011	W-CAT-4	0.19	0.0005	< 0.0004	0.032	0.42	0.9	---	---	---	---	---	---	---	---	---	---	---
	11-Oct-2013		0.13	0.0015	0.0027	0.026	0.32	0.65	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000094	0.00055	< 0.000050	< 0.000020	---
	19-Sep-2014		0.0011	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.64	---	---	---	---	---	---	---	---	---	---	---
	01-Jun-2015		0.00081	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00011	< 0.000050	< 0.000020	---
	15-Aug-2016		0.026	< 0.00040	0.00082	0.024	0.37	2.5	0.00021	---	0.000032	0.000011	< 0.0000075	0.000017	0.00074	0.0018	0.0010	0.00014	---
	15-Mar-2017		0.0027	< 0.00040	< 0.00040	< 0.00080	0.44	0.30	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	15-Mar-2017		0.0024	< 0.00040	< 0.00040	< 0.00080	0.35	0.76	---	---	---	---	---	---	---	---	---	---	---
	11-Apr-2017		0.0025	0.00067	< 0.00040	< 0.00080	0.16	8.2	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	11-Apr-2017		0.0024	0.00056	< 0.00040	< 0.00080	0.11	4.9	---	---	---	---	---	---	---	---	---	---	---
	10-May-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	0.35	2.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	10-May-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	0.41	1.9	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2017		0.0050	< 0.00040	< 0.00040	< 0.00080	0.19	0.46	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		0.078	0.00047	0.00051	0.011	0.13	0.93	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2017		0.085	0.00051	0.00057	0.012	0.26	1.3	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		0.12	0.00051	0.00058	0.016	0.25	1.8	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	14-Sep-2017		0.11	0.00045	0.00055	0.015	0.23	0.70	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		0.18	0.00051	0.00066	0.012	0.21	41	---	---	---	---	---	---	---	---	---	---	---
	22-Nov-2017		0.24	0.00061	0.0012	0.026	0.27	0.73	---	---	---	---	---	---	---	---	---	---	---
	20-Dec-2017		0.23	0.00078	0.0013	0.022	0.54	1.5	---	---	---	---	---	---	---	---	---	---	---
	17-Jan-2018		0.11	0.00065	0.00079	0.010	0.37	1.4	---	---	---	---	---	---	---	---	---	---	---
	07-Apr-2018		0.082	0.0018	0.00062	0.0082	0.31	2.1	---	---	---	---	---	---	---	---	---	---	---
	02-May-2018		0.00048	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.28	---	---	---	---	---	---	---	---	---	---	---
	23-Jun-2018		0.0012	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.55	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		0.0025	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.13	---	---	---	---	---	---	---	---	---	---	---
	12-Aug-2018		0.0037	< 0.00040	< 0.00040	< 0.00089	0.16	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2018		0.0048	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Sep-2018		0.0045	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	16-Oct-2018		0.044	< 0.00040	< 0.00040	0.0018	< 0.10	0.23	---	---	---	---	---	---	---	---	---	---	---
RB-RW-9	24-Oct-2011	W-CAT-4	0.39	0.0011	< 0.0004	0.035	4.2	9.6	---	---	---	---	---	---	---	---	---	---	---
	11-Oct-2013		0.21	0.0013	0.00099	0.0069	0.36	1.3	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00017	0.00060	< 0.000050	< 0.000020	---
(Duplicate)	11-Oct-2013		0.21	0.00057	< 0.00040	0.0094	0.96	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2014		0.055	< 0.00050	< 0.00067	< 0.0028	1.8	12	---	---	---	---	---	---	---	---	---	---	---
	01-Jun-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.31	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	---
	15-Aug-2016		0.18	0.0012	0.00076	0.0099	1.1	1.1	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.0010	< 0.000050	< 0.000020	---
(Duplicate)	15-Aug-2016		0.18	0.0013	0.00070	0.0098	0.44	6.4	---	---	---	---	---	---	---	---	---	---	---
	15-Mar-2017		0.017	0.021	< 0.00040	0.0040	0.84	16	---	---	---	---	---	---	---	---	---	---	---
	11-Apr-2017		0.010	0.0049	0.00043	0.0031	0.91	6.8	---	---	---	---	---	---	---	---	---	---	---
	10-May-2017		0.0035	< 0.00040	< 0.00040	< 0.00080	0.32	3.4	---	---	---	---	---	---	---	---	---	---	---
	15-Jun-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.36	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2017		0.023	0.00073	< 0.00040	0.0012	0.43	3.1	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		0.064	0.00070	0.00052	0.0026	0.40	6.5	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		0.069	0.0014	< 0.00040	0.0022	0.50	8.5	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		0.073	0.0014	0.00055	0.0024	1.1	12	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		0.22	0.00097	0.00055	0.013	0.85	8.1	---	---	---	---	---	---	---	---	---	---	---
	20-Dec-2017		0.15	0.0019	0.00067	0.0070	1.1	7.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Dec-2017		0.15	0.0021	0.00061	0.0068	1.0	8.9	---	---	---	---	---	---	---	---	---	---	---
	17-Jan-2018		0.054	0.0052	0.00045	0.0029	0.62	9.8	---	---	---	---	---	---	---	---	---	---	---
	13-Feb-2018		0.049	0.0035	0.00049	0.0036	0.59	9.1	---	---	---	---	---	---	---	---	---	---	---
	21-Mar-2018		0.041	0.0023	0.00064	0.0042	0.75	5.0	---	---	---	---	---	---	---	---	---	---	---
	07-Apr-2018		0.047	0.0037	0.00051	0.0040	0.49	14	---	---	---	---	---	---	---	---	---	---	---
	02-May-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	23-Jun-2018		0.0097	0.00049	< 0.00040	< 0.00089	0.16	0.47	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		0.031	0.0012	0.00046	0.0020	0.37	2.3	---	---	---	---	---	---	---	---	---	---	---
	12-Aug-2018		0.065	0.0015	0.00051	0.0034	0.92	4.8	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2018		0.22	0.0015	0.00065	0.011	1.0	4.7	---	---	---	---	---	---	---	---	---	---	---

Advisian
WorleyParsons Group

Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH										
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**	**0.0034**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.00005**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**	**0.0002**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**	**0.00042**	**---**	**0.000024**	**0.000009**	**0.0000075**	**0.00006**	**0.0018**	**0.0031**	**0.00172**	**0.00020**	**---**
	16-Oct-2018		0.31	0.0020	0.00067	0.015	0.84	6.3	---	---	---	---	---	---	---	---	---	---	---
RB-RW-10	24-Oct-2011	W-CAT-3	0.018	0.0004	< 0.0004	0.068	7.1	3.6	---	---	---	---	---	---	---	---	---	---	---
	11-Oct-2013		0.23	0.0018	0.0046	0.05	0.32	1.7	0.00039	---	< 0.000010	< 0.0000095	< 0.0000075	< 0.000010	0.00069	0.014	0.00090	0.000065	---
	15-Aug-2016		0.28	0.00099	0.0038	0.085	0.49	2.3	0.00033	---	0.000045	0.000026	< 0.0000075	0.000033	0.00082	0.014	0.0012	0.00015	---
RB-RW-11	24-Oct-2011	W-CAT-3	0.46	0.0095	0.036	0.41	11	190	---	---	---	---	---	---	---	---	---	---	---
RB-RW-12	01-Jun-2015	W-CAT-4	0.00059	0.00046	< 0.00040	< 0.00080	< 0.1	1.3	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	0.000025	---
	15-Aug-2016		0.038	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.85	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00023	< 0.000050	< 0.000020	---
RB-RW-13	01-Jun-2015	W-CAT-4	0.017	< 0.00040	< 0.00040	0.0024	0.1	0.13	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00041	< 0.000050	< 0.000020	---
	15-Mar-2017		0.013	0.12	0.0013	0.0035	0.50	9.0	---	---	---	---	---	---	---	---	---	---	---
	11-Apr-2017		0.013	0.020	0.00073	0.0017	0.12	3.5	---	---	---	---	---	---	---	---	---	---	---
	10-May-2017		0.0084	0.0026	0.0010	0.0018	0.12	1.6	---	---	---	---	---	---	---	---	---	---	---
	15-Jun-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.67	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	15-Jun-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.25	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2017		0.00095	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.71	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		0.0030	< 0.00040	< 0.00040	< 0.00080	0.21	1.6	---	---	---	---	---	---	---	---	---	---	---
	15-Sep-2017		0.0076	< 0.00040	< 0.00040	< 0.00080	0.24	0.74	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		0.026	0.00073	0.00065	0.0043	0.26	0.61	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	14-Oct-2017		0.022	0.00064	0.00058	0.0039	0.33	0.76	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		0.016	< 0.00040	< 0.00040	0.0024	0.25	0.97	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Nov-2017		0.017	< 0.00040	< 0.00040	0.0028	0.37	2.5	---	---	---	---	---	---	---	---	---	---	---
	21-Dec-2017		0.0091	0.0024	0.0011	0.0020	0.21	1.2	---	---	---	---	---	---	---	---	---	---	---
	17-Jan-2018		0.0073	0.0026	0.00092	0.0015	0.17	0.94	---	---	---	---	---	---	---	---	---	---	---
	13-Feb-2018		0.0019	0.00052	< 0.00040	< 0.00089	< 0.10	0.80	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	13-Feb-2018		0.0056	0.0032	0.00099	0.0018	0.24	1.2	---	---	---	---	---	---	---	---	---	---	---
	21-Mar-2018		0.0084	0.0068	0.0016	0.0030	0.12	0.95	---	---	---	---	---	---	---	---	---	---	---
	07-Apr-2018		0.0098	0.0072	0.0016	0.0030	< 0.10	1.4	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	07-Apr-2018		0.0055	0.0025	0.00091	0.0019	0.25	1.8	---	---	---	---	---	---	---	---	---	---	---
	02-May-2018		0.0054	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.53	---	---	---	---	---	---	---	---	---	---	---
	23-Jun-2018		0.0018	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.32	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		0.0065	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.93	---	---	---	---	---	---	---	---	---	---	---
	12-Aug-2018		0.061	< 0.00040	< 0.00040	0.0047	0.54	0.78	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2018		0.0066	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.59	---	---	---	---	---	---	---	---	---	---	---
	16-Oct-2018		0.029	< 0.00040	< 0.00040	0.0054	0.11	0.37	---	---	---	---	---	---	---	---	---	---	---
RB-RW-14	24-Oct-2011	W-CAT-3	0.091	0.0057	0.024	0.47	9	310	---	---	---	---	---	---	---	---	---	---	---
RB-13-1-2.4	11-Oct-2013	W-CAT-4	1.6	< 0.00040	0.0012	0.12	< 0.1	0.74	0.00014	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00074	0.0091	0.00046	< 0.000020	---
	13-Sep-2014		0.45	< 0.00040	0.00040	0.025	< 0.1	0.43	< 0.00010	---	0.000024	< 0.0000085	< 0.0000075	0.000030	0.00022	0.0069	0.00019	0.000049	---
	14-Sep-2017		0.65	0.00042	< 0.00040	0.017	< 0.10	0.18	---	---	---	---	---	---	---	---	---	---	---
RB-13-2-2.4	11-Oct-2013	W-CAT-4	0.0050	< 0.00040	< 0.00040	0.0084	0.6	1.3	0.00015	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00058	0.0038	0.00038	0.000020	---
	14-Sep-2014		0.00062	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.78	0.00021	---	**< 0.000076**	< 0.000016	< 0.0000075	0.000063	0.0011	0.0021	0.0011	0.00020	---
	31-May-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.18	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00026	< 0.000050	< 0.000020	---
	18-Oct-2015		0.00092	< 0.00040	< 0.00040	< 0.00080	< 0.1	3.0	0.00040	---	< 0.000010	< 0.0000085	< 0.0000075	0.000056	0.0018	0.0012	0.0015	0.00021	---
	15-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.72	< 0.00010	---	0.000018	< 0.0000085	< 0.0000075	< 0.000010	0.00037	0.00033	0.00020	0.000049	---
	01-Oct-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.68	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00027	0.00015	0.00013	0.000039	---
	14-Sep-2017		0.0082	< 0.00040	0.0032	0.0033	< 0.10	0.19	---	---	---	---	---	---	---	---	---	---	---
	21-Sep-2018		0.00052	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.78	---	---	---	---	---	---	---	---	---	---	---
RB-13-3-2.4	11-Oct-2013	W-CAT-4	0.045	0.00050	0.018	0.082	< 0.1	0.67	0.00014	---	< 0.000010	< 0.000018	< 0.0000075	0.000079	0.00049	0.0053	0.00099	0.00012	---
	14-Sep-2014		0.1	0.0011	0.087	0.28	0.42	0.81	0.00014	---	0.000013	< 0.0000085	< 0.0000075	0.000010	0.00040	0.019	0.00031	< 0.000020	---
	15-Aug-2016		0.19	< 0.00040	< 0.00040	< 0.00080	0.72	0.17	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000060	0.0029	< 0.000050	0.000021	---
	01-Oct-2016		0.013	< 0.00040	0.0079	0.0059	< 0.10	0.24	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000062	0.0038	< 0.000050	< 0.000020	---
	21-Sep-2018		0.0046	< 0.00040	0.00045	< 0.00089	< 0.10	0.18	---	---	---	---	---	---	---	---	---	---	---
RB-13-4-3	11-Oct-2013	W-CAT-4	0.098	0.0014	0.0023	0.08	0.27	0.97	0.00025	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00066	0.0030	0.00089	0.000049	---
	14-Sep-2014		0.034	< 0.00040	0.00054	0.015	< 0.1	0.42	0.00014	---	0.000012	< 0.0000085	< 0.0000075	< 0.000010	0.00043	0.0017	0.00064	0.000039	---
	18-Oct-2015		0.075	< 0.00040	0.0013	0.0056	0.11	1.7	0.00062	---	< 0.000010	< 0.0000085	< 0.0000075	0.000042	0.0020	0.0030	0.0037	0.00016	---
(Duplicate)	18-Oct-2015		0.074	< 0.00040	0.0013	0.0058	0.13	---	---	---	---	---	---	---	---	---	---	---	---
	01-Oct-2016		0.10	< 0.00040	0.0020	0.0017	< 0.10	0.36	0.00015	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00040	0.0015	0.00037	< 0.000020	---
	14-Sep-2017		0.047	< 0.00040	0.00059	< 0.00080	0.10	0.35	---	---	---	---	---	---	---	---	---	---	---
	21-Sep-2018		0.080	< 0.00040	0.0015	0.0013	< 0.10	0.37	---	---	---	---	---	---	---	---	---	---	---
RB-13-6-2.4	11-Oct-2013	W-CAT-4	0.17	0.0013	0.0014	0.092	< 0.1	2.3	0.00015	---	< 0.000010	< 0.000016	< 0.0000075	0.000038	0.00093	0.017	0.0013	0.00011	---
	13-Sep-2014		0.22	< 0.00040	< 0.00040	0.011	< 0.1	0.37	0.00013	---	0.000082	0.000064	0.000060	0.00012	0.00056	0.0053	0.00062	0.00025	---
	19-Oct-2015		0.25	0.0012	< 0.00040	0.016	< 0.1	8.8	0.00079	---	**< 0.000050**	0.00068	0.00082	0.00040	0.0032	0.045	0.0038	0.0011	---
	15-Aug-2016		0.096	0.00041	< 0.00040	0.0071	< 0.1	0.46	0.00052	---	0.00012	0.000028	0.000045	0.000088	0.0011	0.011	0.00093	0.00014	---
	01-Oct-2016		0.18	< 0.00040	< 0.00040	0.015	< 0.10	0.22	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00016	0.0023	0.00010	< 0.000020	---
RB-13-7-1.5	11-Oct-2013	W-CAT-4	0.87	0.0017	< 0.00040	0.11	< 0.1	0.75	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	0.000018	0.000088	0.0067	0.00015	0.000036	---
	13-Sep-2014		0.77	0.00044	< 0.00040	0.015	< 0.1	0.44	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.000089	0.0076	< 0.000050	< 0.000020	---
	21-Sep-2018		0.29	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Sep-2018		0.34	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
RB-13-8-1.5	11-Oct-2013	W-CAT-4	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	---
	13-Sep-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	19-Oct-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00015	< 0.000050	< 0.000020	---
	15-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	0.000024	< 0.000050	< 0.00010	< 0.000050	0.00011	---
	01-Oct-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	0.000010	< 0.000050	< 0.00010	< 0.000050	0.000040	---
RB-MW17-01	16-Jun-2017	W-CAT-4	0.47	0.0011	0.012	0.35	0.72	2.2	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		0.73	0.0022	0.0063	0.44	0.25	2.8	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		0.54	0.0011	0.0098	0.32	1.1	2.7	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		0.41	0.00089	0.0093	0.27	1.5	27	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		0.39	0.00089	0.0083	0.27	2.4	17	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		0.40	0.0011	0.0066	0.26	0.75	25	---	---	---	---	---	---	---	---	---	---	---
	20-Dec-2017		0.59	0.00067	0.0089	0.25	2.9	21	---	---	---	---	---	---	---	---	---	---	---
	17-Jan-2018		0.59	0.00057	0.0068	0.19	2.9	36	---	---	---	---	---	---	---	---	---	---	---
	13-Feb-2018		0.65	0.00058	0.0018	0.20	5.0	49	---	---	---	---	---	---	---	---	---	---	---
	21-Mar-2018		0.56	0.00065	0.00062	0.15	3.1	37	---	---	---	---	---	---	---	---	---	---	---
	07-Apr-2018		0.61	0.0011	0.0011	0.15	3.4	80	---	---	---	---	---	---	---	---	---	---	---
	02-May-2018		0.60	0.00082	0.0057	0.14	1.9	49	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2018		0.54	0.0020	0.014	0.24	1.9	1.6	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		0.88	0.0026	0.017	0.42	0.31	1.0	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2018		0.33	0.00067	0.0040	0.099	0.28	1.2	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2018		0.22	0.00055	0.0022	0.086	0.60	1.2	---	---	---	---	---	---	---	---	---	---	---
	16-Oct-2018		0.14	0.00052	0.0011	0.066	0.17	2.6	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-02	16-Jun-2017	W-CAT-4	0.84	0.0039	0.040	0.53	0.88	2.5	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		0.70	0.0031	0.010	0.40	0.90	2.8	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		1.2	0.0042	0.037	0.67	2.0	59	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		1.2	0.0042	0.055	0.70	8.7	17	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		0.66	0.0031	0.021	0.54	3.0	8.9	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		0.63	0.0028	0.022	0.48	1.5	3.5	---	---	---	---	---	---	---	---	---	---	---
	20-Dec-2017		0.63	0.0037	0.023	0.51	3.7	12	---	---	---	---	---	---	---	---	---	---	---
	17-Jan-2018		0.61	0.0025	0.018	0.47	1.2	5.0	---	---	---	---	---	---	---	---	---	---	---
	13-Feb-2018		0.62	0.0024	0.019	0.46	2.3	7.3	---	---	---	---	---	---	---	---	---	---	---
	21-Mar-2018		0.53	0.0026	0.015	0.48	3.2	4.3	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Mar-2018		0.59	0.0025	0.024	0.52	2.4	21	---	---	---	---	---	---	---	---	---	---	---
	07-Apr-2018		0.49	0.0023	0.015	0.56	16	40	---	---	---	---	---	---	---	---	---	---	---
	02-May-2018		0.62	0.0027	0.039	0.60	7.3	71	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2018		0.89	0.0024	0.039	0.41	2.3	3.7	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		0.75	0.0022	0.046	0.39	1.5	1.9	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2018		0.93	0.0037	0.051	0.65	0.92	2.0	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2018		0.71	0.0032	0.041	0.55	1.3	6.3	---	---	---	---	---	---	---	---	---	---	---
	16-Oct-2018		0.82	0.0037	0.047	0.60	0.58	9.8	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-03	16-Jun-2017	W-CAT-4	1.9	0.22	0.065	0.69	1.9	12	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2017		3.6	0.68	0.11	1.1	0.65	3.6	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		4.0	1.0	0.16	1.4	1.3	5.3	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		3.7	0.61	0.13	1.2	5.4	40	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		3.4	0.91	0.14	1.1	1.2	30	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		4.2	0.75	0.16	1.4	< 0.10	57	---	---	---	---	---	---	---	---	---	---	---
	20-Dec-2017		1.9	0.16	0.10	1.0	2.4	12	---	---	---	---	---	---	---	---	---	---	---
	17-Jan-2018		2.2	0.16	0.091	0.96	1.5	12	---	---	---	---	---	---	---	---	---	---	---

Advisian
WorleyParsons Group

Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH										
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			0.37	0.002	0.09	---	---	---	0.0058	0.0044	0.000012	0.000018	0.000015	0.00004	0.003	0.0011	0.0004	0.000025	0.0034
W-CAT-3			0.06	0.003	0.002	0.010	0.89	35	0.00053	0.00005	0.000012	0.000088	0.0000346	0.00007	0.0016	0.0054	0.00369	0.00026	0.0002
W-CAT-4			0.09	0.0009	0.002	0.014	0.24	1.6	0.00042	---	0.000024	0.000009	0.0000075	0.00006	0.0018	0.0031	0.00172	0.00020	---
	13-Feb-2018		2.4	0.17	0.057	0.79	2.5	28	---	---	---	---	---	---	---	---	---	---	---
	07-Apr-2018		2.0	0.13	0.030	0.40	0.77	24	---	---	---	---	---	---	---	---	---	---	---
	02-May-2018		1.2	0.032	0.053	0.48	1.8	9.7	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2018		2.4	0.23	0.061	0.64	1.3	2.7	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		3.5	0.78	0.12	1.1	0.59	15	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2018		2.7	0.39	0.043	0.46	< 0.10	1.5	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2018		3.1	0.66	0.11	1.1	0.65	2.2	---	---	---	---	---	---	---	---	---	---	---
	16-Oct-2018		2.9	0.59	0.077	0.76	< 0.10	6.5	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-04	15-Jun-2017	**W-CAT-4**	1.9	2.2	0.24	1.1	2.7	50	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		1.4	1.6	0.25	1.1	1.3	7.3	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	15-Jul-2017		1.4	1.6	0.25	1.1	1.1	60	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		0.27	0.32	0.034	0.35	3.1	23	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		4.3	2.5	0.16	0.77	< 0.10	6.8	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	14-Sep-2017		2.9	1.7	0.21	0.92	2.2	15	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		4.6	2.3	0.24	1.1	4.2	27	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	14-Oct-2017		4.9	2.4	0.23	1.1	3.6	32	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		3.8	2.2	0.28	1.2	< 0.10	130	---	---	---	---	---	---	---	---	---	---	---
	17-Jan-2018		2.8	1.8	0.25	1.1	3.7	74	---	---	---	---	---	---	---	---	---	---	---
	13-Feb-2018		2.0	1.5	0.33	1.6	21	78	---	---	---	---	---	---	---	---	---	---	---
	21-Mar-2018		2.1	2.0	0.21	1.0	5.8	110	---	---	---	---	---	---	---	---	---	---	---
	02-May-2018		1.6	1.5	0.24	1.1	8.9	100	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2018		0.0065	0.0055	0.00045	0.0060	< 0.10	0.90	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.22	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2018		3.5	1.8	0.13	0.67	0.55	4.0	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-05	15-Jun-2017	**W-CAT-4**	2.4	1.3	0.13	0.57	0.37	1.9	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		0.084	0.037	0.0056	0.022	0.30	0.37	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		0.0021	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.42	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	0.16	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-06	16-Jun-2017	**W-CAT-4**	0.79	0.42	0.11	0.45	0.90	0.99	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		0.80	0.31	0.092	0.35	0.35	1.2	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		0.40	0.11	0.11	0.39	0.87	2.5	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		0.16	0.013	0.13	0.47	1.6	2.2	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		0.28	0.069	0.11	0.41	3.5	6.2	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		0.22	0.012	0.16	0.52	1.1	11	---	---	---	---	---	---	---	---	---	---	---
	20-Dec-2017		0.83	0.22	0.15	0.46	1.7	2.5	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Dec-2017		0.83	0.21	0.15	0.45	1.7	1.9	---	---	---	---	---	---	---	---	---	---	---
	17-Jan-2018		1.3	0.28	0.14	0.48	1.3	3.7	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2018		0.078	0.097	0.0055	0.19	1.4	2.0	---	---	---	---	---	---	---	---	---	---	---
	16-Oct-2018		0.12	0.045	0.049	0.37	0.82	25	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-07	16-Jun-2017	**W-CAT-4**	0.41	0.16	0.089	0.36	0.55	2.1	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		0.31	0.061	0.070	0.30	0.71	1.5	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		0.11	0.012	0.0066	0.095	0.27	0.86	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		0.012	0.0030	0.00043	0.0038	0.29	0.98	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		0.93	0.40	0.058	0.21	1.8	1.8	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		0.54	0.16	0.050	0.22	0.82	15	---	---	---	---	---	---	---	---	---	---	---
	20-Dec-2017		0.38	0.074	0.054	0.25	1.4	2.5	---	---	---	---	---	---	---	---	---	---	---
	17-Jan-2018		0.30	0.043	0.044	0.21	0.95	3.4	---	---	---	---	---	---	---	---	---	---	---
	13-Feb-2018		0.19	0.0044	0.043	0.22	0.94	2.2	---	---	---	---	---	---	---	---	---	---	---
	21-Mar-2018		0.17	0.0024	0.043	0.22	0.93	2.9	---	---	---	---	---	---	---	---	---	---	---
	07-Apr-2018		0.18	0.0022	0.039	0.20	1.3	3.7	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2018		0.0024	0.00051	< 0.00040	0.020	0.43	0.85	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		0.0015	0.0022	0.00070	0.0034	0.17	0.76	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2018		0.00044	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.19	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2018		0.14	0.083	0.014	0.063	0.74	0.28	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-08	16-Jun-2017	**W-CAT-4**	0.042	< 0.00040	0.00055	0.022	0.40	4.1	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		0.045	0.00044	0.00043	0.021	0.47	1.8	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		0.054	0.00041	0.00058	0.013	6.2	15	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2017		0.066	< 0.00040	0.00057	0.017	1.6	13	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		0.048	< 0.00040	0.00060	0.019	0.72	6.7	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		0.068	0.0011	0.00068	0.021	0.69	11	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		0.10	< 0.00040	0.00057	0.023	0.71	21	---	---	---	---	---	---	---	---	---	---	---
	20-Dec-2017		0.12	< 0.00040	0.00058	0.022	0.88	1.9	---	---	---	---	---	---	---	---	---	---	---
	13-Feb-2018		0.081	< 0.00040	< 0.00040	0.0039	0.56	4.6	---	---	---	---	---	---	---	---	---	---	---
	21-Mar-2018		0.18	0.00058	0.00076	0.023	1.8	3.3	---	---	---	---	---	---	---	---	---	---	---
	07-Apr-2018		0.13	< 0.00040	< 0.00040	0.014	0.58	22	---	---	---	---	---	---	---	---	---	---	---
	02-May-2018		0.16	< 0.00040	< 0.00040	0.019	0.82	9.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	02-May-2018		0.14	< 0.00040	< 0.00040	0.017	1.5	2.6	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		0.098	< 0.00040	< 0.00040	0.0059	0.64	1.1	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.87	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	35	---	---	---	---	---	---	---	---	---	---	---
	16-Oct-2018		< 0.00040	0.00072	0.00061	0.0032	< 0.10	1.9	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-09	16-Jun-2017	**W-CAT-4**	0.23	0.00045	0.0017	0.093	0.49	1.9	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Jun-2017		0.22	0.00047	0.0016	0.085	0.57	1.8	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2017		0.20	0.00050	0.00052	0.078	0.79	1.8	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2017		0.22	< 0.00040	0.00095	0.036	0.78	4.5	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-2017		0.22	< 0.00040	0.0011	0.026	0.59	2.0	---	---	---	---	---	---	---	---	---	---	---
	14-Oct-2017		0.16	0.00079	0.00065	0.019	1.5	7.8	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		0.25	0.00043	0.0019	0.071	0.75	2.3	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Nov-2017		0.26	0.00047	0.0018	0.068	0.67	6.3	---	---	---	---	---	---	---	---	---	---	---
	20-Dec-2017		0.29	< 0.00040	0.0021	0.085	0.93	2.5	---	---	---	---	---	---	---	---	---	---	---
	17-Jan-2018		0.28	0.00048	0.0016	0.071	0.72	6.4	---	---	---	---	---	---	---	---	---	---	---
	13-Feb-2018		0.33	< 0.00040	0.0021	0.091	0.94	5.1	---	---	---	---	---	---	---	---	---	---	---
	21-Mar-2018		0.29	< 0.00040	0.0015	0.073	1.8	3.4	---	---	---	---	---	---	---	---	---	---	---
	07-Apr-2018		0.36	< 0.00040	0.0021	0.090	0.57	4.9	---	---	---	---	---	---	---	---	---	---	---
	02-May-2018		0.31	< 0.00040	0.0021	0.086	0.80	4.1	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2018		0.035	< 0.00040	< 0.00040	0.0026	0.21	0.79	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		0.030	< 0.00040	< 0.00040	0.0039	0.37	11	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2018		0.0032	< 0.00040	< 0.00040	< 0.00089	< 0.10	0.90	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2018		0.11	< 0.00040	0.00067	0.014	0.58	2.0	---	---	---	---	---	---	---	---	---	---	---
	16-Oct-2018		0.071	0.00053	0.00052	0.0081	0.24	2.4	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-10	19-Jun-2017	**W-CAT-4**	0.69	0.0015	0.013	0.14	0.40	7.1	---	---	---	---	---	---	---	---	---	---	---
	23-Nov-2017		0.38	< 0.00040	0.0052	0.060	0.90	9.5	---	---	---	---	---	---	---	---	---	---	---
	02-May-2018		0.057	< 0.00040	0.0054	0.044	0.46	8.6	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2018		0.064	< 0.00040	0.00047	0.0045	0.26	3.9	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		0.30	< 0.00040	0.0032	0.074	3.4	420	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	18-Jul-2018		0.31	< 0.00040	0.0028	0.090	5.8	240	---	---	---	---	---	---	---	---	---	---	---
	16-Oct-2018		0.17	< 0.00040	0.0012	0.023	0.21	1.1	---	---	---	---	---	---	---	---	---	---	---
RB-MW17-11	19-Jun-2017	**W-CAT-4**	0.86	0.0038	0.0040	0.42	10	90	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2018		0.010	< 0.00040	< 0.00040	0.0054	0.36	8.3	---	---	---	---	---	---	---	---	---	---	---
	12-Aug-2018		0.054	< 0.00040	< 0.00040	0.011	0.25	2.3	---	---	---	---	---	---	---	---	---	---	---
	16-Oct-2018		0.0076	< 0.00040	< 0.00040	0.0024	< 0.10	1.4	---	---	---	---	---	---	---	---	---	---	---
PW-18-1	18-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020
(Duplicate)	18-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020
PW-18-2	18-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020
PW-18-3	18-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020
PW-18-4	18-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	0.00010	< 0.000050	< 0.000020	< 0.00020
PW-18-5	18-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020
PW-18-6	18-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020
PW-18-7	19-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020
PW-18-8	19-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020
PW-18-9	19-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020
PW-18-10	19-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020

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Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH										
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**	**0.0034**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.00005**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**	**0.0002**
W-CAT-4			**0.09**	**0.0009**	**0.002**	**0.014**	**0.24**	**1.6**	**0.00042**	**---**	**0.000024**	**0.000009**	**0.0000075**	**0.00006**	**0.0018**	**0.0031**	**0.00172**	**0.00020**	**---**
PW-18-11	19-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020
PW-18-12	19-Jul-2018	**W-CAT-4**	< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background
W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background

Appendix 7
Conceptual Site Model: B-38X Area

Imperial

Conceptual Site Model

B-38X Area (APEC ME-6), Norman Wells, NT

30 May 2019

407011-00622-500 – CA-REP-0007

Advisian
Suite 500, 151 Canada Olympic Rd SW
Calgary, AB T3B 6B7 CANADA
Phone: +1 403 247 0200
Facsimile: +1 403 247 4811
www.advisian.com

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Project No. 407011-00622-500-CA-REP-0007 - Conceptual Site Model: B-38X Area (APEC ME-6), Norman Wells, NT

Rev	Description	Originator Approval	Reviewer Approval	Project Manager Approval	Date
0	Issued as Final	R. Reader	M. Brown	S. Gibb	30-May-19

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Figure 3 Site Plan Showing Topography

Figure 4 Site Plan Showing Sampling Locations

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Figure 5B Cross Section A-A' (South to North)

Figure 6 Soil Analytical Results: Petroleum Hydrocarbon Parameters

Figure 7 Groundwater Analytical Results: Petroleum Hydrocarbon Parameters

Figure 8 Conceptual Site Model

Figure 9 Conceptual Exposure Model, Current Land Use and Site Conditions

Tables

Table 1 Soil Analytical Results: Inorganic Parameters

Table 2 Soil Analytical Results: Organic Parameters

Table 3 Water Analytical Results: Inorganic Parameters

Table 4 Water Analytical Results: Organic Parameters

1. Conceptual Site Model Summary

Site Description

LAND USE		
	Site Description:	West of Mainland Tank Farm (Figure 1). Three wellheads (B-38X, C-40X, and B-40X; see Figure 4). Facility process related buildings, including: LT7 satellite and LH4 line header. Active pipelines above and below ground. 8-bay garage, pipe storage, storage of crates with drilling products/materials.
	Current Land Use:	CCME Industrial land use
	Future Land Use:	CCME Industrial land use
HISTORICAL LAND USE		
1	Infrastructure Type:	Historical Tank Farms, Related Pipelines above and below ground (Figure 2).
	Notes:	Crude Oil and/or Fuel Storage
	Years Active:	From air photos, tanks present from pre-1950 to 1979.
2	Infrastructure Type:	B-38X Production / Naphtha Injection Well.
	Notes:	Crude Oil Production and Naphtha Injection (Former Refinery by-product); anecdotal evidence of Naphtha spills and Injection Well casing leakage.
	Years Active:	B-38X well spudded in 1942; well is currently active as a production well.
3	Infrastructure Type:	C-40X Production Well.
	Notes:	Natural Gas Production Well.
	Years Active:	C-40X well spudded in 1983; well is currently active as a production well.
4	Infrastructure Type:	B-40X Production Well.
	Notes:	Crude Oil Production Well.
	Years Active:	B-40X well spudded in 1982; well is currently active as a production well.
5	Infrastructure Type:	Former Fire Training Area (FTA).
	Notes:	Bermed area used for fire suppression training and material storage.
	Years Active:	Likely between the 1980's and late 1990's, based on air photos.

SITE SETTING

Topography and Drainage:	Site slopes gently southward. Local drainage is toward the wetland area near southern boundary of Site, with regional drainage towards the Mackenzie River. See Figures 3, 4, and 5A/B.
Nearby Surface Water Bodies (Distance and Direction):	Mackenzie River (300 m to the south). Wetland (25 m to the south). Wetland (50 m to the north).

SOIL AND GROUNDWATER CONDITIONS

Surficial Materials:	Silt, sandy silt (Figure 5B)
Presence of Permafrost:	~ 2 to 6 mbgs, top of permafrost quite variable across the Site but always present.
Depth to Bedrock:	~ 5 to 6 mbgs
Bedrock Lithology:	Weathered siltstone
Number of Groundwater-Bearing Zones (GBZs):	1
Number of Piezometers:	56 current piezometers (Figure 4), 12 historical now destroyed/decommissioned piezometers, 30 active remediation trenches for Dual Phase Extraction (DPE).
Free Product in Surficial GBZ:	Yes
Free Product in Shallow Bedrock GBZ:	NA

First Groundwater-Bearing Zone

Primary Soil Type/Lithology:	Unconsolidated silt and sandy silt
Dominant Grain Size:	Fine
Depth to Groundwater Surface:	~ 0.1 to 5.3 mbgs
Hydraulic Conductivity (Minimum):	9.4×10^{-9} m /s
Hydraulic Conductivity (Maximum):	1.6×10^{-6} m/s
Hydraulic Conductivity (Geo Mean):	7.7×10^{-7} m/s

Vertical Hydraulic Gradient:	Downward
Lateral Hydraulic Gradient (I):	Estimated lateral hydraulic gradient ranges from 0.0028 (from FTA-N-E4 to the wetland area) to 0.045 (from B38X-N-E7 to B38X-S-E7). Mean value 0.024 used below.
Groundwater Flow Direction and Velocity:	South-southeast (following topography towards Mackenzie River and wetland). Velocity of a non-reactive tracer estimated at 2.9 m/year (based on v = KI/n) and dissolved PHC velocity of 1.3 m/year or less. This estimate is based on mean lateral gradient above, when remedial pumping wells are not active.

HISTORICAL ENVIRONMENTAL ACTIVITIES

Soil and groundwater characterization (1997 to present).

Groundwater and soil remediation DPE system, consisting of 30 trenches removing light end hydrocarbons by vapour extraction and groundwater pumping (2001 pilot system; 2004 full-scale).

CURRENT STATUS

Remaining soil and groundwater impacts (Figures 6 and 7, Tables 1 through 4).

Sources and Impacts

SOURCES

Historical Sources:	Historical Tank Farm (APEC # ME-6; Appendix 4). B-38X Production / Naphtha Injection Well. Fire Training Area. Impacted soil (secondary source).
Current Sources:	Current adjacent Tank Farm (potential source) and impacted soil (secondary source).

KNOWN ENVIRONMENTAL CONCERNS

a. Soil

Potential Contaminants of Concern:	Petroleum hydrocarbons (PHCs), salinity, metals, PAHs.
Proven Contaminants of Concern:	PHCs – benzene, PHC F1 to F4 in part due to natural seepage. Limited salinity - electrical conductivity (primarily driven by chloride) in Fire Training Area. Metals in part due to natural seepage, shallow bedrock, and shale fill imported to Site.

	Polycyclic Aromatic Hydrocarbons (PAHs) in part due to natural seepage and shallow bedrock.
Lateral Delineation:	PHC issues complicated due to the presence of natural crude oil and saline water seeps (Figure 6).
Vertical Delineation:	Vertical delineation of PHC is interpreted based on the presence of permafrost as a hydraulic barrier under the entire area.
b. Groundwater	
Potential Contaminants of Concern:	PHCs, salinity, metals, phenols, PAHs.
Proven Contaminants of Concern:	PHCs – benzene, toluene, ethylbenzene; PAHs. Limited salinity – chloride (particularly FTA area). Metals & Phenols. As noted with soils, some of the PHCs, PAHs, salinity, metals and phenols issues in groundwater and surface water are attributed in part to natural seepage.
Presence of Free Product:	Yes
Lateral Delineation:	Lateral delineation complete to the north, west (additional monitoring west of B38 98-6-5 not shown on Figures) and south (Figure 7). Delineation not complete to the east due to the existing Mainland Tank Farm.
Vertical Delineation:	Vertical delineation of PHC is interpreted based on the presence of permafrost.

Migration Pathways and Receptors

MIGRATION PATHWAYS

Summarized in Figures 8 and 9.

Potential pathways include leaching from soil to groundwater, lateral migration in groundwater, discharge to surface water, shallow vapour migration in soil, water and wind erosion.

RECEPTORS

Summarized in Figures 8 and 9.

Main downgradient receptor of interest is the wetland/pond located south of the Site, in relation to human, wildlife and freshwater aquatic life receptors. Plants and soil invertebrates may also be receptors in the rooting zone of shallow soils.

EXPOSURE PATHWAYS

Summarized on Figures 8 and 9.

Synopsis of Conceptual Risk

In terms of soil related exposure pathways, the DPE remediation trenches (installed in 2004 but currently not operational due to the temporary production shutdown) have reduced free product thickness observed in the soils significantly. Due to physical limitations including limited permeability in the native silts, active pipelines and oilfield facilities, and several roads through the area, some residual soil impacts exceeding PHC guidelines remain in place and are not currently accessible for excavation. Risks related to potential exposure pathways for human, ecological, microbial and wildlife contact or ingestion have been reduced by the remedial DPE system, but not eliminated. The DPE remediation systems will resume seasonal (summer) operation when the Norman Wells facility restarts production.

The pathway for leaching from soil to groundwater is active. However, measured light-end PHC values, particularly benzene, toluene and ethylbenzene (BTE) in groundwater at the downgradient southern perimeter of the Site generally do not exceed applied CCME freshwater aquatic life guidelines.

In terms of groundwater related exposure pathways, Figure 7 indicates that PHCs exceeding one or more of the applied guidelines for BTE persist under the footprint of the DPE remediation area. As such the exposure scenarios related to wildlife watering at the southern wetland, and freshwater aquatic life further south at the Mackenzie River, are potentially complete but inactive, since the PHC plume is delineated before reaching these receptors. In terms of groundwater consumption, the exposure scenario is incomplete for both humans and wildlife. Human drinking water is sourced locally from the Mackenzie River upstream of this site and is treated by the Town of Norman Wells before use.

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Figures

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AIR PHOTO SOURCE: PLANET LABS GEOMATICS CORP.,
DATE: APRIL 6 AND 30, 2017

3TM NAD27

m 0 100 200 400 m

1:8000

IMPERIAL
CONCEPTUAL SITE MODEL
B-38X AREA, NORMAN WELLS, NT

SITE LOCATION MAP

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FIG No 1 | REV B

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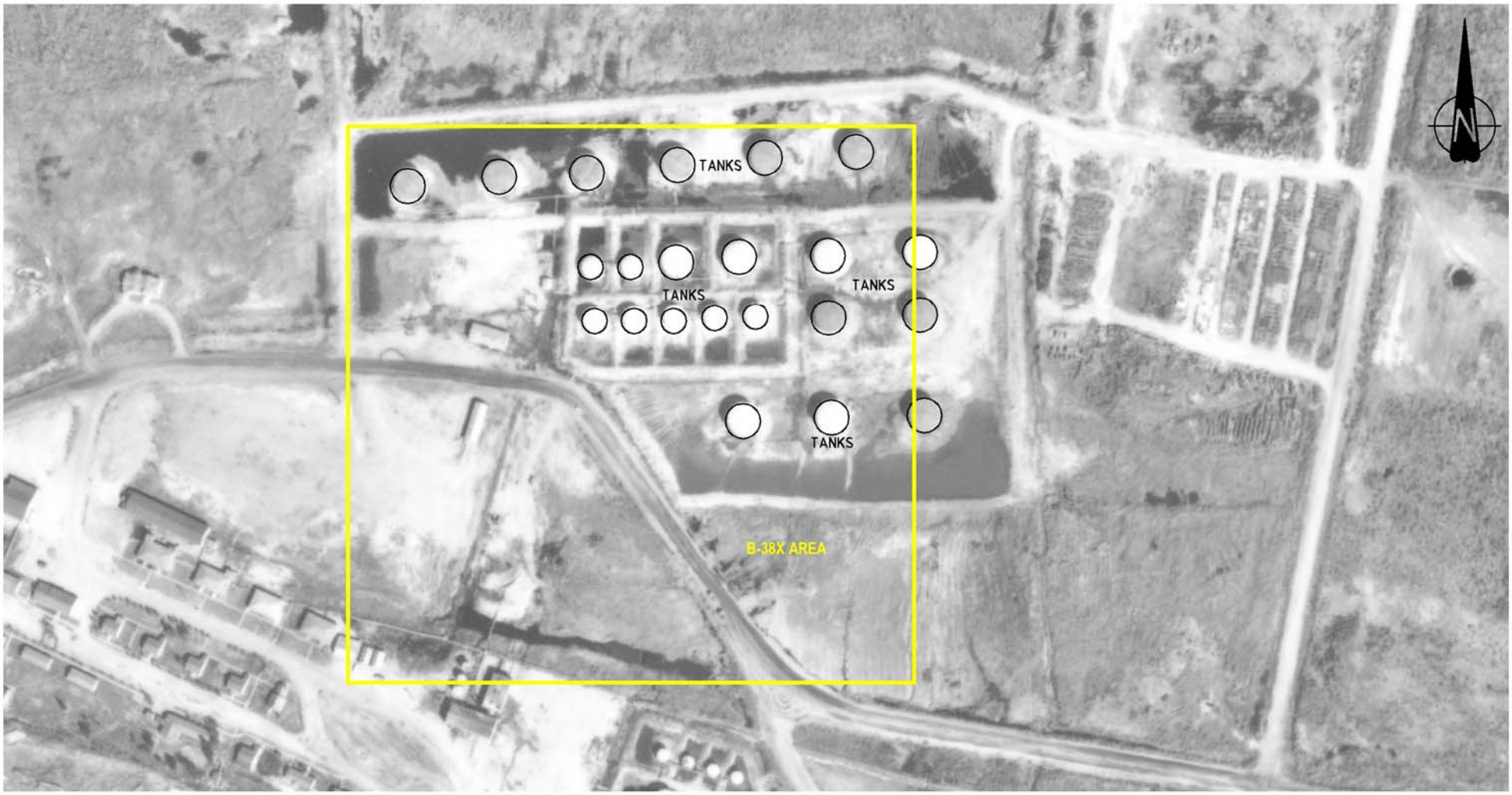

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IMPERIAL
CONCEPTUAL SITE MODEL
B-38X AREA, NORMAN WELLS, NT

HISTORICAL AIR PHOTO 1961

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				WorleyParsons Project No.	407011-00622-500		
				FIG No	2	REV	A

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Site Boundary

Dual Phase Extraction Trench

Elevation Contour (2.5m interval)

Elevation Contour (0.5m interval)

Source:
Airborne Imaging; 2012

0 25 50
Metres
1:2,000

IMPERIAL
CONCEPTUAL SITE MODEL
B-38X AREA, NORMAN WELLS, NT

SITE PLAN SHOWING TOPOGRAPHY

Date:	03-MAY-19	Drawn by:	T.G.	Edited by:	T.G.	App'd by:	. .

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FIG No 3

REV A

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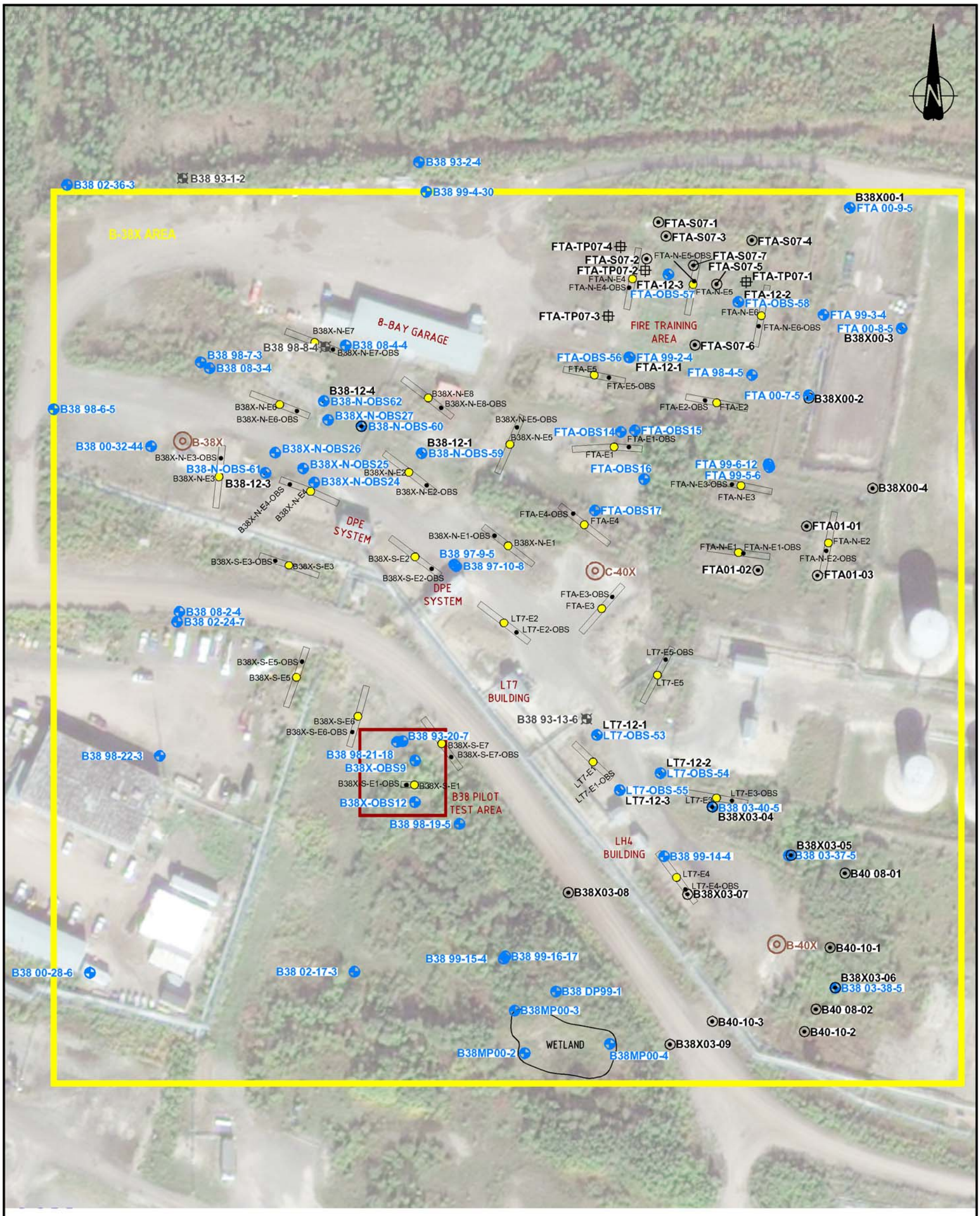

LEGEND

- PRODUCTION WELL LOCATION
- DUAL PHASE EXTRACTION TRENCHES
- 8" DPE TRENCH EXTRACTION WELLHEAD
- 4" DPE TRENCH OBSERVATION WELLHEAD
- MONITORING WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- SOIL SAMPLING LOCATION
- TEST PIT LOCATION

NOTE:
1. B38 PILOT TEST AREA INCLUDES ADDITIONAL WELLS FOR RADIUS OF INFLUENCE TESTING. THIS FIGURE ONLY SHOWS LOCATIONS CURRENTLY MONITORED DUE TO CONGESTION.
2. HISTORICAL SAMPLING LOCATIONS (PRE-2001) NOT SHOWN.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014.

m 0 25 50 75 m

1:1250

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CONCEPTUAL SITE MODEL
B-38X AREA, NORMAN WELLS, NT

SITE PLAN SHOWING SAMPLING LOCATIONS

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FIG No 4

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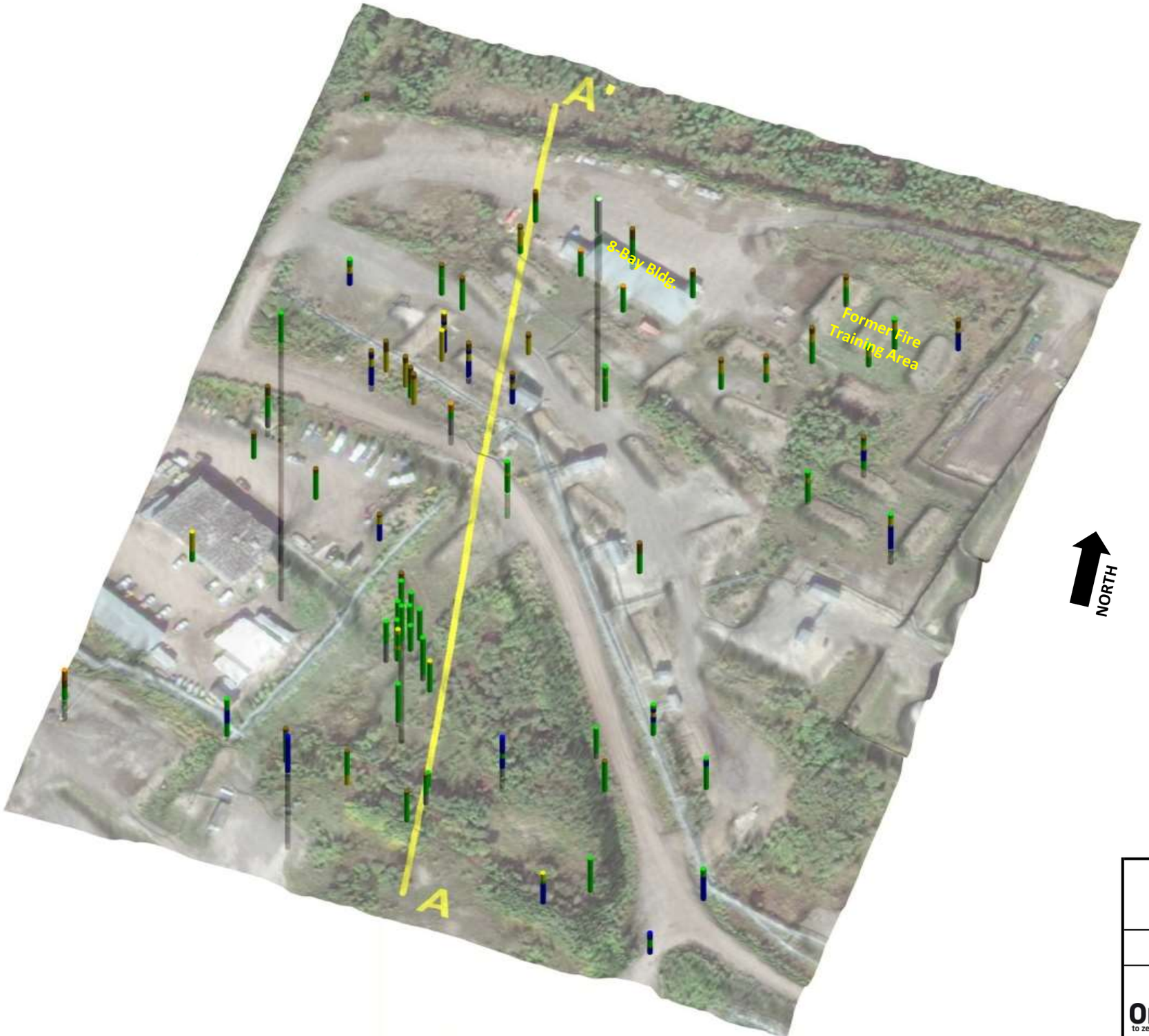

IMPERIAL
CONCEPTUAL SITE MODEL
B-38X AREA, NORMAN WELLS, NT

SITE PLAN 3-D VISUALIZATION

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FIG No.: 5A

REV: A

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NORTH

A'

A

15 m

B38MP00-3
B38 99-15-4
B3 98-19-5
B38X-OBS9
B38 97-10-8
B38-N-OBS-59
B38 08-4-4
B38X93-2-4

Water Table

Wetland

Bedrock Surface

0 25 50 75

Unit

- CLAY
- COBBLES AND/OR GRAVEL
- NO SAMPLE
- SAND
- SANDSTONE
- SILT
- SILTSTONE/MUDSTONE/SHALE
- TOPSOIL/FILL/ORGANICS

LOCATION WHERE MOST RECENT GROUNDWATER SAMPLE HAD PETROLEUM PARAMETERS UNDER GUIDELINES, SHOWN IN GREEN

LOCATION WHERE MOST RECENT GROUNDWATER SAMPLE HAD PETROLEUM PARAMETERS EXCEEDING GUIDELINES, SHOWN IN RED

LOCATION WHERE MOST RECENT GROUNDWATER SAMPLE HAD FREE-PHASE HYDROCARBONS, SHOWN IN PURPLE

Notes: 1) 5x vertical exaggeration
2) Cross-section width is 20 m.

IMPERIAL
CONCEPTUAL SITE MODEL
B38-X AREA, NORMAN WELLS, NT

CROSS-SECTION A-A' (SOUTH TO NORTH)

OneWay™ to zero harm

Date: 10-May-19 | Drawn by: AM | Edited by: RR | App'd by:

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FIG No. 5B | REV A

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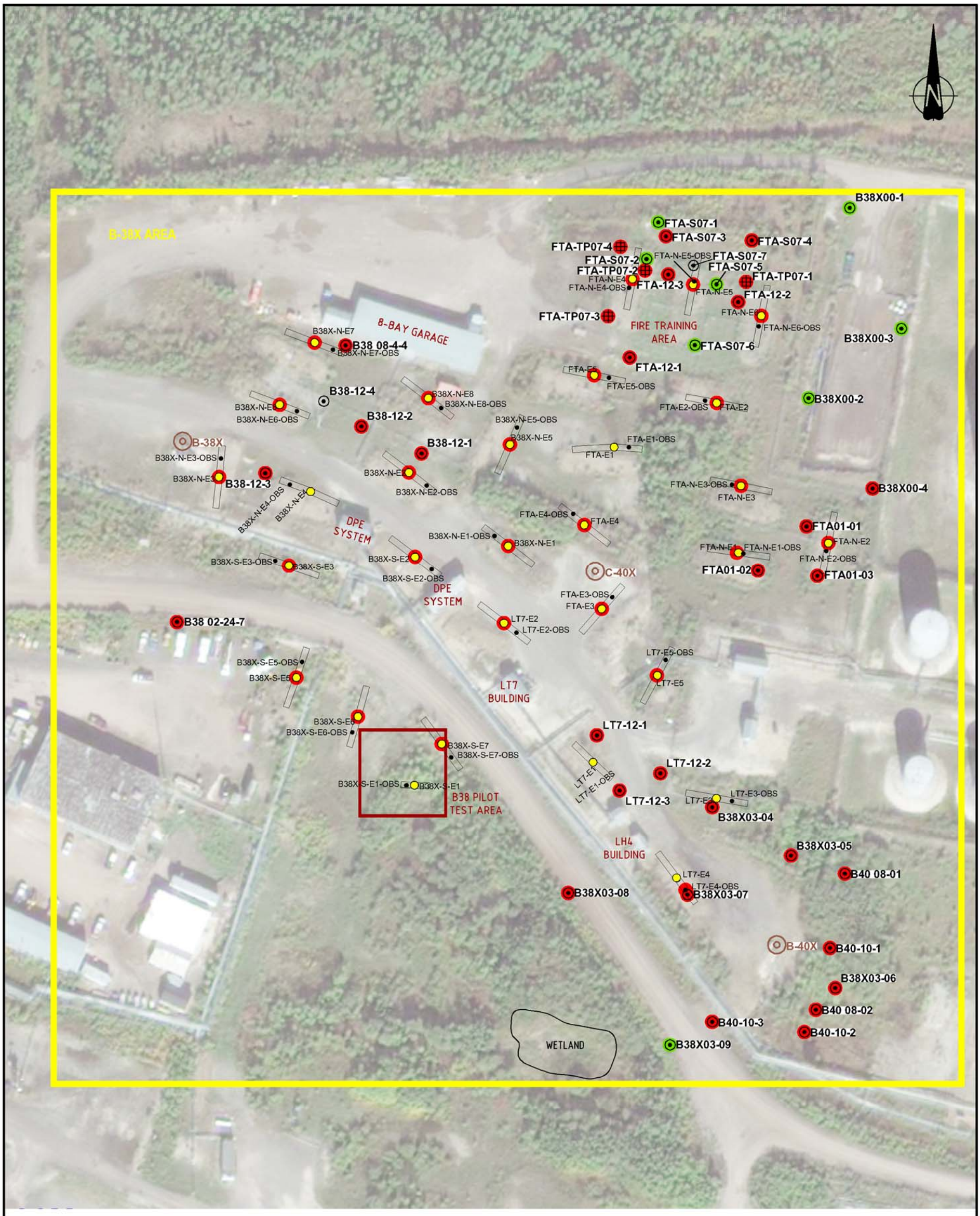

LEGEND

- PRODUCTION WELL LOCATION
- DUAL PHASE EXTRACTION TRENCHES
- 8" DPE TRENCH EXTRACTION WELLHEAD
- 4" DPE TRENCH OBSERVATION WELLHEAD
- SOIL SAMPLING LOCATION
- TEST PIT LOCATION

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLIED ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED, SHOWN IN RED
- LOCATION WHERE REMEDIAL TRENCH SOIL SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED, SHOWN IN RED
- LOCATION NOT SAMPLED

m 0 25 50 75 m

1:1250

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.
4. B38 PILOT TEST AREA INCLUDES ADDITIONAL WELLS FOR RADIUS OF INFLUENCE TESTING. THIS FIGURE ONLY SHOWS LOCATIONS CURRENTLY MONITORED DUE TO CONGESTION.
5. SOIL SAMPLING LOCATIONS PRIOR TO 2000 HAVE NOT BEEN SHOWN AS THE DATA IS NO LONGER CONSIDERED RELEVANT DUE TO 1) CHANGES IN SOIL ANALYTICAL METHODS, AND 2) THE EXTENSIVE IN SITU REMEDIAL PROGRAMS THAT HAVE OCCURRED SINCE THE EARLY 2000s.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014.

IMPERIAL
CONCEPTUAL SITE MODEL
B-38X AREA, NORMAN WELLS, NT

SOIL ANALYTICAL RESULTS:
PETROLEUM HYDROCARBON PARAMETERS

Date:	Drawn by:	Edited by:	App'd by:
17-MAY-19	OTHERS	BMF	

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WorleyParsons Project No.: 407011-00622-500

FIG No: 6 | REV: B

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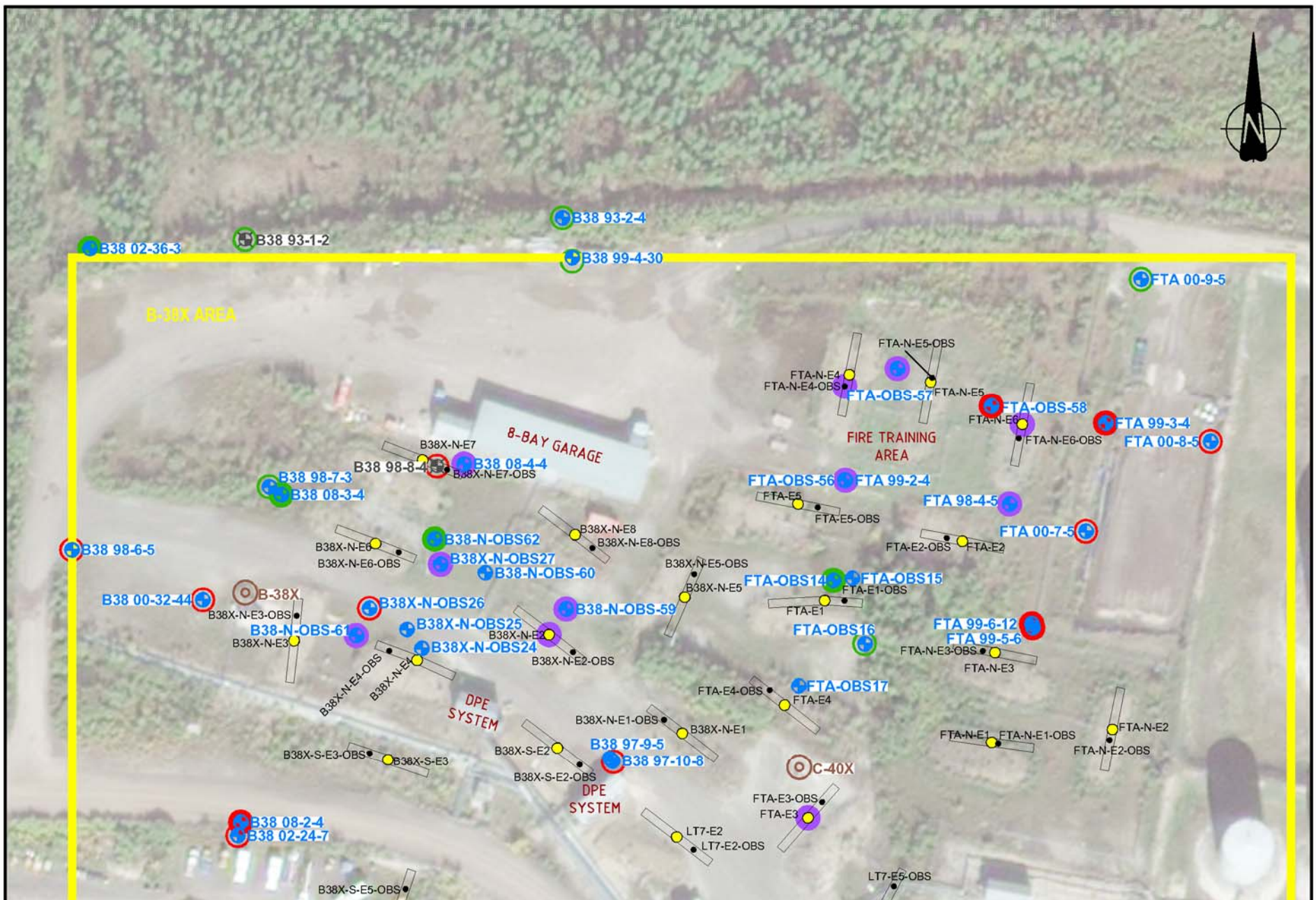
PLOT DATE & TIME: 17/5/2019 2:31:44 PM
SAVE DATE & TIME: 13/5/2019 4:16:37 PM
USER NAME: blair.fink
ISSUING OFFICE: CALGARY

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018_MAINLANDEAST_CSM.DWG



LEGEND

- PRODUCTION WELL LOCATION
- DUAL PHASE EXTRACTION TRENCHES
- 8" DPE TRENCH EXTRACTION WELLHEAD
- 4" DPE TRENCH OBSERVATION WELLHEAD
- MONITORING WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION

ANALYTICAL RESULTS

- LOCATION WHERE GROUNDWATER SAMPLE MET APPLIED ASSESSMENT CRITERIA FOR ALL PETROLEUM HYDROCARBON (PHC) PARAMETERS (BENZENE, TOLUENE, AND ETHYLBENZENE) THAT WERE ANALYZED BETWEEN 2012-2018, SHOWN IN SOLID GREEN.
- LOCATION WHERE GROUNDWATER SAMPLE MET APPLIED ASSESSMENT CRITERIA FOR ALL PETROLEUM HYDROCARBON (PHC) PARAMETERS (BENZENE, TOLUENE, AND ETHYLBENZENE) BUT MOST RECENT ANALYSIS WAS PRE-2012, SHOWN IN GREEN.
- LOCATION WHERE GROUNDWATER SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE PETROLEUM HYDROCARBON (PHC) PARAMETERS (BENZENE, TOLUENE, AND ETHYLBENZENE) THAT WERE ANALYZED BETWEEN 2012-2018, SHOWN IN SOLID RED.
- LOCATION WHERE GROUNDWATER SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE PETROLEUM HYDROCARBON (PHC) PARAMETERS (BENZENE, TOLUENE, AND ETHYLBENZENE) BUT MOST RECENT ANALYSIS WAS PRE-2012, SHOWN IN RED.
- LOCATION WHERE MEASURABLE FREE PHASE WAS OBSERVED IN ONE OR MORE SAMPLING EVENTS BETWEEN 2015-2018, SHOWN IN PURPLE
- PETROLEUM HYDROCARBON DATA NOT AVAILABLE

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.
4. B38 PILOT TEST AREA INCLUDES ADDITIONAL WELLS FOR RADIUS OF INFLUENCE TESTING. THIS FIGURE ONLY SHOWS LOCATIONS CURRENTLY MONITORED DUE TO CONGESTION.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014.

m 0 25 50 75 m

1:1250

IMPERIAL
CONCEPTUAL SITE MODEL
B-38X AREA, NORMAN WELLS, NT

GROUNDWATER ANALYTICAL RESULTS: PETROLEUM HYDROCARBON PARAMETERS

Date:	03-MAY-19	Drawn by:	OTHERS	Edited by:	BMF	App'd by:	
Advisian WorleyParsons Group				WorleyParsons Project No.	407011-00622-500		
				FIG No	7	REV	A

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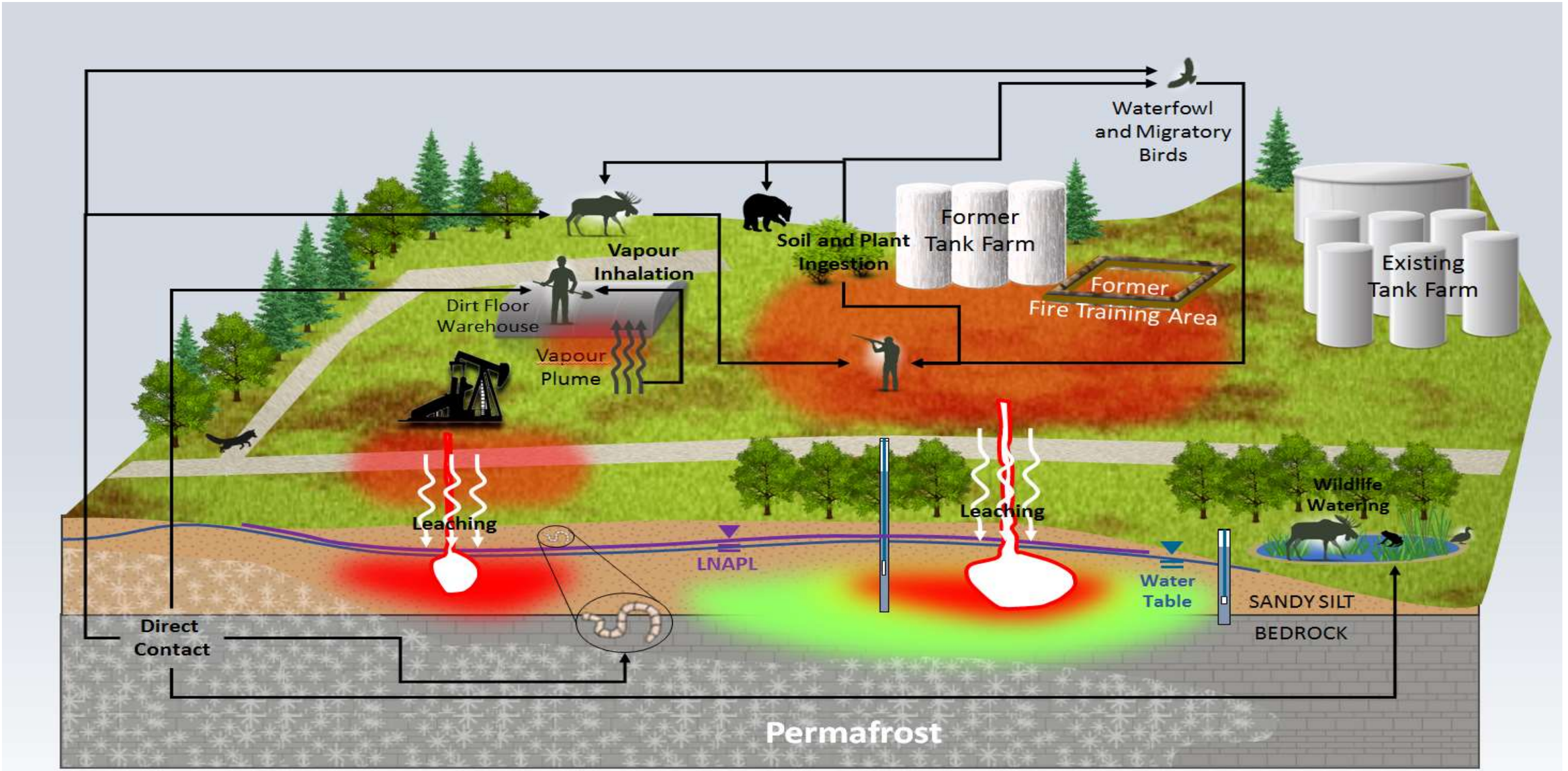
PLOT DATE & TIME: 7/5/2019 2:42:16 PM
SAVE DATE & TIME: 7/5/2019 2:37:48 PM
USER NAME: blair.fink
ISSUING OFFICE: CALGARY

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018_MAINLANDEAST_CSM.DWG



IMPERIAL
CONCEPTUAL SITE MODEL
B-38X AREA, NORMAN WELLS, NT

CONCEPTUAL SITE MODEL

Date:	Drawn by:	Edited by:	App'd by:
10-May-19	AH	LG	

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FIG No. 8 | REV A

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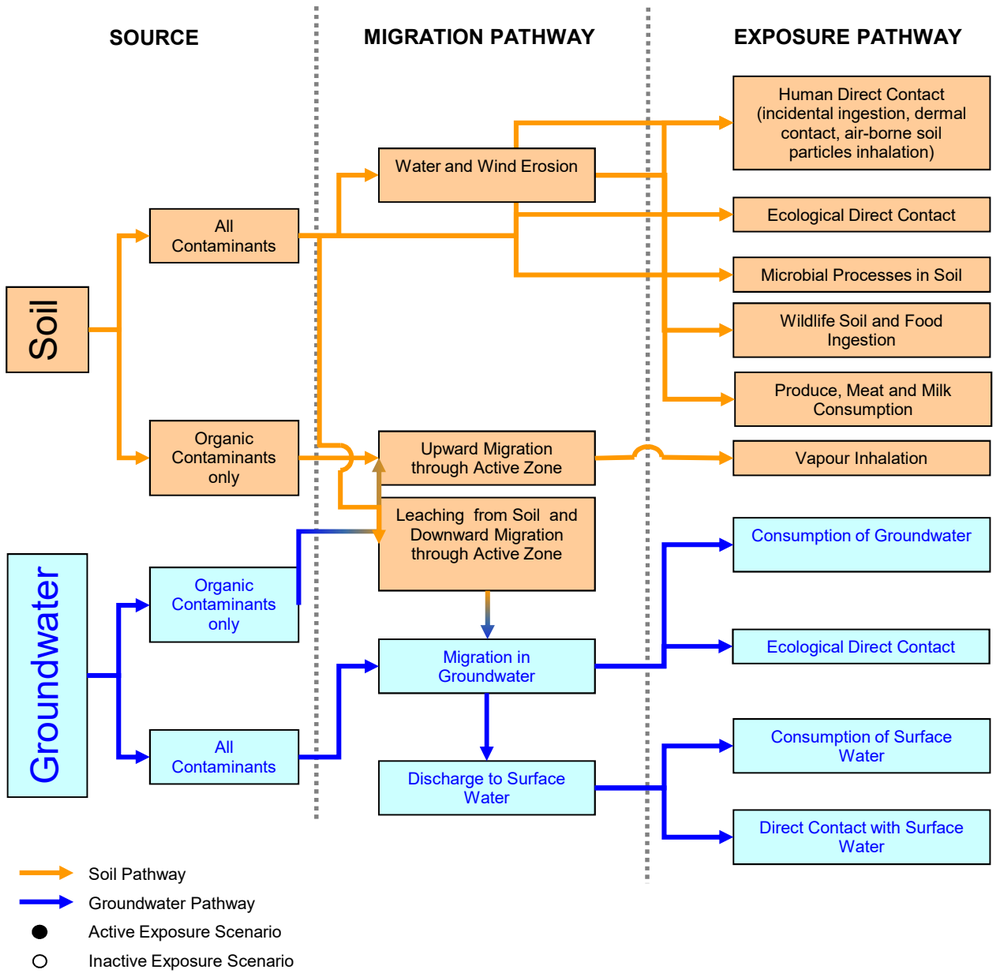
B-38X Area - Conceptual Exposure Model Flow Chart
(Current Land Use and Site Conditions)



RECEPTORS

Humans	Wildlife	Plant and Soil Invertebrates	Freshwater Aquatic Life
●			
		●	
		●	
	●		
●[1]			
○			
		●	
○	●		
			●

Notes: 1) Although the current land use is industrial, it is recognized that due to the size of the site and the geographical features of the area (i.e. river, creek, etc.) animals may move on and off of the site, and hunters are able to hunt in close proximity to the site. As such, meat consumption through hunting should be considered as an active exposure pathway.

IMPERIAL
CONCEPTUAL SITE MODEL
B-38X AREA, NORMAN WELLS, NT

CONCEPTUAL EXPOSURE MODEL
CURRENT LAND USE AND SITE CONDITIONS

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FIG No. 9 | REV A

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FILE LOCATION: CALGARY

FILE DIRECTORY: U:\CALGBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.5_PDF_FINAL_FIGURES\2 - CSMS\3 - B38

Tables

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				4	12	(6 - 8)	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	130	410
CCME Industrial Fine Sub-Surface				4	12	(6 - 8)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	130	410
S-CAT-2				0.71	1.65	7.49	1	12.6	397	0.84	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	46.1	142
S-CAT-3				1.91	5.68	8.04	1	25.2	398	1.06	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	48.6	148
B38X00-1	20-Jul-2000	0.0 - 1.0m	**S-CAT-3**	0.431	0.32	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X00-2	20-Jul-2000	1.0 - 2.0m	**S-CAT-3**	0.51	0.68	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X00-3	20-Jul-2000	1.0 - 2.0m	**S-CAT-3**	1.7	0.53	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X00-4	20-Jul-2000	2.0 - 3.0m	**S-CAT-3**	1.2	0.19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X00-5	22-Jul-2000	2.0 - 3.0m	**S-CAT-3**	0.535	0.44	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA01-02	24-Jun-2001	0.0 - 1.5m	**S-CAT-3**	0.414	0.70	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-S07-1	15-Aug-2007	Surface	**S-CAT-2**	7.66	9.5	---	< 1	8	369	< 0.4	0.7	14	< 0.2	8	18	11	< 0.05	2.0	23	0.5	< 1	< 0.3	< 1	24	84
FTA-S07-2	15-Aug-2007	Surface	**S-CAT-2**	5.57	2.9	---	< 1	7	317	< 0.4	0.5	13	< 0.2	6	19	10	< 0.05	3.7	23	1.0	< 1	< 0.3	< 1	21	71
FTA-S07-3	15-Aug-2007	Surface	**S-CAT-2**	3.09	1.4	---	< 1	6	292	< 0.4	0.7	14	< 0.2	6	14	16	0.07	5.0	22	0.5	< 1	0.3	< 1	23	67
FTA-S07-4	15-Aug-2007	Surface	**S-CAT-2**	3.82	3.5	---	< 1	8	430	< 0.4	0.7	19	< 0.2	9	21	13	< 0.05	3.3	28	1.2	< 1	0.3	< 1	30	101
FTA-S07-5	15-Aug-2007	Surface	**S-CAT-2**	42.4	2.3	---	< 1	8	379	< 0.4	0.5	12	< 0.2	7	16	11	< 0.05	2.2	21	0.6	< 1	< 0.3	< 1	24	76
FTA-S07-6	15-Aug-2007	Surface	**S-CAT-2**	10.7	11.0	---	< 1	6	243	< 0.4	0.4	13	< 0.2	5	13	13	< 0.05	3.3	17	< 0.5	< 1	< 0.3	< 1	18	58
FTA-TP07-1	18-Sep-2007	0.0 - 0.5m	**S-CAT-2**	0.84	1.0	---	< 1	9	283	0.5	0.5	16	< 0.2	9	19	17	0.05	3.3	29	0.8	< 1	0.3	< 1	32	93
	18-Sep-2007	0.5 - 1.0m	**S-CAT-3**	0.46	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2007	1.0 - 2.0m	**S-CAT-3**	0.41	1.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2007	2.0 - 3.5m	**S-CAT-3**	0.49	0.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-TP07-2	18-Sep-2007	2.0 - 3.0m	**S-CAT-3**	0.48	0.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	0.0 - 0.5m	**S-CAT-2**	1.07	0.8	---	< 1	9	269	< 0.4	0.7	12	< 0.2	8	17	19	0.41	8.5	26	1.0	< 1	0.7	< 1	30	92
	19-Sep-2007	0.5 - 1.0m	**S-CAT-3**	0.44	1.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	1.0 - 2.0m	**S-CAT-3**	0.46	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	3.0 - 4.0m	**S-CAT-3**	0.8	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				**4**	**12**	**(6 - 8)**	**40**	**12**	**2000**	**8**	**22**	**87**	**1.4**	**300**	**91**	**600**	**50**	**40**	**89**	**2.9**	**40**	**1**	**300**	**130**	**410**
CCME Industrial Fine Sub-Surface				**4**	**12**	**(6 - 8)**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**130**	**410**
FTA-TP07-3	19-Sep-2007	0.0 - 0.5m	**S-CAT-2**	0.49	2.8	---	< 1	**13**	370	0.6	0.5	29	< 0.2	14	**30**	**20**	0.05	1.9	**45**	0.6	< 1	< 0.3	< 1	40	128
	19-Sep-2007	0.5 - 1.0m	**S-CAT-3**	0.56	1.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	1.0 - 2.0m	**S-CAT-3**	0.62	1.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	2.0 - 3.0m	**S-CAT-3**	0.46	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	3.0 - 4.0m	**S-CAT-3**	0.37	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-TP07-4	19-Sep-2007	0.0 - 0.5m	**S-CAT-2**	0.78	1.6	---	< 1	12	325	0.5	0.4	29	< 0.2	12	21	15	< 0.05	2.6	39	< 0.5	< 1	< 0.3	< 1	43	105
	19-Sep-2007	0.5 - 2.0m	**S-CAT-3**	0.3	0.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	2.0 - 3.0m	**S-CAT-3**	0.38	0.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B40-08-01	28-Jul-2008	0.0 - 0.15m	**S-CAT-2**	0.88	0.7	---	< 1	**22**	220	0.5	0.2	34	< 0.15	17	27	20	0.15	2.0	53	0.6	< 1	< 0.3	< 1	56	150
	28-Jul-2008	0.15 - 0.3m	**S-CAT-2**	1	0.8	---	1	**26**	250	0.5	0.4	34	< 0.15	15	25	29	0.07	3.5	56	0.8	< 1	0.4	< 1	53	140
B40-08-02	28-Jul-2008	0.0 - 0.15m	**S-CAT-2**	0.72	0.4	---	< 1	**26**	260	0.5	0.2	37	< 0.15	17	27	29	0.08	1.4	56	< 0.5	< 1	< 0.3	< 1	53	150
	28-Jul-2008	0.15 - 0.3m	**S-CAT-2**	0.62	0.3	---	< 1	**22**	210	0.4	0.2	34	< 0.15	17	26	20	0.07	0.9	55	< 0.5	< 1	< 0.3	< 1	53	150

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Surface soils, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Subsurface soils, 1999 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Surface soils, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Subsurface soils, 1999 and updates)

6. Background 95th Percentile Statistical Category:
S-CAT-2: Mainland - Mineral Surface Soil - 95th Percentile Background
S-CAT-3: Mainland - Mineral Subsurface Soil - 95th Percentile Background
S-CAT-4: Mainland - Bedrock Siltstone - 95th Percentile Background

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)												
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50+}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Fine, Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	10	10	180	0.25	10	0.013	0.046	100
CCME CSQG, Industrial, Fine, Subsurface				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.23	0.0065	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
B38X00-1	20-Jul-2000	0.0 - 1.0m	**S-CAT-3**	< 0.04	< 0.10	< 0.10	0.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2000	1.0 - 2.0m	**S-CAT-3**	< 0.04	< 0.10	< 0.10	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X00-2	20-Jul-2000	1.0 - 2.0m	**S-CAT-3**	8.1	19	8.8	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Jul-2000	5.0 - 6.0m	**S-CAT-4**	0.19	0.29	< 0.10	0.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X00-3	20-Jul-2000	1.0 - 2.0m	**S-CAT-3**	26	190	62	230	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Jul-2000	6.0 - 7.0m	**S-CAT-4**	0.09	< 0.10	< 0.10	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X00-4	20-Jul-2000	2.0 - 3.0m	**S-CAT-3**	120	490	130	560	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2000	5.0 - 6.0m	**S-CAT-3**	0.20	0.59	0.17	0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA01-01	24-Jun-2001	0.0 - 1.5m	**S-CAT-3**	35	92	46	170	7300	280	930	370	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2001	3.0 - 4.5m	**S-CAT-3**	0.39	1.0	0.39	1.3	34	1000	2600	730	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA01-02	24-Jun-2001	0.0 - 1.5m	**S-CAT-3**	6.4	28	10	140	6500	2000	8800	2100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jun-2001	1.5 - 3.0m	**S-CAT-3**	160	500	110	490	13000	480	1300	310	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA01-03	24-Jun-2001	0.0 - 1.5m	**S-CAT-3**	50	280	95	440	11000	430	1200	450	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38 02-24-7	20-Jul-2002	6.0 - 7.0m	**S-CAT-4**	0.20	0.19	0.21	2.85	610	2400	4900	1600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B3803-04	14-Jul-2003	0.0 - 1.5m	**S-CAT-3**	39	19	62	260	9000	820	420	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Jul-2003	3.0 - 4.5m	**S-CAT-3**	5.2	1.9	0.38	1.2	60	76	460	200	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B3803-05	14-Jul-2003	0.0 - 1.5m	**S-CAT-3**	59	180	70	440	9200	1100	840	120	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Jul-2003	3.0 - 4.5m	**S-CAT-3**	9.6	20	15	55	3700	17000	29000	8000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B3803-06	14-Jul-2003	0.0 - 1.5m	**S-CAT-3**	0.09	< 0.10	< 0.10	0.3	320	2900	15000	5300	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Jul-2003	1.5 - 3.0m	**S-CAT-3**	0.57	< 0.10	< 0.10	< 0.1	14	24	< 10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B3803-07	14-Jul-2003	0.0 - 1.5m	**S-CAT-3**	45	120	46	190	4200	1100	1000	290	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Jul-2003	1.5 - 3.0m	**S-CAT-3**	3.6	36	14	71	1400	170	810	260	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Jul-2003	3.0 - 4.5m	**S-CAT-3**	0.32	0.93	0.45	6.2	100	76	480	190	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B3803-08	13-Jul-2003	0.0 - 1.5m	**S-CAT-3**	0.67	< 0.10	0.45	1.36	210	48	1800	1100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Jul-2003	4.5 - 6.0m	**S-CAT-4**	< 0.04	< 0.10	< 0.10	0.45	260	2000	4600	1700	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B3803-09	13-Jul-2003	0.0 - 1.5m	**S-CAT-3**	< 0.04	< 0.10	< 0.10	< 0.2	< 10	< 10	< 10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-E2	21-Aug-2003	Composite	**S-CAT-3**	50	250	67	359	9100	310	290	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-E3	25-Aug-2003	Composite	**S-CAT-3**	77	210	48	218	1000	860	460	56	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-E4	31-Aug-2003	Composite	**S-CAT-3**	0.79	1.4	1.6	12	1200	210	170	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-E5	23-Aug-2003	Composite	**S-CAT-3**	11	40	13	61	1400	600	1000	180	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X-N-E1	30-Aug-2003	Composite	**S-CAT-3**	4.2	16	4.0	20	570	76	160	68	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X-N-E2	13-Sep-2003	Composite	**S-CAT-3**	61	230	67	359	6900	3800	6000	1600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X-N-E3	12-Sep-2003	Composite	**S-CAT-3**	1.6	4.5	2.9	11.4	700	780	760	130	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X-N-E5	09-Sep-2003	Composite	**S-CAT-3**	< 0.04	< 0.10	< 0.10	< 0.2	18	3000	2300	270	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X-N-E6	07-Sep-2003	Composite	**S-CAT-3**	26	140	63	291	4600	9400	12000	3100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X-N-E7	03-Sep-2003	Composite	**S-CAT-3**	2.6	3.5	3.2	44	1400	2500	4500	1700	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)												
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50+}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Fine, Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	10	10	180	0.25	10	0.013	0.046	100
CCME CSQG, Industrial, Fine, Subsurface				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.23	0.0065	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
B38X-N-E8	09-Sep-2003	Composite	**S-CAT-3**	12	98	41	199	1100	3300	2500	270	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X-S-E2	02-Sep-2003	Composite	**S-CAT-3**	0.59	1.0	1.2	14.9	2100	440	430	98	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X-S-E3	18-Aug-2003	Composite	**S-CAT-3**	61	230	73	375	12000	2200	1600	210	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X-S-E5	22-Aug-2003	Composite	**S-CAT-3**	9.3	37	15	79	2800	4600	3100	270	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X-S-E6	14-Aug-2003	Composite	**S-CAT-3**	1.4	8.2	6.1	35	1500	410	560	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38X-S-E7	16-Aug-2003	Composite	**S-CAT-3**	1.2	6.1	5.3	35	1700	1100	980	170	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LT7-E2	01-Sep-2003	Composite	**S-CAT-3**	29	120	41	188	6500	1000	780	130	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LT7-E3	26-Aug-2003	Composite	**S-CAT-3**	63	160	44	195	11000	1900	1100	240	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LT7-E4	24-Aug-2003	Composite	**S-CAT-3**	43	120	60	241	5000	1800	11000	4700	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LT7-E5	29-Aug-2003	Composite	**S-CAT-3**	24	66	28	117	4500	530	410	82	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-S07-1	15-Aug-2007	Surface	**S-CAT-2**	0.041	0.076	0.065	0.17	< 10	113	1470	744	---	< 0.0050	< 0.0050	< 0.0050	0.0084	0.0055	< 0.0050	< 0.0050	< 0.0050	0.0068	< 0.0050	0.0178	0.0381	0.0151
FTA-S07-2	15-Aug-2007	Surface	**S-CAT-2**	0.12	0.26	0.11	0.31	< 10	66	1800	886	---	< 0.0050	< 0.0050	< 0.0050	0.0107	0.0079	< 0.0050	< 0.0050	0.0052	0.0053	< 0.0050	0.0206	0.0374	0.0139
FTA-S07-3	15-Aug-2007	Surface	**S-CAT-2**	0.072	0.047	0.10	0.15	< 10	247	3790	1750	6500	< 0.0050	< 0.0050	< 0.0050	0.0069	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0213	0.068	0.0489
FTA-S07-4	15-Aug-2007	Surface	**S-CAT-2**	0.052	0.17	0.078	0.33	< 10	363	5310	2480	9800	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0066	< 0.0050	0.0229	0.0715	0.0300
FTA-S07-5	15-Aug-2007	Surface	**S-CAT-2**	0.048	0.14	0.054	0.13	< 10	26	448	438	---	< 0.0050	< 0.0050	< 0.0050	0.0068	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0148	0.0308	0.0123
FTA-S07-6	15-Aug-2007	Surface	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	204	1010	653	---	< 0.0050	< 0.0050	< 0.0050	0.0097	0.0067	0.0077	< 0.0050	0.0094	< 0.0050	0.0194	< 0.0050	0.0453	0.0746
FTA-TP07-1	18-Sep-2007	0.0 - 0.5m	**S-CAT-2**	0.52	3.3	< 1.0	650	12600	6180	11700	1570	11000	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2007	0.5 - 1.0m	**S-CAT-3**	220	590	150	700	20900	2210	2680	363	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2007	1.0 - 2.0m	**S-CAT-3**	40	160	47	220	5560	1150	1190	188	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2007	2.0 - 3.5m	**S-CAT-3**	86	240	56	250	6140	1180	1050	156	---	0.0322	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.221	0.0059	1.19	0.41	0.0142
FTA-TP07-2	18-Sep-2007	2.0 - 3.0m	**S-CAT-3**	38	99	25	110	2790	1510	1400	322	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	0.0 - 0.5m	**S-CAT-2**	0.41	0.37	0.075	0.48	20	228	1620	642	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	0.5 - 1.0m	**S-CAT-3**	28	0.95	12	42	1750	999	18900	12500	38000	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	1.0 - 2.0m	**S-CAT-3**	35	120	30	53	3580	1840	1700	385	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	3.0 - 4.0m	**S-CAT-3**	0.57	0.84	0.22	0.99	21	20	51	35	---	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0227	< 0.0050	0.0128	< 0.0050	0.0083	< 0.0050	0.0476	0.0316	0.0118
FTA-TP07-3	19-Sep-2007	0.0 - 0.5m	**S-CAT-2**	16	0.81	14	110	3860	3600	7450	2110	10000	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	0.5 - 1.0m	**S-CAT-3**	81	200	64	300	9310	5450	4400	852	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	1.0 - 2.0m	**S-CAT-3**	110	330	77	360	9580	2260	1750	241	---	0.0940	< 0.0050	< 0.0050	< 0.0050	0.0254	< 0.0050	< 0.0050	< 0.0050	0.628	< 0.0050	3.03	1.15	0.0323
	19-Sep-2007	2.0 - 3.0m	**S-CAT-3**	11	20	5.4	22	384	256	231	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	3.0 - 4.0m	**S-CAT-3**	4.0	0.15	0.31	0.28	< 10	21	46	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-TP07-4	19-Sep-2007	0.0 - 0.5m	**S-CAT-2**	< 0.0050	0.024	0.033	0.15	28	725	2340	835	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	0.5 - 2.0m	**S-CAT-3**	39	99	51	220	5680	6260	6300	1620	7800	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2007	2.0 - 3.0m	**S-CAT-3**	0.068	0.041	0.037	0.15	< 10	23	67	207	---	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0144	< 0.0050	< 0.0050	0.0055	0.0165	0.0233	0.0114
B40-08-01	28-Jul-2008	0.0 - 0.15m	**S-CAT-2**	0.67	< 0.020	0.65	3.6	270	2700	8400	2800	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Jul-2008	0.15 - 0.3m	**S-CAT-2**	37	0.85	74	310	8600	4600	25000	9100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B40-08-02	28-Jul-2008	0.0 - 0.15m	**S-CAT-2**	8.0	< 0.020	0.65	3.5	280	2000	5000	1200	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Jul-2008	0.15 - 0.3m	**S-CAT-2**	28	< 0.020	2.5	23	2900	2900	3900	1100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-N-E1	22-Sep-2008	Composite	**S-CAT-3**	42	160	44	210	5200	500	390	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Advisian
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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)												
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50+}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Fine, Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	10	10	180	0.25	10	0.013	0.046	100
CCME CSQG, Industrial, Fine, Subsurface				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.23	0.0065	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
FTA-N-E2	22-Sep-2008	Composite	**S-CAT-3**	5.6	23	12	57	2000	200	560	130	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-N-E3	22-Sep-2008	Composite	**S-CAT-3**	9.7	15	8.5	39	1200	380	250	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-N-E4	25-Sep-2008	Composite	**S-CAT-3**	9.8	44	16	67	2300	2100	2100	500	2200	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-N-E5	24-Sep-2008	Composite	**S-CAT-3**	11	40	17	81	1900	1800	2600	490	2200	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-N-E6	24-Sep-2008	Composite	**S-CAT-3**	15	57	28	130	4100	1400	3400	950	3900	---	---	---	---	---	---	---	---	---	---	---	---	---
B40-10-1	18-Aug-2010	0.0 - 0.5m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	76	280	160	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2010	2.5 - 3.0m	**S-CAT-3**	7.7	< 0.020	< 0.010	< 0.040	180	730	1400	550	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2010	4.0 - 4.5m	**S-CAT-4**	0.20	< 0.020	< 0.010	8.2	2300	6200	9900	3400	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B40-10-2	11-Aug-2010	0.0 - 0.3m	**S-CAT-2**	3.1	< 0.020	0.16	1.2	54	740	1100	230	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2010	0.3 - 0.6m	**S-CAT-3**	8.5	< 0.020	2.3	11	1000	4300	2500	290	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2010	0.6 - 1.0m	**S-CAT-3**	37	< 0.044	16	52	3300	8000	3100	180	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B40-10-3	19-Aug-2010	0.0 - 0.5m	**S-CAT-2**	0.077	0.12	0.048	0.21	< 12	300	10000	5300	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2010	1.5 - 2.0m	**S-CAT-3**	34	2.4	0.98	2.8	290	12	190	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2010	1.5 - 2.0m	**S-CAT-3**	25	5.0	0.88	2.5	250	11	250	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2010	3.6 - 4.1m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	89	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LT7-12-1	29-Jul-2012	2.0 - 2.5m	**S-CAT-3**	1.8	0.032	2.1	1.6	590	17	44	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2012	3.9 - 4.4m	**S-CAT-3**	32	48	35	120	8900	860	630	92	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2012	5.0 - 5.5m	**S-CAT-3**	8.4	0.037	0.23	0.66	< 12	36	470	300	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LT7-12-2	29-Jul-2012	1.0 - 1.4m	**S-CAT-3**	11	< 0.020	0.21	< 0.040	< 12	< 10	76	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2012	3.3 - 3.8m	**S-CAT-3**	86	170	66	290	8900	1200	690	99	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	29-Jul-2012	3.3 - 3.8m	**S-CAT-3**	72	160	61	260	11000	1400	850	170	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2012	4.2 - 4.5m	**S-CAT-3**	5.9	4.9	9.5	42	2000	350	470	160	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LT7-12-3	28-Jul-2012	1.0 - 1.5m	**S-CAT-3**	7.4	< 0.020	2.7	< 0.040	2100	44	180	74	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Jul-2012	1.9 - 2.4m	**S-CAT-3**	37	72	37	130	9500	840	640	140	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Jul-2012	3.0 - 3.5m	**S-CAT-3**	16	2.0	14	53	2100	320	870	370	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2012	4.0 - 4.5m	**S-CAT-4**	0.24	0.10	0.10	0.27	180	560	1600	620	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38-12-1/B38-N-OBS-59	29-Jul-2012	0.8 - 1.4m	**S-CAT-3**	71	310	28	890	22000	2500	3100	630	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2012	1.5 - 1.8m	**S-CAT-3**	400	1500	390	1800	53000	14000	11000	1700	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2012	3.5 - 4.0m	**S-CAT-3**	1.1	2.5	0.30	1.7	68	400	660	180	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38-12-2/B38-N-OBS-60	29-Jul-2012	1.0 - 1.5m	**S-CAT-3**	16	0.17	20	69	3000	5500	29000	12000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2012	2.0 - 2.5m	**S-CAT-3**	39	150	54	240	8100	1400	1200	160	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	29-Jul-2012	2.0 - 2.5m	**S-CAT-3**	41	180	63	290	10000	1800	1600	310	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2012	5.0 - 5.5m	**S-CAT-3**	29	75	25	120	5600	2800	2700	650	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38-12-3/B38-N-OBS-61	29-Jul-2012	0.4 - 0.9m	**S-CAT-3**	6.5	11	21	63	3300	2300	1800	370	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2012	4.5 - 5.0m	**S-CAT-3**	0.29	0.48	0.47	6.2	1100	3500	6000	2000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	29-Jul-2012	4.5 - 5.0m	**S-CAT-3**	0.31	0.35	< 0.010	6.9	600	2600	4500	1500	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2012	5.5 - 6.0m	**S-CAT-3**	< 0.0050	0.16	< 0.010	3.5	350	1200	2000	680	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38-12-4/B38-N-OBS-62	29-Jul-2012	1.2 - 1.5m	**S-CAT-3**	0.56	0.026	0.024	< 0.070	< 12	530	4400	2200	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2012	2.5 - 3.0m	**S-CAT-3**	11	18	6.7	32	1500	1200	900	120	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2012	4.0 - 4.5m	**S-CAT-3**	24	72	22	100	4300	2400	1400	150	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2012	5.0 - 5.5m	**S-CAT-3**	5.1	0.21	4.4	21	1000	3300	5000	1500	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									Polycyclic Aromatic Hydrocarbons (PAHs)												
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50+}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME CSQG, Industrial, Fine, Surface				**110**	**330**	**430**	**230**	---	---	---	---	---	**0.28**	**320**	**32**	**10**	**72**	**10**	**10**	**180**	**0.25**	**10**	**0.013**	**0.046**	**100**
CCME CSQG, Industrial, Fine, Subsurface				**620**	**660**	**860**	**460**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Surface				---	---	---	---	**320**	**260**	**2500**	**6600**	**6600**	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil, Industrial, Fine, Subsoil				---	---	---	---	**800**	**1000**	**5000**	**10000**	**10000**	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-2				**0.011**	**0.044**	**0.022**	**0.088**	**14.1**	**33.8**	**277**	**118**	---	**0.005**	**0.005**	**0.004**	**0.01**	**0.01**	---	**0.005**	**0.01**	**0.018**	**0.01**	**0.0117**	**0.0289**	**0.0134**
S-CAT-3				**0.015**	**0.02**	**0.016**	**0.081**	**18.3**	**83.7**	**536.5**	**209.5**	---	**0.006**	**0.006**	**0.004**	**0.006**	**0.009**	---	**0.006**	**0.011**	**0.013**	**0.01**	**0.018**	**0.045**	**0.02**
S-CAT-4				**0.0775**	**0.4**	**0.96**	**6.08**	**96.8**	**825.5**	**1265**	**288**	---	**0.034**	**0.023**	**0.004**	**0.23**	**0.0065**	---	**0.007**	**0.014**	**0.236**	**0.005**	**0.048**	**0.771**	**0.08**
FTA-12-1/FTA-OBS-56	30-Jul-2012	1.0 - 1.3m	**S-CAT-3**	**20**	**55**	**38**	**180**	**4200**	**1200**	**1800**	**380**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Jul-2012	3.4 - 3.7m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	46	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Jul-2012	3.7 - 4.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	39	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-12-2/FTA-OBS-57	30-Jul-2012	1.1 - 1.5m	**S-CAT-3**	**0.56**	**0.047**	**0.27**	**1.4**	**250**	**1800**	**3400**	**640**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Jul-2012	1.8 - 2.4m	**S-CAT-3**	**73**	**190**	**48**	**200**	**7600**	**850**	**700**	90	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	30-Jul-2012	1.8 - 2.4m	**S-CAT-3**	**74**	**200**	**50**	**210**	**8100**	**1300**	**940**	91	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Jul-2012	5.0 - 5.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	19	150	80	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-12-3/FTA-OBS-58	30-Jul-2012	0.5 - 1.0m	**S-CAT-3**	**0.060**	**0.13**	**0.028**	**0.66**	**370**	**1500**	**4500**	**970**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Jul-2012	3.5 - 4.0m	**S-CAT-3**	**5.2**	< 0.020	< 0.010	< 0.040	< 12	< 10	67	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Jul-2012	5.0 - 5.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	73	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates)
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Subsurface Soils, excluding protection of potable groundwater, 2001 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates)
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Subsurface Soils, excluding protection of potable groundwater, 2001 and updates)

6. Background 95th Percentile Statistical Category:
S-CAT-2: Mainland - Mineral Surface Soil - 95th Percentile Background
S-CAT-3: Mainland - Mineral Subsurface Soil - 95th Percentile Background
S-CAT-4: Mainland - Bedrock Siltstone - 95th Percentile Background

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals															
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
Goundwater Sampling Locations																							
B38 00-28-6	17-Sep-2000	**W-CAT-3**	8.1	6.9	< 0.02	0.005	**23**	< 0.02	0.003	0.057	0.0003	< 0.005	< 0.005	0.645	< 0.001	< 0.00005	< 0.005	**0.025**	0.002	< 0.0001	**< 0.03**	---	0.015
	26-Aug-2001		8.0	7.6	< 0.02	< 0.005	5	< 0.02	< 0.05	0.056	< 0.002	< 0.005	< 0.005	0.815	< 0.03	---	< 0.005	0.018	**< 0.03**	**< 0.01**	**< 0.03**	---	0.007
	20-Aug-2002		5.8	7.7	< 0.02	< 0.005	18	0.013	0.004	0.068	0.00018	< 0.001	**0.0129**	1.53	< 0.0005	< 0.00005	0.006	0.016	0.001	< 0.0001	0.0001	0.00384	**0.032**
	24-Aug-2005		17.3	---	< 0.2	< 0.06	---	0.009	< 0.005	0.07	0.00029	< 0.007	**0.0278**	1.84	< 0.001	< 0.00005	< 0.006	**0.022**	0.002	< 0.0001	< 0.0008	0.007	**0.039**
	21-Aug-2006		7	---	< 0.2	< 0.06	17	---	< 0.005	0.05	0.00003	< 0.007	0.005	0.271	< 0.001	< 0.00005	< 0.006	0.017	< 0.001	< 0.0001	---	0.004	< 0.005
	23-Aug-2006		---	---	---	---	---	< 0.005	< 0.005	---	0.00003	---	0.005	---	< 0.001	---	---	---	< 0.001	< 0.0001	< 0.0008	0.004	---
	19-Aug-2008		14	---	0.11	0.008	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2010		18	7.87	0.061	0.025	9	0.004	0.0009	0.09	0.000091	< 0.001	0.0049	< 0.06	< 0.0002	---	0.0039	0.0073	0.0005	< 0.0001	< 0.0002	0.0069	0.008
	19-Aug-2011		20	---	0.27	0.022	< 2	< 0.01	< 0.002	0.08	0.00012	**< 0.01**	0.004	0.07	< 0.002	---	< 0.002	0.008	< 0.002	**< 0.001**	< 0.002	0.006	< 0.03
B38 00-32-44	19-Dec-2000	**W-CAT-3**	66.4	6.90	< 0.003	< 0.003	---	---	---	---	---	---	---	0.02	---	---	---	---	---	---	---	---	---
	21-Jul-2001		240	7.2	< 0.02	< 0.005	---	< 0.02	< 0.05	0.399	< 0.002	< 0.005	< 0.005	**5.68**	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	29-Aug-2001		312	8.0	< 0.02	< 0.005	**155**	**0.34**	< 0.05	0.476	< 0.002	< 0.005	< 0.005	1.46	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	20-Aug-2002		300	7.7	< 0.02	< 0.005	---	0.05	**0.06**	0.472	< 0.002	< 0.005	< 0.005	0.147	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	25-Aug-2003		**1910**	7.3	< 0.2	< 0.06	---	---	0.006	1.073	< 0.002	< 0.007	< 0.009	**12.23**	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.007
B38 02-17-3	20-Aug-2002	**W-CAT-1**	**281**	7.4	0.05	< 0.005	**59**	**0.294**	**0.011**	0.085	0.00051	< 0.001	0.0068	**7.05**	0.0097	< 0.00005	< 0.005	0.023	0.003	< 0.0001	< 0.0001	0.00614	**0.044**
	25-Aug-2003		**333**	6.5	< 0.2	< 0.06	---	---	**0.007**	0.211	< 0.002	< 0.007	< 0.009	**13.68**	**< 0.10**	< 0.00005	---	---	0.002	---	---	**< 1.0**	**0.041**
	23-Aug-2004		**22**	7.0	< 0.2	< 0.06	---	< 0.050	**< 0.050**	0.063	< 0.000170	< 0.005	**0.046**	**14.51**	< 0.010	< 0.00005	< 0.005	0.013	**< 0.010**	< 0.0010	< 0.0080	< 0.010	< 0.005
	24-Aug-2005		**153**	7.3	< 0.2	< 0.06	**24**	0.0321	**0.0196**	0.06	0.00003	< 0.007	0.006	0.807	< 0.001	0.00006	< 0.006	**0.033**	0.002	< 0.0001	< 0.0008	0.004	< 0.005
	21-Aug-2006		**424**	7.3	< 0.2	< 0.06	**43**	---	**0.008**	0.06	0.00072	< 0.007	0.01	**11.2**	< 0.001	< 0.00005	< 0.006	**0.057**	0.002	< 0.0001	---	0.008	0.009
	23-Aug-2006		---	---	---	---	---	0.018	**0.008**	---	0.00072	---	0.01	---	< 0.001	---	---	---	0.002	< 0.0001	< 0.0008	0.008	---
	20-Aug-2007		**404**	6.9	< 0.2	< 0.06	**14**	**0.072**	**0.011**	0.04	< 0.00001	**0.008**	0.0017	**38.5**	0.0002	---	0.0018	**0.0438**	**0.009**	0.0002	0.0011	0.0035	0.008
	19-Aug-2008		**370**	7.1	< 0.003	< 0.003	**66**	**0.055**	**0.009**	0.03	0.00006	0.002	0.0067	**28**	0.0003	---	0.0023	**0.045**	0.001	< 0.0001	< 0.0002	0.0088	0.021
(Duplicate)	19-Aug-2008		---	---	---	---	**47**	**0.079**	**0.011**	0.04	0.00006	0.002	0.0019	**32**	0.0003	---	0.0028	**0.052**	0.002	< 0.0001	< 0.0002	0.011	**0.053**
	19-Aug-2009		**89**	7.88	0.057	0.015	3	0.023	0.0034	0.09	0.00016	< 0.001	0.0047	4.3	0.0003	---	**0.044**	**0.039**	0.0015	< 0.0001	0.0002	**0.044**	0.024
(Duplicate)	19-Aug-2009		---	---	---	---	3	0.025	0.0043	0.09	0.00014	< 0.001	0.0035	**5.8**	0.0002	---	**0.038**	**0.035**	0.0017	< 0.0001	0.0002	**0.042**	0.020
	22-Aug-2010		**110**	7.25	1.6	0.014	5	**0.07**	0.006	0.08	0.00017	**< 0.01**	0.011	1.6	< 0.002	---	**0.007**	**0.032**	< 0.002	< 0.001	< 0.002	0.013	< 0.03
	17-Aug-2011		18	---	0.044	0.006	4	0.025	0.0023	0.13	< 0.00003	< 0.001	0.0004	**8.4**	< 0.0002	---	**0.0063**	0.013	0.0020	< 0.0001	< 0.0002	0.021	0.010
	19-Aug-2012		**30**	---	0.10	0.011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		6.4	---	0.014	0.014	4.1	0.012	0.0011	0.13	< 0.000020	< 0.0010	0.0024	2.4	< 0.00020	---	0.0037	0.0081	0.00068	< 0.00010	< 0.00020	0.011	0.0051
B38 02-24-7	20-Aug-2002	**W-CAT-3**	14.8	7.8	< 0.02	< 0.005	18	0.012	0.001	0.083	0.00049	< 0.001	0.0066	**6.39**	0.0016	< 0.00005	< 0.005	0.013	0.002	< 0.0001	< 0.0001	0.0152	**0.035**
	25-Aug-2003		20	6.8	0.2	< 0.06	---	---	< 0.005	< 0.050	< 0.002	< 0.007	< 0.009	**8.119**	**< 0.10**	< 0.00005	---	---	0.003	---	---	**< 1.0**	0.008
	23-Aug-2004		18	7.2	< 0.2	< 0.06	---	< 0.010	< 0.010	0.076	< 0.000034	< 0.005	0.006	**11.97**	< 0.002	< 0.00005	< 0.005	**0.026**	**0.005**	< 0.0002	< 0.0016	0.027	< 0.005
B38 02-36-3	20-Aug-2002	**W-CAT-1**	13.7	7.8	< 0.02	< 0.005	**15**	**0.072**	0.006	0.034	0.00009	0.001	0.0012	**30.4**	< 0.0005	< 0.00005	< 0.005	0.024	0.001	< 0.0001	< 0.0001	0.00326	**0.039**
	24-Aug-2003		14	6.8	< 0.2	< 0.06	---	---	**0.015**	< 0.050	< 0.002	< 0.007	< 0.009	**17.92**	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.008
	22-Aug-2004		10	7.2	< 0.2	< 0.06	---	< 0.005	< 0.005	0.031	0.000053	< 0.005	< 0.002	**19.96**	< 0.001	< 0.00005	< 0.005	0.021	0.002	< 0.0001	< 0.0008	0.003	< 0.005
	25-Aug-2005		13.1	7.5	< 0.2	< 0.06	**16**	0.005	**0.008**	< 0.05	0.00002	< 0.007	0.008	**23.9**	< 0.001	< 0.00005	< 0.006	0.012	0.003	< 0.0001	< 0.0008	0.003	**0.081**
(Duplicate)	25-Aug-2005		---	---	---	---	**14**	0.005	**0.008**	< 0.05	0.00001	< 0.007	0.005	**25.6**	< 0.001	< 0.00005	< 0.006	0.008	0.002	< 0.0001	< 0.0008	0.003	**0.081**
	21-Aug-2006		12	7.6	< 0.2	< 0.06	**15**	< 0.005	**0.007**	< 0.05	0.00013	< 0.007	< 0.002	**28.3**	< 0.001	< 0.00005	< 0.006	0.022	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
(Duplicate)	21-Aug-2006		---	---	---	---	**27**	---	**0.008**	< 0.05	0.00007	< 0.007	< 0.002	**33.7**	< 0.001	< 0.00005	< 0.006	0.021	**0.004**	< 0.0001	---	< 0.001	0.014
	19-Aug-2008		18	7.4	< 0.003	< 0.003	**17**	< 0.001	0.002	0.03	0.00001	< 0.001	0.0074	3.3	< 0.0002	---	< 0.0002	0.015	< 0.001	< 0.0001	< 0.0002	0.011	**0.27**
	17-Aug-2009		**19**	7.20	0.017	< 0.003	**14**	0.004	0.0022	< 0.02	0.000043	< 0.001	0.0042	0.11	< 0.0002	---	0.0008	0.013	0.0006	< 0.0001	< 0.0002	0.014	0.013
	19-Aug-2010		16	7.34	0.023	0.003	4	0.003	0.0035	< 0.02	0.000012	< 0.001	0.0012	**22**	< 0.0002	---	0.0007	0.015	0.0009	< 0.0001	< 0.0002	0.0058	0.011
	19-Aug-2012		13	---	0.0073	0.0054	5.8	0.012	**0.0093**	0.027	< 0.000025	< 0.0010	0.00065	**64**	< 0.00020	---	0.0014	0.017	0.0011	< 0.00010	< 0.00020	0.0011	0.0091

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals															
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
B38 03-37-5	25-Aug-2003	**W-CAT-1**	27	7.1	< 0.2	< 0.06	---	---	< 0.005	0.111	< 0.002	< 0.007	< 0.009	2.500	**< 0.10**	< 0.00005	---	---	0.005	---	---	**< 1.0**	< 0.005
B38 03-38-5	25-Aug-2003	**W-CAT-1**	33	7.1	< 0.2	< 0.06	---	---	< 0.005	0.104	< 0.002	< 0.007	< 0.009	1.342	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.014
	23-Aug-2004		34	7.7	< 0.2	< 0.06	---	< 0.005	0.011	0.115	< 0.000017	< 0.005	< 0.002	5.482	< 0.001	< 0.00005	< 0.005	< 0.008	0.003	< 0.0001	< 0.0008	0.002	< 0.005
	25-Aug-2005		21.9	7.9	< 0.2	< 0.06	23	< 0.005	0.0187	0.11	< 0.00001	< 0.007	< 0.002	5.96	< 0.001	0.00006	< 0.006	< 0.008	0.007	< 0.0001	< 0.0008	0.001	0.103
	21-Aug-2006		31	7.8	< 0.2	< 0.06	28	---	0.009	0.1	< 0.00001	< 0.007	< 0.002	6.07	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	---	< 0.001	< 0.005
	23-Aug-2006		---	---	---	---	---	< 0.005	0.009	---	< 0.00001	---	< 0.002	---	< 0.001	---	---	---	< 0.001	< 0.0001	< 0.0008	< 0.001	---
	20-Aug-2007		35	7.5	< 0.2	< 0.06	44	0.018	0.013	0.1	< 0.00001	0.010	0.0014	3.03	< 0.0002	---	0.0017	0.0018	0.015	< 0.0001	< 0.0002	0.0015	0.014
	19-Aug-2008		41	7.7	0.003	< 0.003	66	0.006	0.009	0.08	< 0.00001	< 0.001	0.0051	7.1	< 0.0002	---	0.0008	0.0027	< 0.001	< 0.0001	< 0.0002	0.0005	0.085
	17-Aug-2009		38	7.55	0.005	< 0.003	25	0.11	0.0096	0.09	0.000007	< 0.001	0.0041	6.3	0.0003	---	0.0013	0.0037	0.0004	< 0.0001	< 0.0002	0.0006	0.010
	22-Aug-2010		41	8.06	< 0.003	< 0.003	47	0.001	0.0063	0.1	0.000006	< 0.001	0.0009	2.1	< 0.0002	---	0.0022	0.0025	0.0006	< 0.0001	< 0.0002	0.0005	0.006
	19-Aug-2011		46	---	0.014	0.010	35	< 0.01	0.011	0.11	< 0.00005	**< 0.01**	< 0.002	9.4	< 0.002	---	0.003	< 0.005	< 0.002	< 0.001	< 0.002	< 0.001	< 0.03
	19-Aug-2012		49	---	< 0.0030	< 0.0030	21	0.0023	0.011	0.1	< 0.000025	< 0.0010	< 0.00020	9.8	< 0.00020	---	0.0036	0.0032	0.00084	< 0.00010	< 0.00020	0.00048	< 0.0030
	26-Aug-2013		68	---	0.0076	< 0.0030	85	< 0.0030	0.0094	0.1	< 0.000025	< 0.0010	0.043	6.5	< 0.00020	---	0.0071	0.0052	0.00076	< 0.00010	< 0.00020	0.00039	< 0.0030
	01-Aug-2014		85	---	0.11	< 0.010	21	0.0062	0.015	0.11	< 0.000020	< 0.0010	0.00092	18	< 0.00020	---	0.0026	0.0037	0.00043	< 0.00010	< 0.00020	0.00014	0.011
	09-Aug-2015		98	---	< 0.010	< 0.010	19	< 0.0030	0.016	0.11	< 0.000020	< 0.0010	0.0021	18	< 0.00020	---	0.0025	0.0020	0.00052	< 0.00010	< 0.00020	0.00015	0.011
	04-Aug-2016		96	---	< 0.010	< 0.010	---	0.0036	0.0086	0.098	< 0.000020	< 0.0010	0.00050	7.1	< 0.00020	---	0.0054	0.0055	0.00046	< 0.00010	< 0.00020	0.00029	0.0045
	13-Aug-2017		110	---	< 0.010	< 0.010	---	0.015	0.014	0.11	< 0.000020	< 0.0010	0.00021	14	< 0.00020	---	0.0043	0.0026	0.00045	< 0.00010	< 0.00020	0.00093	0.019
B38 03-40-5	25-Aug-2003	**W-CAT-1**	51	7.0	< 0.2	< 0.06	---	---	< 0.005	0.111	< 0.002	< 0.007	< 0.009	0.748	**< 0.10**	< 0.00005	---	---	0.003	---	---	**< 1.0**	< 0.005
B38 08-2-4	22-Aug-2010	**W-CAT-1**	14	7.41	< 0.003	< 0.003	390	0.008	0.0039	0.03	< 0.00003	< 0.001	0.0012	12	0.0011	---	< 0.0002	0.030	0.0033	< 0.0001	< 0.0002	0.0051	0.010
	17-Aug-2011		9	7.24	< 0.003	< 0.003	190	0.012	0.0064	0.03	0.000019	< 0.001	0.0014	40	0.0005	---	0.0002	0.035	0.010	< 0.0001	< 0.0002	0.0026	0.013
	26-Aug-2013		9.6	6.82	< 0.0030	0.0056	110	0.0083	0.0075	0.046	< 0.000025	< 0.0010	0.00070	60	< 0.00020	---	0.0014	0.030	0.0023	< 0.00010	< 0.00020	0.0091	< 0.0030
	09-Aug-2015		6.3	6.98	< 0.010	< 0.010	170	0.0079	0.0044	0.036	< 0.000020	< 0.0010	0.0021	34	0.00074	---	0.00064	0.026	0.0029	< 0.00010	< 0.00020	0.0030	0.0065
	03-Aug-2016		6.1	7.25	< 0.010	< 0.010	---	0.0085	0.0064	0.036	0.000022	< 0.0010	0.00062	41	0.00063	---	0.00089	0.024	0.0013	< 0.00010	< 0.00020	0.0032	0.011
B38 08-3-4	19-Aug-2008	**W-CAT-1**	36	7.5	0.010	< 0.003	8	---	---	---	---	---	---	0.44	---	---	---	---	---	---	---	---	---
	17-Aug-2009		19	7.63	0.035	< 0.003	< 2	0.009	0.0015	0.05	0.00034	< 0.001	0.0073	0.24	< 0.0002	---	0.0016	0.024	0.0010	< 0.0001	< 0.0002	0.0021	0.018
	22-Aug-2010		59	7.96	0.003	< 0.003	< 2	0.004	0.0040	0.05	< 0.00003	< 0.001	0.0017	0.19	< 0.0002	---	0.0039	0.013	0.0006	< 0.0001	< 0.0002	0.0024	0.006
	19-Aug-2011		10	---	0.034	0.003	< 2	< 0.01	< 0.002	0.05	< 0.00005	**< 0.01**	0.003	0.37	< 0.002	---	0.007	0.011	< 0.002	< 0.001	< 0.002	0.002	< 0.03
	19-Aug-2012		5.1	---	< 0.0030	< 0.0030	3.1	0.0050	0.013	0.047	< 0.000025	< 0.0010	0.00047	1.6	0.00030	---	0.0072	0.0073	0.00083	< 0.00010	< 0.00020	0.0016	< 0.0030
	01-Aug-2014		---	---	---	---	---	0.0074	0.0081	0.038	< 0.000020	< 0.0010	0.00051	18	< 0.00020	---	0.0065	0.0063	0.00063	< 0.00010	< 0.00020	0.00040	0.0044
B38 08-4-4	19-Aug-2008	**W-CAT-1**	27	7.5	0.003	< 0.003	110	0.013	0.004	0.06	0.00009	0.001	0.011	0.07	< 0.0002	---	0.015	0.017	< 0.001	< 0.0001	< 0.0002	0.0066	0.11
B38 93-1-2	09-Sep-1998	**W-CAT-1**	7	7.5	0.05	0.033	17	< 0.02	**< 0.04**	0.03	< 0.002	< 0.002	0.003	< 0.003	< 0.02	< 0.00005	< 0.004	< 0.008	**< 0.03**	< 0.01	< 0.02	---	< 0.002
	15-Sep-1999		7.0	7.8	0.02	0.006	5	0.02	0.002	0.047	0.0005	0.004	< 0.001	0.803	< 0.001	< 0.00005	0.007	0.011	0.001	< 0.0001	< 0.02	---	< 0.002
	17-Sep-2000		9.6	6.9	< 0.02	< 0.005	11	< 0.02	0.001	0.039	0.0003	< 0.005	< 0.005	0.036	< 0.001	< 0.00005	< 0.005	0.014	< 0.001	< 0.0001	**< 0.03**	---	< 0.005
	26-Aug-2001		9.4	7.0	0.07	0.032	3	< 0.02	**< 0.05**	0.049	< 0.002	< 0.005	< 0.005	0.326	**< 0.03**	---	< 0.005	< 0.008	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
B38 93-11-2	09-Sep-1998	**W-CAT-1**	119	7.2	< 0.02	0.04	1000	< 0.02	**< 0.04**	0.021	< 0.002	0.002	< 0.001	0.913	< 0.02	---	< 0.004	0.018	0.04	< 0.01	< 0.02	---	0.02
B38 93-13-6	27-Sep-2000	**W-CAT-3**	27	7.7	< 0.02	< 0.005	---	< 0.02	< 0.05	0.074	< 0.002	< 0.005	< 0.005	0.154	0.08	---	< 0.005	0.010	**< 0.03**	**< 0.01**	< 0.03	---	0.064
	26-Aug-2001		26.7	7.6	< 0.02	0.008	275	0.21	< 0.05	0.087	< 0.002	< 0.005	< 0.005	0.974	0.04	---	< 0.005	0.010	**< 0.03**	**< 0.01**	< 0.03	---	0.009

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols: Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Dissolved Metals: Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
B38 93-2-4	07-Sep-1997	**W-CAT-1**	15.5	7.9	0.11	0.022	---	0.08	< 0.0005	0.076	< 0.002	0.004	0.003	0.053	0.001	< 0.00005	< 0.004	0.014	< 0.0005	< 0.01	< 0.02	---	0.012
	09-Sep-1998		14.7	7.7	0.16	< 0.005	3	< 0.02	0.07	0.055	< 0.002	< 0.002	< 0.001	0.017	< 0.02	---	< 0.004	0.009	**< 0.03**	< 0.01	< 0.02	---	< 0.002
	15-Sep-1999		11	8.1	0.04	0.014	---	0.02	0.002	0.062	0.0002	0.004	< 0.001	0.588	0.002	< 0.00005	< 0.004	0.013	0.002	< 0.0001	< 0.02	---	0.003
	18-Oct-1999		---	---	---	---	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		7.7	6.9	0.10	0.008	6	< 0.02	0.001	0.051	0.0002	< 0.005	< 0.005	0.009	< 0.001	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	**< 0.03**	---	0.008
(Duplicate)	17-Sep-2000		8.0	6.9	0.08	0.012	5	< 0.02	0.001	0.047	0.0001	< 0.005	< 0.005	0.020	0.002	< 0.00005	< 0.005	< 0.008	0.002	< 0.0001	**< 0.03**	---	0.006
	26-Aug-2001		6.8	7.1	0.08	< 0.005	3	< 0.02	**< 0.05**	0.059	< 0.002	< 0.005	< 0.005	0.006	**< 0.03**	---	< 0.005	< 0.008	**< 0.03**	< 0.01	**< 0.03**	---	0.008
	20-Aug-2002		9.9	7.6	0.06	< 0.005	---	0.018	< 0.001	0.048	0.00021	< 0.001	0.0047	0.055	< 0.0005	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.0001	0.00692	0.042
	25-Aug-2003		7	6.7	< 0.2	< 0.06	---	---	< 0.005	< 0.050	< 0.002	< 0.007	< 0.009	0.044	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.011
B38 93-20-7	19-Dec-2000	**W-CAT-3**	42.9	7.18	< 0.003	< 0.003	---	---	---	---	---	---	---	3.61	---	---	---	---	---	---	---	---	---
	27-Aug-2001		38.2	8.1	< 0.02	< 0.005	194	< 0.02	< 0.05	0.117	< 0.002	< 0.005	< 0.005	1.72	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	25-Aug-2003		54	7.1	1.1	< 0.06	---	---	0.016	0.12	< 0.002	< 0.007	< 0.009	9.402	**< 0.10**	< 0.00005	---	---	0.001	---	---	**< 1.0**	0.009
(Duplicate)	25-Aug-2003		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2005		51.1	---	< 0.2	< 0.06	101	< 0.005	0.0316	0.16	0.00010	< 0.007	0.003	0.113	0.001	< 0.00005	0.021	0.011	0.0120	< 0.0001	< 0.0008	0.002	< 0.005
	21-Aug-2006		45	---	< 0.2	< 0.06	61	---	0.019	0.16	0.00002	< 0.007	< 0.002	10.3	0.001	< 0.00005	< 0.006	0.044	0.005	< 0.0001	---	< 0.001	< 0.005
	23-Aug-2006		---	---	---	---	---	< 0.005	0.019	---	0.00002	---	< 0.002	---	0.001	---	---	---	0.005	< 0.0001	< 0.0008	< 0.001	---
	20-Aug-2007		40	---	< 0.2	< 0.06	14	0.003	0.043	0.2	< 0.00001	0.002	0.0026	0.22	0.0069	---	0.0313	0.0042	0.011	< 0.0001	< 0.0002	0.0034	0.013
	19-Aug-2008		38	---	< 0.003	< 0.003	31	< 0.001	0.011	0.16	< 0.00001	< 0.001	0.0057	2.3	0.0075	---	0.0006	0.0041	< 0.001	< 0.0001	< 0.0002	0.0009	0.017
	19-Aug-2009		41	7.49	0.008	< 0.003	14	0.001	0.039	0.14	0.000014	< 0.001	0.0026	5.7	0.0050	---	0.0033	0.014	0.0025	< 0.0001	< 0.0002	0.0071	0.009
	10-Sep-2016		20	7.54	< 0.010	< 0.010	15	0.0039	0.0054	0.17	< 0.000020	< 0.0010	< 0.00020	2.3	0.00021	---	0.0010	0.023	0.00091	< 0.00010	< 0.00020	0.00082	0.0046
B38 97-9-5	09-Sep-1998	**W-CAT-1**	291	6.8	0.04	0.005	1960	< 0.02	**< 0.04**	0.02	< 0.002	0.004	0.003	0.246	0.27	---	< 0.004	0.031	**< 0.03**	< 0.01	< 0.02	---	< 0.002
	15-Sep-1999		---	---	---	---	---	< 0.02	0.021	0.023	< 0.002	0.004	0.003	0.878	0.440	---	< 0.004	0.036	0.020	< 0.01	< 0.02	---	0.002
	17-Sep-2000		270	7.2	0.07	0.011	3190	0.05	< 0.001	0.018	< 0.0001	< 0.005	0.014	0.083	0.754	< 0.00005	< 0.005	0.027	0.063	< 0.0001	**< 0.03**	---	0.032
	25-Aug-2003		122	7.1	< 0.2	0.08	---	---	< 0.005	< 0.050	< 0.002	< 0.007	< 0.009	0.032	0.90	< 0.00005	---	---	0.024	---	---	**< 1.0**	0.063
B38 98-19-5	09-Sep-1998	**W-CAT-1**	29	8.2	< 0.02	0.024	76	0.02	0.004	0.112	< 0.0001	0.007	0.004	0.479	< 0.001	< 0.00005	< 0.004	< 0.008	0.001	< 0.0001	< 0.02	---	< 0.002
(Duplicate)	09-Sep-1998		29	8.2	< 0.02	0.036	70	< 0.02	0.007	0.113	< 0.0001	0.005	0.002	0.477	< 0.001	< 0.00005	< 0.004	< 0.008	0.001	< 0.0001	< 0.02	---	< 0.002
	15-Sep-1999		32	8.3	< 0.02	< 0.005	---	< 0.02	0.025	0.1	< 0.0001	0.003	< 0.001	10.5	< 0.001	< 0.00005	0.006	< 0.008	< 0.001	< 0.0001	< 0.02	---	< 0.002
	18-Oct-1999		---	---	---	---	40	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		32	7.3	< 0.02	< 0.005	336	< 0.02	0.003	0.094	< 0.0001	< 0.005	< 0.005	0.494	0.007	< 0.00005	< 0.005	< 0.008	0.007	< 0.0001	**< 0.03**	---	< 0.005
	27-Aug-2001		38.7	8.0	< 0.02	< 0.005	312	0.07	**< 0.05**	0.121	< 0.002	< 0.005	< 0.005	5.02	**< 0.03**	---	< 0.005	< 0.008	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	25-Aug-2003		41	7.0	0.7	< 0.06	---	---	0.011	0.13	< 0.002	< 0.007	< 0.009	7.796	**< 0.10**	< 0.00005	---	---	0.002	---	---	**< 1.0**	< 0.005
	23-Aug-2004		39	---	< 0.2	< 0.06	---	< 0.010	0.013	0.163	< 0.000034	< 0.005	0.006	13.83	< 0.002	< 0.00005	< 0.005	< 0.008	0.008	< 0.0002	< 0.0016	0.004	< 0.005
	24-Aug-2005		39.5	---	< 0.2	< 0.06	82	< 0.005	0.0402	0.16	0.00002	< 0.007	0.003	0.157	< 0.001	0.00005	< 0.006	0.014	0.01	< 0.0001	< 0.0008	0.003	< 0.005
	21-Aug-2006		36	---	< 0.2	< 0.06	79	---	0.022	0.16	0.00005	< 0.007	< 0.002	6.12	< 0.001	< 0.00005	< 0.006	0.015	0.006	< 0.0001	---	0.014	< 0.005
(Duplicate)	21-Aug-2006		---	---	---	---	82	---	0.033	0.15	< 0.00001	< 0.007	< 0.002	7.07	< 0.001	< 0.00005	< 0.006	0.012	0.008	< 0.0001	---	0.013	< 0.005
	23-Aug-2006		---	---	---	---	---	< 0.005	0.022	---	0.00005	---	< 0.002	---	< 0.001	---	---	---	0.006	< 0.0001	< 0.0008	0.014	---
	10-Sep-2016		---	---	---	---	35	< 0.0030	0.0035	0.17	0.00010	< 0.0010	< 0.00020	13	< 0.00020	---	0.00028	0.0022	0.0013	< 0.00010	< 0.00020	0.0022	< 0.0030
B38 98-21-18	25-Aug-2003	**W-CAT-3**	23	7.0	0.7	< 0.06	---	---	< 0.005	0.128	< 0.002	< 0.007	< 0.009	9.734	**< 0.10**	< 0.00005	---	---	0.005	---	---	**< 1.0**	0.007
B38 98-22-3	09-Sep-1998	**W-CAT-1**	33	7.8	0.13	0.038	8	0.05	0.003	0.078	0.0002	0.004	0.002	0.275	< 0.001	< 0.00005	0.013	0.024	0.007	< 0.0001	< 0.02	---	0.039
	15-Sep-1999		39	8.1	< 0.02	< 0.005	4	0.02	0.002	0.091	0.0001	0.004	< 0.001	0.656	< 0.001	< 0.00005	0.016	0.026	0.002	< 0.0001	< 0.02	---	0.072
	17-Sep-2000		29	7.2	< 0.02	< 0.005	10	< 0.02	< 0.001	0.071	0.0002	< 0.005	< 0.005	0.008	< 0.001	< 0.00005	0.009	0.012	0.002	< 0.0001	**< 0.03**	---	0.085
	26-Aug-2001		29.2	7.8	0.77	0.043	2	< 0.02	**< 0.05**	0.062	< 0.002	< 0.005	< 0.005	0.028	**< 0.03**	---	0.023	0.010	**< 0.03**	< 0.01	**< 0.03**	---	0.040
	25-Aug-2003		17	7.1	< 0.2	< 0.06	---	---	< 0.005	0.09	< 0.002	< 0.007	< 0.009	0.026	**< 0.10**	< 0.00005	---	---	0.009	---	---	**< 1.0**	0.060
	17-Aug-2009		27	7.28	0.055	< 0.003	3	0.003	0.0003	0.08	0.00049	< 0.001	0.0059	< 0.06	< 0.0002	---	0.014	0.021	0.0008	< 0.0001	0.0002	0.016	0.077

Advisian
WorleyParsons Group

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols: Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Dissolved Metals: Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
B38 98-6-5	09-Sep-1998	**W-CAT-1**	160	8.0	< 0.02	0.006	56	0.03	0.004	0.033	< 0.0001	0.006	0.003	3.14	< 0.001	< 0.00005	< 0.004	< 0.008	0.001	< 0.0001	< 0.02	---	< 0.002
	15-Sep-1999		130	8.1	0.02	< 0.005	69	0.02	0.007	0.03	< 0.0001	0.003	< 0.001	8.95	< 0.001	< 0.00005	0.006	< 0.008	0.002	< 0.0001	< 0.02	---	< 0.002
	17-Sep-2000		150	6.9	< 0.02	< 0.005	179	< 0.02	0.003	0.019	< 0.0001	< 0.005	< 0.005	0.717	< 0.001	< 0.00005	< 0.005	0.011	0.002	< 0.0001	**< 0.03**	---	< 0.005
	26-Aug-2001		123	7.6	< 0.02	< 0.005	167	< 0.02	**< 0.05**	0.031	< 0.002	< 0.005	< 0.005	0.212	**< 0.03**	---	< 0.005	< 0.008	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	20-Aug-2002		96.6	7.7	< 0.02	< 0.005	---	0.033	0.021	0.03	< 0.00001	< 0.001	0.0009	34.3	< 0.0005	< 0.00005	< 0.005	0.011	0.002	< 0.0001	< 0.0001	0.00462	0.021
	24-Aug-2003		106	6.8	< 0.2	< 0.06	---	---	0.025	< 0.050	< 0.002	< 0.007	< 0.009	39.52	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
B38 98-7-3	09-Sep-1998	**W-CAT-1**	103	8.0	1.26	0.019	7	< 0.02	**< 0.04**	0.06	< 0.002	0.002	0.002	0.013	< 0.02	---	< 0.004	0.008	**< 0.03**	< 0.01	< 0.02	---	< 0.002
	15-Sep-1999		95	8.0	< 0.02	< 0.005	---	0.03	0.001	0.052	0.0003	0.004	0.002	0.051	< 0.001	< 0.00005	0.006	0.010	0.001	< 0.0001	< 0.02	---	0.011
	17-Sep-2000		140	7.1	< 0.02	< 0.005	13	< 0.02	< 0.001	0.05	0.0004	< 0.005	< 0.005	0.006	< 0.001	< 0.00005	< 0.005	0.013	< 0.001	< 0.0001	**< 0.03**	---	0.010
	26-Aug-2001		148	7.7	< 0.02	< 0.005	4	0.02	**< 0.05**	0.079	< 0.002	< 0.005	< 0.005	0.015	**< 0.03**	---	< 0.005	0.011	**< 0.03**	< 0.01	**< 0.03**	---	0.005
	20-Aug-2002		144	7.7	< 0.02	< 0.005	---	0.093	< 0.001	0.046	0.00035	< 0.001	0.0070	0.238	< 0.0005	< 0.00005	< 0.005	0.013	0.002	< 0.0001	< 0.0001	0.0144	0.016
(Duplicate)	20-Aug-2002		164	7.5	< 0.02	< 0.005	10	0.054	< 0.001	0.048	0.00039	< 0.001	0.0073	0.106	< 0.0005	< 0.00005	< 0.005	0.011	< 0.001	< 0.0001	< 0.0001	0.0129	0.021
	25-Aug-2003		192	6.7	< 0.2	< 0.06	---	---	< 0.005	< 0.050	< 0.002	< 0.007	< 0.009	0.040	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.015
B38 98-8-4	09-Sep-1998	**W-CAT-1**	27	7.9	< 0.02	0.012	276	0.03	0.007	0.074	< 0.0001	0.004	< 0.001	3.10	< 0.001	**< 0.00005**	< 0.004	0.017	0.002	< 0.0001	< 0.02	---	< 0.002
	27-Sep-2000		27	7.4	< 0.02	0.006	---	< 0.02	0.05	0.041	< 0.002	0.005	< 0.005	0.214	**< 0.03**	---	< 0.005	0.027	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	26-Aug-2001		28.9	7.3	< 0.02	< 0.005	1740	0.12	**< 0.05**	0.099	< 0.002	< 0.005	< 0.005	0.713	**< 0.03**	---	< 0.005	0.014	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	20-Aug-2002		25.6	6.9	< 0.02	< 0.005	---	0.183	0.009	0.072	0.00002	< 0.001	0.0022	4.97	0.0016	0.00073	< 0.005	0.023	0.004	< 0.0001	< 0.0001	0.00637	0.021
	25-Aug-2003		27	6.9	< 0.2	< 0.06	---	---	0.006	< 0.050	< 0.002	< 0.007	< 0.009	10.86	**< 0.10**	< 0.00005	---	---	0.003	---	---	**< 1.0**	0.005
B38 99-14-4	27-Sep-2000	**W-CAT-1**	28	7.7	< 0.02	0.005	---	< 0.02	0.08	0.083	< 0.002	< 0.005	< 0.005	0.770	**< 0.03**	---	< 0.005	< 0.008	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	26-Aug-2001		59.6	7.6	< 0.02	0.007	1090	0.19	**< 0.05**	0.114	< 0.002	< 0.005	< 0.005	1.68	**< 0.03**	---	< 0.005	< 0.008	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
B38 99-15-4	27-Sep-2000	**W-CAT-3**	78	7.0	< 0.02	0.006	---	0.03	< 0.05	0.034	0.002	0.005	0.006	0.620	**< 0.03**	---	< 0.005	0.017	**< 0.03**	**< 0.01**	< 0.03	---	0.045
	27-Aug-2001		61.3	7.4	< 0.02	< 0.005	13	0.04	< 0.05	0.037	< 0.002	< 0.005	< 0.005	12.6	**< 0.03**	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	20-Aug-2002		66.7	6.8	< 0.02	0.006	---	0.272	0.005	0.043	< 0.00010	< 0.001	0.0021	13.4	0.0130	0.00082	< 0.005	0.017	0.005	< 0.0001	< 0.0001	0.00972	0.019
	25-Aug-2003		66	6.8	< 0.2	< 0.06	---	---	0.005	< 0.050	< 0.002	< 0.007	< 0.009	27.12	**< 0.10**	< 0.00005	---	---	0.002	---	---	**< 1.0**	0.007
B38 99-4-30	25-Aug-2003	**W-CAT-3**	8	7.1	< 0.2	< 0.06	---	---	< 0.005	< 0.050	< 0.002	< 0.007	< 0.009	0.022	**< 0.10**	< 0.00005	---	---	0.003	---	---	**< 1.0**	< 0.005
B38 DP99-1	18-Sep-1999	**W-CAT-1**	670	6.9	0.02	0.007	---	0.03	0.002	0.106	0.0005	0.008	0.003	0.027	< 0.001	< 0.00005	< 0.004	0.023	< 0.001	< 0.0001	< 0.02	---	0.005
	17-Sep-2000		120	7.3	< 0.02	< 0.005	6	0.03	0.001	0.052	0.0001	< 0.005	< 0.005	0.035	< 0.001	< 0.00005	< 0.005	0.009	0.001	< 0.0001	**< 0.03**	---	0.005
B38 MP00-2	21-Sep-2000	**W-CAT-1**	---	---	---	---	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38 MP00-3	21-Sep-2000	**W-CAT-1**	---	---	---	---	15	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38 MP00-4	21-Sep-2000	**W-CAT-1**	---	---	---	---	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B38-N-OBS-59	06-Jul-2016	**W-CAT-1**	4.3	7.08	< 0.010	< 0.010	82	0.055	0.0068	< 0.020	0.000044	< 0.0010	0.00074	40	0.00068	---	0.016	0.0072	0.0018	< 0.00010	< 0.00020	0.0037	< 0.0030
B38-N-OBS-61	06-Jul-2016	**W-CAT-1**	15	7.11	< 0.010	0.011	100	0.0069	0.0058	0.021	0.00021	< 0.0010	< 0.00020	37	0.0020	---	0.00065	0.0048	0.0013	< 0.00010	< 0.00020	0.00017	0.0090
B38-N-OBS-62	19-Aug-2012	**W-CAT-1**	30	7.44	0.0034	0.0047	99	0.0055	0.0060	0.044	0.000030	< 0.0010	0.00038	12	< 0.00020	---	0.029	0.015	0.0011	< 0.00010	< 0.00020	0.0082	0.0051
	06-Jul-2016		9.9	7.34	0.074	< 0.010	< 4.0	0.0042	0.0020	0.034	0.00010	0.0017	0.00070	2.4	< 0.00020	---	0.079	0.058	0.0011	< 0.00010	0.00074	0.032	0.032
B38-16-1-3	12-Aug-2017	**W-CAT-1**	8.0	---	< 0.010	< 0.010	18	0.011	0.0080	0.061	0.000039	< 0.0010	0.0018	19	0.00025	---	0.0026	0.013	0.00049	< 0.00010	< 0.00020	0.0018	0.012
	13-Jul-2018		9.3	---	< 0.010	< 0.010	24	0.012	0.012	0.044	0.000034	< 0.0010	0.0019	29	0.00025	---	0.0014	0.0098	0.00046	< 0.00010	< 0.00020	0.0024	0.0074
B38X-EW1	28-Jul-1999	**W-CAT-3**	40	7.6	---	---	---	0.05	< 0.04	0.121	< 0.002	0.002	0.006	0.156	0.04	---	< 0.004	0.012	**< 0.03**	**< 0.01**	< 0.02	---	0.006
B38X-N-OBS26	01-Oct-2001	**W-CAT-1**	74.8	7.2	< 0.02	0.009	---	< 0.02	**< 0.05**	0.026	< 0.002	< 0.005	< 0.005	0.356	**< 0.03**	---	< 0.005	0.014	**< 0.03**	< 0.01	**< 0.03**	---	0.033
B38X-N-OBS7	01-Oct-2001	**W-CAT-3**	189	6.9	< 0.02	0.005	---	< 0.02	< 0.05	0.016	< 0.002	< 0.005	< 0.005	0.194	< 0.03	---	0.005	0.037	**< 0.03**	**< 0.01**	< 0.03	---	0.027
B38X-N-TR4	01-Oct-2001	**W-CAT-1**	87.4	7.2	< 0.02	0.008	---	0.04	**< 0.05**	0.023	< 0.002	< 0.005	< 0.005	0.149	**< 0.03**	---	0.041	0.281	**< 0.03**	< 0.01	**< 0.03**	---	0.090

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols: Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Dissolved Metals: Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
B38X-OBS1	03-Aug-2000	**W-CAT-3**	33	7.9	< 0.02	0.005	---	**0.17**	< 0.05	0.167	< 0.002	< 0.005	< 0.005	1.13	< 0.03	---	0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
B38X-OBS2	28-Jul-1999	**W-CAT-3**	41	8.1	---	---	---	< 0.02	**0.09**	0.111	< 0.002	< 0.002	0.002	0.150	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	< 0.002
B38X-OBS4	28-Jul-1999	**W-CAT-1**	**39**	7.7	---	---	---	**1.42**	**0.05**	0.139	< 0.002	0.002	0.005	3.75	< 0.02	---	< 0.004	< 0.008	**< 0.03**	< 0.01	< 0.02	---	0.015
B38X-OBS5	28-Jul-1999	**W-CAT-1**	**28**	7.8	---	---	---	0.03	**< 0.04**	0.166	< 0.002	0.002	0.002	0.201	< 0.02	---	< 0.004	< 0.008	**< 0.03**	< 0.01	< 0.02	---	0.010
B38X-OBS6	28-Jul-1999	**W-CAT-1**	**23**	8.1	---	---	---	**0.09**	**< 0.04**	0.052	< 0.002	< 0.002	< 0.001	0.412	< 0.02	---	< 0.004	0.008	**< 0.03**	< 0.01	0.02	---	0.009
B38X-OBS7	27-Sep-2000	**W-CAT-3**	250	7.1	0.02	0.020	---	< 0.02	< 0.05	0.008	< 0.002	< 0.005	0.006	0.425	< 0.03	---	< 0.005	**0.033**	**< 0.03**	**< 0.01**	< 0.03	---	**0.063**
B38X-OBS8	03-Aug-2000	**W-CAT-3**	48	7.9	< 0.02	< 0.005	---	0.09	< 0.05	0.114	< 0.002	< 0.005	< 0.005	0.293	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
B38X-OBS9	03-Aug-2000	**W-CAT-3**	49	8.0	0.05	0.008	---	0.10	< 0.05	0.141	< 0.002	< 0.005	< 0.005	0.123	< 0.03	---	0.005	0.010	**< 0.03**	**< 0.01**	< 0.03	---	0.005
B38X-OBS10	03-Aug-2000	**W-CAT-1**	**46**	7.9	< 0.02	< 0.005	---	0.04	**< 0.05**	0.116	< 0.002	< 0.005	< 0.005	0.523	**< 0.03**	---	< 0.005	< 0.008	**< 0.03**	< 0.01	**< 0.03**	---	0.010
B38X-OBS11	03-Aug-2000	**W-CAT-1**	**47**	8.1	< 0.02	< 0.005	---	0.03	**< 0.05**	0.089	< 0.002	< 0.005	< 0.005	0.093	**< 0.03**	---	< 0.005	0.009	**< 0.03**	< 0.01	**< 0.03**	---	0.013
FTA 00-7-5	17-Sep-2000	**W-CAT-1**	**69**	7.3	< 0.02	< 0.005	**539**	< 0.02	**0.007**	0.027	< 0.0001	< 0.005	< 0.005	0.122	**0.051**	< 0.00005	< 0.005	0.022	**0.014**	< 0.0001	**< 0.03**	---	< 0.005
(Duplicate)	17-Sep-2000		**69**	7.1	< 0.02	< 0.005	**326**	< 0.02	**0.007**	0.023	< 0.0001	< 0.005	< 0.005	0.116	**0.046**	< 0.00005	< 0.005	0.021	**0.011**	< 0.0001	**< 0.03**	---	< 0.005
	27-Aug-2001		**34.5**	7.3	< 0.02	< 0.005	**361**	0.03	**< 0.05**	0.036	< 0.002	< 0.005	0.008	0.108	**0.09**	---	< 0.005	0.015	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	25-Aug-2003		**122**	6.8	< 0.2	< 0.06	---	---	< 0.005	< 0.050	< 0.002	< 0.007	< 0.009	2.893	**< 0.10**	< 0.00005	---	---	**0.008**	---	---	**< 1.0**	0.006
FTA 00-8-5	17-Sep-2000	**W-CAT-1**	**930**	7.0	< 0.02	0.008	**151**	< 0.02	< 0.001	0.017	0.0002	0.005	< 0.005	0.157	< 0.001	< 0.00005	< 0.005	0.022	**0.004**	< 0.0001	**< 0.03**	---	< 0.005
	27-Aug-2001		**537**	6.9	< 0.02	< 0.005	**679**	< 0.02	**0.07**	0.037	< 0.002	0.006	< 0.005	0.232	**< 0.03**	---	< 0.005	0.016	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	21-Aug-2002		**563**	7.9	< 0.02	< 0.005	**496**	0.011	0.005	0.04	< 0.00010	< 0.001	0.0033	**18.8**	0.0010	**0.00106**	< 0.005	0.028	**0.006**	< 0.0001	< 0.0001	0.00800	0.023
	25-Aug-2003		**467**	6.7	0.3	< 0.06	---	---	**0.007**	< 0.050	< 0.002	< 0.007	< 0.009	**10.57**	**< 0.10**	< 0.00005	---	---	**0.006**	---	---	**< 1.0**	0.013
	23-Aug-2004		**890**	---	< 0.2	< 0.06	---	< 0.015	**< 0.015**	0.058	< 0.000051	< 0.005	0.012	**18.43**	< 0.003	< 0.00005	< 0.005	**0.045**	**0.009**	< 0.0003	< 0.0024	0.009	< 0.005
	25-Aug-2005		**748**	---	< 0.2	< 0.06	**170**	0.007	**0.0180**	< 0.05	0.00003	< 0.007	0.005	**29.0**	< 0.001	< 0.00005	< 0.006	**0.051**	**0.0230**	< 0.0001	< 0.0008	0.009	0.022
	21-Aug-2006		**476**	---	< 0.2	< 0.06	**91**	< 0.005	**0.025**	< 0.05	0.00034	< 0.007	0.009	**56.9**	< 0.001	< 0.00005	< 0.006	**0.068**	**0.028**	< 0.0001	< 0.0008	0.004	0.011
	19-Aug-2009		**410**	7.18	0.10	< 0.03	**230**	0.004	**0.020**	< 0.02	0.000008	< 0.001	0.0007	**71**	0.0004	---	**0.0052**	0.026	**0.015**	< 0.0001	< 0.0002	0.0023	0.011
	20-Aug-2010		**270**	7.13	0.053	**0.034**	**85**	0.004	**0.020**	< 0.02	< 0.00003	< 0.001	0.0009	**83**	0.0004	---	0.0031	0.016	**0.0073**	< 0.0001	< 0.0002	0.0010	0.006
FTA 00-9-5	20-Sep-2000	**W-CAT-1**	**42**	7.0	1.41	0.011	4	0.03	< 0.001	0.009	0.0004	< 0.005	< 0.005	0.014	< 0.001	< 0.00005	< 0.005	**0.032**	**0.008**	< 0.0001	**< 0.03**	---	0.019
	27-Aug-2001		**138**	6.7	4.90	**0.050**	< 1	0.03	**< 0.05**	0.013	< 0.002	< 0.005	< 0.005	0.016	**< 0.03**	---	**0.007**	**0.044**	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	21-Aug-2002		**86.2**	**8.2**	4.70	0.006	3	0.002	0.003	0.02	0.00035	< 0.001	0.0076	0.050	< 0.0005	< 0.00005	< 0.005	**0.056**	**0.020**	< 0.0001	0.0004	0.00221	**0.194**
	25-Aug-2003		**239**	6.3	0.8	< 0.06	---	---	< 0.005	< 0.050	< 0.002	< 0.007	< 0.009	0.046	**< 0.10**	< 0.00005	---	---	**0.010**	---	---	**< 1.0**	0.029
	23-Aug-2004		**89**	---	< 0.2	< 0.06	---	< 0.010	**< 0.010**	0.03	0.000255	< 0.005	0.008	0.176	< 0.002	< 0.00005	**0.011**	0.029	**0.012**	< 0.0002	< 0.0016	0.030	< 0.005
	25-Aug-2005		**115**	---	2.0	< 0.06	13	0.0108	< 0.005	< 0.05	0.00049	< 0.007	0.009	0.117	< 0.001	< 0.00005	< 0.006	**0.062**	**0.0152**	< 0.0001	0.0008	0.005	0.027
	21-Aug-2006		**40**	---	< 0.2	< 0.06	5	< 0.005	< 0.005	< 0.05	< 0.00001	< 0.007	0.005	4.06	< 0.001	< 0.00005	**0.007**	**0.049**	**0.011**	< 0.0001	0.0009	0.037	0.009
	21-Aug-2007		**65**	---	< 0.2	< 0.06	3	0.003	0.003	< 0.02	0.00012	< 0.001	**0.0287**	**7.08**	0.0034	---	**0.0078**	**0.0396**	**0.006**	< 0.0001	0.0006	0.0132	**0.044**
	19-Aug-2009		< 50	7.36	0.013	< 0.003	3	< 0.001	0.0026	< 0.02	0.000032	< 0.001	0.0023	2.5	< 0.0002	---	**0.018**	**0.059**	0.0011	< 0.0001	0.0007	0.027	0.019
	20-Aug-2010		15	7.19	0.041	0.008	< 2	< 0.001	0.0011	< 0.02	0.00005	< 0.001	0.0014	0.06	< 0.0002	---	**0.011**	**0.034**	0.0016	< 0.0001	0.0005	0.0089	0.008
	18-Aug-2011		17	---	< 0.003	< 0.003	< 2	< 0.01	< 0.002	< 0.02	< 0.00005	**< 0.01**	< 0.002	0.98	< 0.002	---	**0.006**	0.029	0.003	< 0.001	< 0.002	0.005	< 0.03
	31-Jul-2014		---	---	---	---	---	0.0043	< 0.00020	< 0.020	0.00015	< 0.0010	0.0040	< 0.060	0.00028	---	**0.0089**	0.018	**0.0058**	< 0.00010	0.00051	0.00086	0.0097

Advisian
WorleyParsons Group

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols: Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Dissolved Metals: Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
FTA 03-1-4	25-Aug-2003	**W-CAT-1**	160	6.8	< 0.2	< 0.06	---	---	< 0.005	0.053	< 0.002	< 0.007	0.013	3.943	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.007
	23-Aug-2004		85	7.3	< 0.2	< 0.06	---	< 0.010	**< 0.010**	0.052	< 0.000034	< 0.005	0.005	6.669	< 0.002	< 0.00005	< 0.005	0.021	< 0.002	< 0.0002	< 0.0016	0.008	< 0.005
	25-Aug-2005		85.8	7.4	< 0.2	< 0.06	40	0.006	0.0118	0.06	0.00005	< 0.007	0.005	26.6	< 0.001	< 0.00005	< 0.006	0.017	0.001	< 0.0001	< 0.0008	0.006	0.157
	21-Aug-2006		86	7.5	< 0.2	< 0.06	15	< 0.005	0.007	< 0.05	0.00025	< 0.007	0.003	13.3	< 0.001	< 0.00005	< 0.006	0.031	< 0.001	< 0.0001	< 0.0008	0.011	< 0.005
	20-Aug-2007		79	6.9	< 0.2	< 0.06	17	0.005	0.010	0.03	0.00001	0.002	0.0012	24.5	0.0006	---	0.0055	0.0153	0.003	< 0.0001	< 0.0002	0.0056	0.008
	19-Aug-2008		42	7.0	0.005	< 0.003	17	< 0.001	0.004	0.03	0.00002	< 0.001	0.0054	0.17	0.0004	---	0.0031	0.022	< 0.001	< 0.0001	< 0.0002	0.0078	0.034
(Duplicate)	19-Aug-2008		---	---	---	---	23	0.003	0.004	0.03	0.00004	< 0.001	0.0075	13	0.0005	---	0.0043	0.026	0.001	< 0.0001	< 0.0002	0.0090	0.073
	17-Aug-2009		71	7.21	0.013	< 0.003	8	0.005	0.0061	0.04	< 0.000005	< 0.001	0.0033	23	< 0.0002	---	0.0030	0.032	0.0004	< 0.0001	< 0.0002	0.017	0.015
(Duplicate)	17-Aug-2009		---	---	---	---	19	0.002	0.0069	0.04	< 0.000005	< 0.001	0.0028	26	< 0.0002	---	0.0032	0.031	0.0005	< 0.0001	< 0.0002	0.016	0.010
	22-Aug-2010		13	8.17	< 0.003	0.003	< 10	0.007	0.0078	0.06	< 0.00003	< 0.001	0.0009	34	< 0.0002	---	0.0017	0.0097	0.0003	< 0.0001	< 0.0002	0.0076	0.005
(Duplicate)	22-Aug-2010		---	---	---	---	< 10	0.007	0.0076	0.06	< 0.00003	< 0.001	0.0009	38	< 0.0002	---	0.0012	0.0098	0.0003	< 0.0001	< 0.0002	0.0066	0.006
	18-Aug-2011		50	---	0.017	< 0.003	3	< 0.01	0.002	0.04	< 0.00005	**< 0.01**	< 0.002	11	< 0.002	---	0.004	0.012	< 0.002	< 0.001	< 0.002	0.015	< 0.03
(Duplicate)	18-Aug-2011		---	---	---	---	5	0.01	0.003	0.04	< 0.00005	**< 0.01**	< 0.002	14	< 0.002	---	0.004	0.014	< 0.002	< 0.001	< 0.002	0.016	< 0.03
	20-Aug-2012		58	---	0.0093	0.0061	4.3	0.0074	0.0030	0.05	< 0.000025	< 0.0010	0.00032	41	< 0.00020	---	0.0022	0.013	0.00073	< 0.00010	< 0.00020	0.011	0.0075
(Duplicate)	20-Aug-2012		---	---	---	---	5.0	0.0089	0.0032	0.048	< 0.000025	< 0.0010	0.0018	41	< 0.00020	---	0.0021	0.014	0.00066	< 0.00010	< 0.00020	0.011	0.010
FTA 93-1-4	07-Sep-1997	**W-CAT-1**	79.5	8.0	< 0.02	< 0.005	8	0.04	0.0005	0.1	< 0.002	0.004	0.003	0.100	< 0.001	0.00009	< 0.004	< 0.008	0.0006	< 0.01	< 0.02	---	< 0.002
	09-Sep-1998		80	7.8	0.33	0.067	5	0.02	< 0.001	0.084	0.0001	0.003	0.004	0.301	< 0.001	< 0.00005	< 0.004	< 0.008	0.001	< 0.0001	< 0.02	---	< 0.002
	15-Sep-1999		89	8.4	< 0.02	< 0.005	---	< 0.02	0.003	0.076	0.0001	< 0.002	< 0.001	2.22	0.005	< 0.00005	0.010	< 0.008	0.002	< 0.0001	< 0.02	---	< 0.002
	17-Sep-2000		93	7.5	0.02	< 0.005	9	< 0.02	0.001	0.065	0.0001	< 0.005	< 0.005	0.112	0.001	< 0.00005	< 0.005	< 0.008	0.002	< 0.0001	**< 0.03**	---	< 0.005
	26-Aug-2001		58.0	7.9	< 0.02	< 0.005	3	< 0.02	**< 0.05**	0.086	< 0.002	< 0.005	< 0.005	0.161	**< 0.03**	---	< 0.005	< 0.008	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	21-Aug-2002		95.4	8.3	< 0.02	< 0.005	4	0.452	0.002	0.089	0.00005	< 0.001	0.0044	1.37	0.0013	0.00077	< 0.005	0.008	< 0.001	< 0.0001	< 0.0001	0.0110	0.021
FTA 98-4-5	27-Sep-2000	**W-CAT-1**	53	7.2	0.03	0.006	---	0.03	0.09	0.055	< 0.002	< 0.005	< 0.005	3.10	**< 0.03**	---	< 0.005	0.022	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	27-Aug-2001		23.8	7.1	< 0.02	< 0.005	985	0.05	**< 0.05**	0.053	< 0.002	< 0.005	< 0.005	5.65	0.03	---	< 0.005	< 0.008	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	21-Aug-2002		24.3	8.0	< 0.02	0.006	525	0.008	0.013	0.054	< 0.00001	< 0.001	0.0015	34.7	0.0015	0.00050	< 0.005	0.013	0.006	< 0.0001	< 0.0001	0.00492	0.011
	19-Aug-2008		78	---	0.003	< 0.003	980	0.010	0.009	0.05	0.00009	< 0.001	0.0028	8.9	0.0016	---	0.0028	0.014	0.002	< 0.0001	< 0.0002	0.0063	0.097
FTA 99-2-4	27-Sep-2000	**W-CAT-1**	930	6.9	0.03	< 0.030	---	< 0.02	0.05	0.014	< 0.002	0.005	< 0.005	2.04	**< 0.03**	---	< 0.005	0.039	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	26-Aug-2001		564	7.2	< 0.02	0.007	610	< 0.02	**< 0.05**	0.028	< 0.002	< 0.005	< 0.005	0.017	**< 0.03**	---	0.006	0.030	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	21-Aug-2002		511	7.9	< 0.02	< 0.005	285	0.022	0.010	0.023	< 0.00010	< 0.001	0.0029	57.2	0.0017	0.00033	< 0.005	0.036	0.005	< 0.0001	< 0.0001	0.00329	0.025
	25-Aug-2003		311	6.7	< 0.2	< 0.06	---	---	< 0.005	< 0.050	< 0.002	< 0.007	< 0.009	49.07	**< 0.10**	< 0.00005	---	---	0.002	---	---	**< 1.0**	0.008
	25-Aug-2005		348	---	< 0.2	< 0.06	562	0.008	0.0421	< 0.05	0.00004	< 0.007	0.004	23.1	0.006	< 0.00005	< 0.006	0.032	0.0220	< 0.0001	< 0.0008	0.006	0.113
	19-Aug-2008		220	---	0.003	< 0.003	310	< 0.001	0.013	< 0.02	0.00001	< 0.001	0.0029	0.59	0.0032	---	0.0018	0.039	0.002	< 0.0001	< 0.0002	0.0058	0.013
	22-Aug-2010		140	7.30	< 0.003	0.003	380	0.007	0.018	0.02	< 0.00003	< 0.001	0.0010	16	0.0014	---	0.0015	0.034	0.0027	< 0.0001	< 0.0002	0.0048	0.007
	18-Aug-2011		120	7.19	0.004	< 0.003	540	0.01	0.016	< 0.02	< 0.00005	**< 0.01**	< 0.002	42	< 0.002	---	< 0.002	0.030	0.004	< 0.001	< 0.002	0.003	< 0.03
	25-Aug-2013		160	---	< 0.030	< 0.030	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2014		300	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		190	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		110	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2018		180	---	0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols: Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Dissolved Metals: Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
FTA 99-3-4	15-Sep-1999	**W-CAT-1**	**1100**	7.8	< 0.02	< 0.005	**61**	0.05	0.003	0.032	< 0.0001	0.005	< 0.001	**25.2**	0.002	< 0.00005	< 0.004	0.025	0.002	< 0.0001	< 0.02	---	< 0.002
	17-Sep-2000		**640**	6.9	< 0.02	< 0.005	**44**	< 0.02	< 0.001	0.032	< 0.0001	< 0.005	< 0.005	0.591	0.004	< 0.00005	< 0.005	**0.032**	**0.006**	< 0.0001	**< 0.03**	---	< 0.005
	26-Aug-2001		**633**	7.0	0.04	< 0.005	**32**	< 0.02	**< 0.05**	0.054	< 0.002	0.006	< 0.005	0.440	**< 0.03**	---	< 0.005	**0.041**	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	21-Aug-2002		**407**	7.5	< 0.02	< 0.005	**27**	0.010	0.002	0.041	< 0.00010	< 0.001	0.0044	1.26	0.0010	**0.00083**	< 0.005	**0.048**	0.002	< 0.0001	< 0.0001	0.00574	0.018
	25-Aug-2003		**797**	6.5	< 0.2	< 0.06	---	---	< 0.005	< 0.050	< 0.002	< 0.007	0.012	**5.307**	**< 0.10**	< 0.00005	---	---	**0.004**	---	---	**< 1.0**	0.014
	23-Aug-2004		**469**	---	< 0.2	< 0.06	---	< 0.010	**< 0.010**	0.045	< 0.000034	< 0.005	0.006	**27.17**	< 0.002	< 0.00005	< 0.005	**0.047**	**0.009**	< 0.0002	< 0.0016	0.008	< 0.005
	25-Aug-2005		**477**	---	< 0.2	< 0.06	**42**	< 0.005	**0.008**	< 0.05	0.00003	< 0.007	0.004	**13.4**	< 0.001	< 0.00005	< 0.006	**0.079**	**0.007**	< 0.0001	< 0.0008	0.008	0.005
	21-Aug-2006		**434**	---	< 0.2	< 0.06	**28**	< 0.005	**0.013**	< 0.05	0.00052	< 0.007	**0.405**	**30.5**	**1.4**	< 0.00005	< 0.006	**0.058**	0.002	< 0.0001	< 0.0008	0.009	**0.238**
	21-Aug-2007		---	---	---	---	**58**	0.005	**0.058**	0.06	0.00007	0.005	0.0022	**42.5**	0.0004	---	**0.0306**	**0.0649**	**0.020**	< 0.0001	< 0.0002	0.0344	0.024
	18-Aug-2008		**380**	---	0.005	< 0.003	**48**	< 0.001	**0.013**	0.05	< 0.00001	< 0.001	0.0047	**37**	< 0.0002	---	0.0014	0.023	0.001	< 0.0001	< 0.0002	0.0071	0.027
	19-Aug-2009		**370**	7.27	< 0.003	< 0.003	**22**	0.003	0.0060	0.03	0.000046	< 0.001	0.0021	**22**	0.0002	---	**0.014**	**0.040**	0.0025	< 0.0001	< 0.0002	0.011	0.005
	20-Aug-2010		**310**	7.07	0.009	**0.032**	11	0.008	**0.0080**	0.05	< 0.00003	< 0.001	0.0029	**42**	0.0005	---	0.0015	**0.055**	0.0016	< 0.0001	< 0.0002	0.0045	0.008
	18-Aug-2011		**290**	---	0.003	< 0.003	**22**	0.01	**0.008**	0.03	< 0.00005	**< 0.01**	< 0.002	**47**	< 0.002	---	< 0.002	0.018	0.003	< 0.001	< 0.002	0.003	< 0.03
	20-Aug-2012		**190**	---	< 0.0030	< 0.0030	**35**	0.020	**0.014**	0.038	0.000013	< 0.0010	0.0012	**43**	0.00053	---	0.00063	0.011	0.0022	< 0.00010	< 0.00020	0.0034	0.0088
	25-Aug-2013		**210**	---	< 0.030	< 0.030	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	25-Aug-2013		**220**	---	< 0.030	< 0.030	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		---	---	---	---	---	0.014	**0.0066**	0.031	0.000028	< 0.0010	0.0028	**42**	0.00024	---	< 0.00020	0.0067	0.0013	< 0.00010	< 0.00020	0.0018	0.0098
(Duplicate)	09-Aug-2015		---	---	---	---	---	0.014	**0.0067**	0.034	0.000025	< 0.0010	0.0027	**42**	0.00023	---	< 0.00020	0.0072	0.0012	< 0.00010	< 0.00020	0.0018	0.0083
	11-Aug-2015		**180**	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		**160**	---	< 0.010	< 0.010	---	0.019	**0.0066**	0.036	0.00028	< 0.0010	0.00067	**34**	0.00031	---	0.00038	0.011	0.0012	< 0.00010	< 0.00020	0.0026	0.011
(Duplicate)	04-Aug-2016		**160**	---	< 0.010	< 0.010	---	0.019	**0.0066**	0.037	0.00028	< 0.0010	0.00050	**34**	0.00031	---	0.00031	0.011	0.0012	< 0.00010	< 0.00020	0.0027	0.0071
	10-Sep-2016		**130**	7.38	0.076	< 0.010	**40**	0.0048	0.0026	0.047	0.000089	< 0.0010	< 0.00020	**7.2**	< 0.00020	---	0.00027	0.0052	0.0011	< 0.00010	< 0.00020	0.0017	< 0.0030
	17-Aug-2017		**150**	---	< 0.010	< 0.010	---	0.030	**0.014**	0.045	< 0.000020	< 0.0010	0.00074	**54**	0.00036	---	0.00035	0.0053	0.0020	< 0.00010	< 0.00020	0.0023	0.0077
	16-Jul-2018		**180**	---	< 0.10	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Jul-2018		**170**	---	< 0.10	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA 99-5-6	15-Sep-1999	**W-CAT-1**	9.6	**8.5**	0.02	< 0.005	**58**	< 0.02	**0.010**	0.089	< 0.0001	< 0.002	< 0.001	**5.95**	< 0.001	< 0.00005	**0.011**	< 0.008	0.002	< 0.0001	< 0.02	---	< 0.002
	17-Sep-2000		13	7.6	< 0.02	< 0.005	**86**	< 0.02	**0.007**	0.075	< 0.0001	< 0.005	< 0.005	1.26	0.002	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	**< 0.03**	---	0.005
	21-Aug-2002		10.0	8.0	< 0.02	< 0.005	**39**	**0.819**	**0.014**	0.078	0.00005	< 0.001	0.0041	**19.4**	0.0028	**0.00077**	< 0.005	< 0.008	0.002	< 0.0001	< 0.0001	0.00116	0.008
(Duplicate)	21-Aug-2002		10.1	**8.4**	< 0.02	< 0.005	**40**	**0.285**	**0.013**	0.09	< 0.00001	< 0.001	0.0028	**19.9**	0.0018	**0.00052**	< 0.005	< 0.008	0.001	< 0.0001	< 0.0001	0.00102	0.016
	25-Aug-2003		14	7.2	< 0.2	< 0.06	---	---	**0.007**	0.08	< 0.002	< 0.007	< 0.009	3.463	**< 0.10**	< 0.00005	---	---	0.002	---	---	**< 1.0**	0.006
	20-Aug-2007		**26**	---	< 0.2	< 0.06	**58**	0.002	**0.023**	0.08	< 0.00001	0.003	0.0022	**15.7**	0.0016	---	**0.0062**	0.0034	**0.007**	< 0.0001	< 0.0002	0.0010	0.008
	19-Aug-2008		**35**	---	0.003	< 0.003	**35**	0.012	**0.015**	0.1	0.00001	< 0.001	0.0014	**10**	0.0006	---	0.0039	0.0012	< 0.001	< 0.0001	< 0.0002	0.0002	**0.058**
FTA 99-6-12	23-Aug-2004	**W-CAT-3**	10	---	< 0.2	< 0.06	---	< 0.010	< 0.010	1.006	< 0.000034	< 0.005	0.009	0.924	< 0.002	< 0.00005	< 0.005	< 0.008	< 0.002	< 0.0002	< 0.0016	< 0.002	< 0.005
(Duplicate)	23-Aug-2004		---	---	---	---	---	< 0.005	< 0.005	1.015	< 0.000017	< 0.005	0.005	0.891	< 0.001	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	25-Aug-2005		11.7	---	< 0.2	< 0.06	9	< 0.005	< 0.005	0.8	0.00002	< 0.007	0.007	0.042	< 0.001	< 0.00005	< 0.006	< 0.008	0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
(Duplicate)	25-Aug-2005		---	---	---	---	6	< 0.005	< 0.005	0.83	0.00002	< 0.007	0.004	0.040	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	21-Aug-2006		15	---	< 0.2	< 0.06	6	< 0.005	< 0.005	0.91	< 0.00001	< 0.007	< 0.002	0.007	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
(Duplicate)	21-Aug-2006		---	---	---	---	5	---	< 0.005	0.88	< 0.00001	< 0.007	< 0.002	0.261	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	---	< 0.001	< 0.005
	20-Aug-2007		23	---	< 0.2	< 0.06	2	0.001	0.002	0.85	< 0.00001	0.002	0.0013	0.36	< 0.0002	---	< 0.0002	< 0.0005	0.001	< 0.0001	< 0.0002	< 0.0001	0.014
(Duplicate)	20-Aug-2007		---	---	---	---	< 1	0.002	0.002	0.85	< 0.00001	0.004	0.0013	0.38	< 0.0002	---	< 0.0002	< 0.0005	0.002	< 0.0001	< 0.0002	< 0.0001	0.018
	19-Aug-2008		36	---	0.003	< 0.003	9	0.005	< 0.001	0.86	< 0.00001	< 0.001	0.0016	0.18	< 0.0002	---	< 0.0002	0.0011	< 0.001	< 0.0001	< 0.0002	< 0.0001	**0.066**
	20-Aug-2012		160	---	< 0.0030	0.0047	3.4	0.0036	0.0018	0.87	< 0.000025	< 0.0010	0.00023	0.72	0.00087	---	0.00089	0.0020	0.00037	< 0.00010	< 0.00020	0.00056	0.0085

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals															
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
FTA 99-6-12 (cont.)	24-Aug-2013		87	---	0.042	0.0097	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2014		66	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		65	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		78	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-Sep-2016		77	7.77	< 0.010	< 0.010	37	< 0.0030	0.0053	0.32	< 0.000020	< 0.0010	0.00034	< 0.060	0.0015	---	0.0040	0.0035	0.0010	< 0.00010	< 0.00020	0.0017	< 0.0030
(Duplicate)	10-Sep-2016		76	7.82	< 0.010	< 0.010	31	< 0.0030	0.0053	0.33	< 0.000020	< 0.0010	0.00020	< 0.060	0.0016	---	0.0041	0.0038	0.00094	< 0.00010	< 0.00020	0.0018	< 0.0030
	13-Aug-2017		64	---	0.012	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FTA-OBS-56	20-Aug-2012	**W-CAT-1**	120	7.04	0.014	0.0043	120	0.0077	0.0063	0.023	< 0.000025	< 0.0010	0.00035	63	0.00023	---	0.0032	0.031	0.0012	< 0.00010	< 0.00020	0.0014	0.014
	06-Jul-2016		200	7.38	< 0.010	< 0.010	200	0.027	0.014	< 0.020	< 0.000020	< 0.0010	0.0011	30	0.00077	---	0.00061	0.0056	0.0017	< 0.00010	< 0.00020	0.0032	0.0052
FTA-OBS-58	20-Aug-2012	**W-CAT-1**	6.1	7.78	< 0.0030	0.0044	33	0.0046	0.0042	0.059	< 0.000025	< 0.0010	0.00045	0.21	0.00027	---	0.0043	0.0096	0.00070	< 0.00010	< 0.00020	0.0012	0.0061
	06-Jul-2016		26	7.63	< 0.010	< 0.010	150	0.0065	0.011	0.044	< 0.000020	< 0.0010	0.0010	25	0.00036	---	0.0045	0.0040	0.00069	< 0.00010	< 0.00020	0.00040	0.0063
FTA-OBS14	01-Oct-2001	**W-CAT-1**	339	7.0	< 0.02	0.009	---	< 0.02	**< 0.05**	0.017	< 0.002	< 0.005	< 0.005	0.384	**< 0.03**	---	< 0.005	0.011	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
	06-Jul-2016		39	7.32	< 0.010	< 0.010	29	0.037	0.0075	< 0.020	0.000037	< 0.0010	0.0011	34	< 0.00020	---	0.0019	0.0065	0.0041	< 0.00010	< 0.00020	0.0050	< 0.0030
FTA-OBS16	01-Oct-2001	**W-CAT-1**	142	7.1	< 0.02	0.007	---	0.02	**< 0.05**	0.046	< 0.002	< 0.005	< 0.005	0.183	**< 0.03**	---	< 0.005	0.014	**< 0.03**	< 0.01	**< 0.03**	---	< 0.005
FTA-TR1	01-Oct-2001	**W-CAT-1**	384	6.7	< 0.02	< 0.005	---	< 0.02	0.06	0.021	0.008	0.005	0.023	0.019	**< 0.03**	---	0.016	0.989	**< 0.03**	< 0.01	**< 0.03**	---	1.01
LT7-OBS-53	19-Aug-2012	**W-CAT-1**	36	7.50	< 0.0030	< 0.0030	140	0.0027	0.0061	0.1	0.000025	< 0.0010	0.0012	0.41	0.021	---	0.0042	0.0087	0.0024	< 0.00010	< 0.00020	0.011	0.0098
Process Water Samples																							
B38 DP02 SUMP	10-Sep-2002	---	11.0	8.0	< 0.02	0.024	---	0.03	**< 0.05**	0.014	**< 0.002**	< 0.005	**< 0.005**	1.51	**< 0.03**	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
B38-N-INLET	02-Sep-2007	---	53	7.9	< 0.2	< 0.06	---	---	---	---	---	---	---	1.22	---	---	---	---	---	---	---	---	---
	22-Sep-2008		33	7.3	0.041	< 0.003	---	---	---	---	---	---	---	0.07	---	---	---	---	---	---	---	---	---
	13-Aug-2009		24	6.92	0.005	< 0.003	---	---	---	---	---	---	---	1.5	---	---	---	---	---	---	---	---	---
	27-Jun-2010		24	7.10	0.003	< 0.003	---	---	---	---	---	---	---	0.13	---	---	---	---	---	---	---	---	---
	20-Aug-2011		38	7.17	< 0.03	< 0.03	---	---	---	---	---	---	---	22	---	---	---	---	---	---	---	---	---
	26-Sep-2012		63	6.97	0.015	< 0.0030	---	---	---	---	---	---	---	27	---	---	---	---	---	---	---	---	---
	22-Sep-2013		26	7.50	0.0069	< 0.0030	---	---	---	---	---	---	---	20	---	---	---	---	---	---	---	---	---
	19-Sep-2014		26	6.96	< 0.010	< 0.010	---	0.010	0.0088	0.04	0.000049	0.0010	0.00032	68	< 0.00020	---	0.12	0.016	0.0018	< 0.00010	< 0.00020	0.040	< 0.0030
	20-Aug-2015		18	7.34	< 0.010	< 0.010	---	0.026	0.0099	< 0.020	0.000032	< 0.0010	0.00043	76	< 0.00020	---	0.036	0.037	0.0024	< 0.00010	< 0.00020	0.060	< 0.0030
	06-Jul-2016		18	7.05	< 0.010	< 0.010	130	0.017	0.0086	< 0.020	< 0.000020	< 0.0010	< 0.00020	82	0.00050	---	0.024	0.020	0.0017	< 0.00010	< 0.00020	0.013	0.010
B38-S-INLET	17-Sep-2004	---	53	6.9	< 0.2	< 0.06	---	---	---	---	---	---	---	107.8	---	---	---	---	---	---	---	---	---
	21-Aug-2005		10.7	7.0	< 0.2	< 0.06	---	---	---	---	---	---	---	45.0	---	---	---	---	---	---	---	---	---
	13-Aug-2009		38	6.90	0.005	< 0.003	---	---	---	---	---	---	---	1.3	---	---	---	---	---	---	---	---	---
	27-Jun-2010		100	6.88	0.005	< 0.003	---	---	---	---	---	---	---	9.2	---	---	---	---	---	---	---	---	---
B38X-POSTGAC	09-Aug-1999	---	39	8.1	---	---	---	< 0.02	0.14	0.127	**< 0.002**	< 0.002	< 0.001	0.103	0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	**< 0.02**	---	0.026
	05-Sep-2000		48	7.8	< 0.02	< 0.005	2	0.03	0.007	0.035	0.0001	< 0.005	**< 0.005**	< 0.005	< 0.001	**< 0.00005**	0.014	0.081	0.001	< 0.0001	**< 0.03**	---	0.006
	18-Sep-2000		43	8.0	< 0.02	< 0.005	13	0.02	< 0.001	0.094	**< 0.0001**	< 0.005	**< 0.005**	0.013	< 0.001	**< 0.00005**	0.016	0.081	0.002	< 0.0001	**< 0.03**	---	0.029
B38X-PREGAC	09-Aug-1999	---	41	8.0	---	---	---	< 0.02	0.16	0.119	**< 0.002**	< 0.002	< 0.001	0.153	0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	**< 0.02**	---	< 0.002
	05-Sep-2000		47	7.7	< 0.02	< 0.005	---	< 0.02	**< 0.05**	0.074	**< 0.002**	< 0.005	**< 0.005**	< 0.005	**< 0.03**	---	0.014	0.093	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	18-Sep-2000		43	7.9	< 0.02	< 0.005	---	< 0.02	**< 0.05**	0.108	**< 0.002**	< 0.005	**< 0.005**	0.026	**< 0.03**	---	0.017	0.108	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
B38X-PREOW	09-Aug-1999	---	41	8.0	---	---	---	< 0.02	0.16	0.118	**< 0.002**	< 0.002	< 0.001	0.956	**< 0.02**	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	**< 0.02**	---	< 0.002
	05-Sep-2000		47	7.6	< 0.02	< 0.005	97	0.02	< 0.001	0.084	0.0019	< 0.005	**< 0.005**	< 0.005	0.003	**< 0.00005**	0.021	0.094	0.002	< 0.0001	**< 0.03**	---	0.049
	18-Sep-2000		43	7.9	0.02	< 0.005	52	< 0.02	< 0.001	0.111	0.0005	< 0.005	**< 0.005**	0.042	0.001	**< 0.00005**	0.015	0.112	0.002	< 0.0001	**< 0.03**	---	0.046

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals															
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
B38X-PRESTRIPPER	05-Sep-2000	---	48	7.7	< 0.02	< 0.005	---	0.04	**0.10**	0.085	**< 0.002**	0.006	**< 0.005**	< 0.005	**< 0.03**	---	0.012	0.098	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	18-Sep-2000		41	7.9	0.02	< 0.005	---	< 0.02	**< 0.05**	0.11	**< 0.002**	< 0.005	**< 0.005**	0.071	**< 0.03**	---	0.015	0.106	**< 0.03**	**< 0.01**	**< 0.03**	---	**0.019**
B38X-PUMP	22-Aug-1999	---	42	7.6	---	---	---	< 0.02	**0.08**	0.123	**< 0.002**	0.002	0.009	**1.16**	**0.05**	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	**< 0.02**	---	< 0.002
	01-Sep-2000		50	7.8	< 0.02	< 0.005	---	0.04	**< 0.05**	0.06	**0.003**	0.005	0.011	0.023	**< 0.03**	---	0.014	0.100	**< 0.03**	**< 0.01**	**< 0.03**	---	**0.047**
FTA-N-INLET	20-Aug-2011	---	110	7.31	< 0.03	< 0.03	---	---	---	---	---	---	---	**37**	---	---	---	---	---	---	---	---	---
	26-Sep-2012		26	6.92	0.016	< 0.0030	---	---	---	---	---	---	---	**58**	---	---	---	---	---	---	---	---	---
	22-Sep-2013		49	7.19	< 0.0030	< 0.0030	---	---	---	---	---	---	---	**59**	---	---	---	---	---	---	---	---	---
	19-Sep-2014		120	7.07	< 0.010	< 0.010	---	0.015	**0.0055**	0.051	0.000046	< 0.0010	0.0013	**35**	0.00044	---	0.0095	0.0064	**0.0018**	< 0.00010	< 0.00020	**0.053**	0.0034
	20-Aug-2015		**140**	7.61	< 0.010	< 0.010	---	0.013	**0.0051**	0.044	< 0.000020	< 0.0010	0.00031	**65**	< 0.00020	---	0.016	0.0050	**0.0013**	< 0.00010	< 0.00020	**0.026**	< 0.0030
	06-Jul-2016		120	7.14	< 0.010	< 0.010	**62**	0.0084	0.0049	0.038	< 0.000020	< 0.0010	< 0.00020	**56**	< 0.00020	---	0.014	0.0062	**0.0015**	< 0.00010	< 0.00020	**0.032**	< 0.0030

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-1: Mainland Locations - Surficial Sediments - 95th Percentile Background
W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background

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Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH									
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			0.37	0.002	0.09	---	---	---	0.0058	0.0044	0.000012	0.000018	0.000015	0.00004	0.003	0.0011	0.0004	0.000025
W-CAT-1			0.00025	0.00025	0.00025	0.0005	0.05	0.05	0.00010	0.00005	0.000010	0.000009	0.0000075	0.00004	0.00005	0.0001	0.00008	0.000036
W-CAT-3			0.06	0.003	0.002	0.010	0.89	35	0.00053	0.00005	0.000012	0.000088	0.0000346	0.00007	0.0016	0.0054	0.00369	0.00026
Groundwater Sampling Locations																		
B38 00-28-6	17-Sep-2000	**W-CAT-3**	< 0.0050	**< 0.0050**	< 0.0050	0.016	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2001		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2002		< 0.0050	**< 0.0050**	< 0.0050	< 0.01	---	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2005		< 0.0005	< 0.0005	< 0.0005	< 0.0015	0.16	< 0.1	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	20-Aug-2007		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	22-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
B38 00-32-44	21-Jul-2001	**W-CAT-3**	0.99	1.9	0.24	1.1	---	---	---	---	---	---	---	---	---	---	---	---
B38 02-17-3	20-Aug-2002	**W-CAT-1**	2.2	**< 0.025**	< 0.025	< 0.025	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		0.318	**< 0.0050**	< 0.0050	< 0.01	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		0.0325	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	24-Aug-2005		0.0178	< 0.0005	< 0.0005	< 0.0015	0.13	< 0.1	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		0.0039	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	20-Aug-2007		0.0329	< 0.0004	< 0.0004	< 0.0008	0.157	1.0	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		0.16	< 0.0004	< 0.0004	0.0021	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2008		0.11	< 0.0004	< 0.0004	0.0012	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---
	19-Aug-2009		0.0045	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2009		0.0060	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	22-Aug-2010		0.031	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	17-Aug-2011		0.011	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	19-Aug-2012		0.0039	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		0.0012	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---
B38 02-24-7	20-Aug-2002	**W-CAT-3**	0.57	**< 0.0050**	< 0.0050	< 0.0050	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		2.04	**< 0.0500**	< 0.0500	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		2.96	**< 0.0500**	< 0.0500	< 0.1	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---
B38 02-36-3	20-Aug-2002	**W-CAT-1**	0.94	**< 0.0050**	< 0.0050	< 0.01	---	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2003		0.895	**< 0.0050**	< 0.0050	(0.0153-0.0203)	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2004		0.783	**< 0.0050**	< 0.0050	< 0.01	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		0.493	**< 0.005**	< 0.005	< 0.015	0.14	0.1	---	---	---	---	---	---	---	---	---	---
(Duplicate)	25-Aug-2005		0.509	**< 0.005**	< 0.005	< 0.015	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		0.411	**< 0.005**	< 0.005	< 0.01	0.167	0.2	---	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Aug-2006		0.408	**< 0.005**	< 0.005	< 0.01	0.125	0.2	---	---	---	---	---	---	---	---	---	---
	20-Aug-2007		0.0473	< 0.0004	< 0.0004	< 0.0008	0.424	0.5	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		0.2	< 0.0004	< 0.0004	< 0.0008	0.49	1.3	---	---	---	---	---	---	---	---	---	---
	17-Aug-2009		0.0007	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---
	19-Aug-2010		0.069	< 0.0004	0.0005	< 0.0008	< 0.1	0.8	---	---	---	---	---	---	---	---	---	---
	19-Aug-2012		0.19	< 0.00060	0.0093	< 0.00080	1	1.9	---	---	---	---	---	---	---	---	---	---
B38 03-37-5	25-Aug-2003	**W-CAT-1**	14.6	12	1.32	5.66	---	---	---	---	---	---	---	---	---	---	---	---

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Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH									
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			0.37	0.002	0.09	---	---	---	0.0058	0.0044	0.000012	0.000018	0.000015	0.00004	0.003	0.0011	0.0004	0.000025
W-CAT-1			0.00025	0.00025	0.00025	0.0005	0.05	0.05	0.00010	0.00005	0.000010	0.000009	0.0000075	0.00004	0.00005	0.0001	0.00008	0.000036
W-CAT-3			0.06	0.003	0.002	0.010	0.89	35	0.00053	0.00005	0.000012	0.000088	0.0000346	0.00007	0.0016	0.0054	0.00369	0.00026
B38 03-38-5	25-Aug-2003	**W-CAT-1**	3.26	0.0124	0.0036	0.0153	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	25-Aug-2003		3.07	0.0115	< 0.0005	(0.0049-0.0054)	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		4.11	**< 0.0500**	< 0.0500	< 0.1	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		5.54	**< 0.05**	< 0.05	< 0.15	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		5.68	**< 0.05**	< 0.05	< 0.1	0.2	0.1	---	---	---	---	---	---	---	---	---	---
	20-Aug-2007		6.54	< 0.0004	0.0033	0.0080	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		5.2	< 0.0004	< 0.0004	0.0081	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---
	17-Aug-2009		8.4	< 0.0004	0.0021	0.017	< 0.1	0.7	---	---	---	---	---	---	---	---	---	---
	22-Aug-2010		7.9	< 0.0004	0.0016	0.014	< 0.1	0.3	---	---	---	---	---	---	---	---	---	---
	19-Aug-2011		9.9	0.0005	0.0024	0.02	< 0.1	0.4	---	---	---	---	---	---	---	---	---	---
	19-Aug-2012		8.9	< 0.00040	0.0024	0.015	< 0.1	0.43	---	---	---	---	---	---	---	---	---	---
	26-Aug-2013		9.7	< 0.00040	0.0028	0.021	< 0.1	1.2	---	---	---	---	---	---	---	---	---	---
	01-Aug-2014		8.3	< 0.00040	0.0025	0.025	0.27	0.27	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		6.4	0.00045	0.0022	0.019	0.24	0.69	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		8.4	0.00049	0.0022	0.017	< 0.1	0.34	---	---	---	---	---	---	---	---	---	---
	13-Aug-2017		9.9	0.00045	0.0019	0.011	< 0.10	0.64	---	---	---	---	---	---	---	---	---	---
B38 03-40-5	25-Aug-2003	**W-CAT-1**	16.5	11.6	1.02	3.76	---	---	---	---	---	---	---	---	---	---	---	---
B38 08-2-4	22-Aug-2010	**W-CAT-1**	15	0.7	0.092	1.6	< 0.1	1.2	---	---	---	---	---	---	---	---	---	---
	17-Aug-2011		14	0.72	0.039	1.2	< 0.1	2.0	---	---	---	---	---	---	---	---	---	---
	26-Aug-2013		17	0.19	0.046	0.57	< 0.1	0.65	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		12	0.4	0.039	0.64	< 0.1	1.2	---	---	---	---	---	---	---	---	---	---
	03-Aug-2016		15	0.44	0.062	0.66	< 0.1	0.98	---	---	---	---	---	---	---	---	---	---
B38 08-3-4	19-Aug-2008	**W-CAT-1**	0.0026	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	17-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	22-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	19-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---
B38 08-4-4	19-Aug-2008	**W-CAT-1**	14	12	0.92	3.7	< 0.1	15.9	---	---	---	---	---	---	---	---	---	---
B38 93-1-2	17-Sep-2000	**W-CAT-1**	< 0.0050	**< 0.0050**	< 0.0050	< 0.0050	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2001		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---
B38 93-13-6	07-Sep-1997	**W-CAT-3**	25	9.8	0.86	3.8	---	---	---	---	---	---	---	---	---	---	---	---
	21-Oct-1998		13	8.6	0.62	3.63	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2001		14	6.9	0.48	2.81	---	---	---	---	---	---	---	---	---	---	---	---
B38 93-2-4	17-Sep-2000	**W-CAT-1**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	17-Sep-2000		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2001		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2002		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---

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Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH									
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			0.37	0.002	0.09	---	---	---	0.0058	0.0044	0.000012	0.000018	0.000015	0.00004	0.003	0.0011	0.0004	0.000025
W-CAT-1			0.00025	0.00025	0.00025	0.0005	0.05	0.05	0.00010	0.00005	0.000010	0.000009	0.0000075	0.00004	0.00005	0.0001	0.00008	0.000036
W-CAT-3			0.06	0.003	0.002	0.010	0.89	35	0.00053	0.00005	0.000012	0.000088	0.0000346	0.00007	0.0016	0.0054	0.00369	0.00026
B38 93-20-7	27-Aug-2001	**W-CAT-3**	6.8	0.74	0.38	2.52	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		5.49	0.375	0.388	1.77	---	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2005		3.12	0.0203	0.198	0.645	2.1	2.8	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		2.72	**< 0.05**	< 0.05	0.37	1.97	2.4	---	---	---	---	---	---	---	---	---	---
	20-Aug-2007		0.0725	< 0.0004	0.0314	0.242	1.02	18.2	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		0.15	< 0.0004	0.025	0.11	4.1	27.7	---	---	---	---	---	---	---	---	---	---
	19-Aug-2009		1	0.043	0.17	0.45	1.5	4.4	---	---	---	---	---	---	---	---	---	---
	10-Sep-2016		0.18	< 0.00040	0.017	0.017	0.39	9.8	0.00025	---	0.00014	0.000055	0.000014	0.00012	0.0011	0.0013	0.0017	0.00039
B38 97-9-5	15-Jul-1997	**W-CAT-1**	22	21	0.94	4.6	---	---	---	---	---	---	---	---	---	---	---	---
	21-Oct-1998		18	15	0.78	3.67	---	---	---	---	---	---	---	---	---	---	---	---
	15-Sep-1999		13	14	0.91	4	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		13	14	1	4.7	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		15.1	17.7	1.18	5.88	---	---	---	---	---	---	---	---	---	---	---	---
B38 98-19-5	09-Sep-1998	**W-CAT-1**	4.8	0.089	**< 0.13**	< 0.26	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	09-Sep-1998		4.1	**< 0.13**	**< 0.13**	< 0.26	---	---	---	---	---	---	---	---	---	---	---	---
	15-Sep-1999		11	**< 0.1**	0.31	0.58	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		10	**< 0.05**	0.39	0.56	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2001		12	**< 0.1**	0.27	(0.17-0.27)	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		7.11	**< 0.0500**	0.151	0.307	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		4.5	**< 0.0500**	0.0844	< 0.1	< 0.1	0.5	---	---	---	---	---	---	---	---	---	---
	24-Aug-2005		4.96	< 0.0005	0.0751	0.0036	< 0.1	2.1	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		0.303	< 0.0005	< 0.0005	< 0.001	0.903	0.9	---	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Aug-2006		0.457	< 0.0005	< 0.0005	< 0.001	0.675	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		0.3	< 0.0004	0.0023	< 0.0008	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	0.22	0.4	---	---	---	---	---	---	---	---	---	---
	10-Sep-2016		0.67	< 0.00040	0.0025	0.00082	0.33	4.0	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00014	0.00018	0.00018	0.000022
B38 98-21-18	25-Aug-2003	**W-CAT-3**	6.12	1.53	0.0888	0.724	---	---	---	---	---	---	---	---	---	---	---	---
B38 98-22-3	09-Sep-1998	**W-CAT-1**	0.018	0.0021	0.0012	0.0035	---	---	---	---	---	---	---	---	---	---	---	---
	15-Sep-1999		0.0089	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		0.0016	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2001		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---
	17-Aug-2009		0.02	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
B38 98-6-5	09-Sep-1998	**W-CAT-1**	1.9	0.054	0.12	0.31	---	---	---	---	---	---	---	---	---	---	---	---
	15-Sep-1999		0.97	0.0083	0.051	0.13	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		2.8	0.064	0.084	0.22	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2001		2.2	**< 0.025**	0.044	0.094	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2002		0.77	**< 0.01**	0.019	0.08	---	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2003		2.85	**< 0.0500**	0.105	0.267	1.4	---	---	---	---	---	---	---	---	---	---	---
B38 98-7-3	21-Oct-1998	**W-CAT-1**	< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2001		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2002		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Aug-2002		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---

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Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC: Benzene (mg/L)	PHC: Toluene (mg/L)	PHC: Ethylbenzene (mg/L)	PHC: Xylenes (Total) (mg/L)	PHC: PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC: PHC F2 (C_{10}-C_{16}) (mg/L)	PAH: Acenaphthene (mg/L)	PAH: Acridine (mg/L)	PAH: Anthracene (mg/L)	PAH: Benzo(a)Anthracene (mg/L)	PAH: Benzo(a)Pyrene (mg/L)	PAH: Fluoranthene (mg/L)	PAH: Fluorene (mg/L)	PAH: Naphthalene (mg/L)	PAH: Phenanthrene (mg/L)	PAH: Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			0.37	0.002	0.09	---	---	---	0.0058	0.0044	0.000012	0.000018	0.000015	0.00004	0.003	0.0011	0.0004	0.000025
W-CAT-1			0.00025	0.00025	0.00025	0.0005	0.05	0.05	0.00010	0.00005	0.000010	0.000009	0.0000075	0.00004	0.00005	0.0001	0.00008	0.000036
W-CAT-3			0.06	0.003	0.002	0.010	0.89	35	0.00053	0.00005	0.000012	0.000088	0.0000346	0.00007	0.0016	0.0054	0.00369	0.00026
B38 98-8-4	09-Sep-1998	**W-CAT-1**	8.5	4.9	0.79	3.5	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2001		16	14	1.6	7.2	---	---	---	---	---	---	---	---	---	---	---	---
B38 99-14-4	26-Aug-2001	**W-CAT-1**	21	15	1.1	6	---	---	---	---	---	---	---	---	---	---	---	---
B38 99-15-4	27-Aug-2001	**W-CAT-3**	0.0094	0.0095	0.0088	0.062	---	---	---	---	---	---	---	---	---	---	---	---
B38 99-4-30	25-Aug-2003	**W-CAT-3**	< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---
B38 DP99-1	18-Sep-1999	**W-CAT-1**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
B38 MP00-2	21-Sep-2000	**W-CAT-1**	< 0.0050	**< 0.0050**	< 0.0050	< 0.0050	---	---	---	---	---	---	---	---	---	---	---	---
B38 MP00-3	21-Sep-2000	**W-CAT-1**	< 0.0050	**< 0.0050**	< 0.0050	< 0.0050	---	---	---	---	---	---	---	---	---	---	---	---
B38 MP00-4	21-Sep-2000	**W-CAT-1**	< 0.0050	**< 0.0050**	< 0.0050	< 0.0050	---	---	---	---	---	---	---	---	---	---	---	---
B38-N-OBS-59	06-Jul-2016	**W-CAT-1**	2.5	1.5	0.096	0.81	6.8	240	**< 0.01**	---	**< 0.0010**	**< 0.00085**	**< 0.00075**	**< 0.0010**	0.029	0.045	0.062	0.0043
B38-N-OBS-61	06-Jul-2016	**W-CAT-1**	9.3	6.4	0.43	2.5	< 0.1	13	< 0.0010	---	**< 0.00010**	**< 0.000085**	**< 0.000075**	**< 0.00010**	0.0037	0.06	0.0057	0.00022
B38-N-OBS-62	19-Aug-2012	**W-CAT-1**	7.1	4	0.75	3.4	4.4	1.0	---	---	---	---	---	---	---	---	---	---
	06-Jul-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020
B38-16-1-3	12-Aug-2017	**W-CAT-1**	0.054	< 0.00040	< 0.00040	0.0030	0.20	3.1	---	---	---	---	---	---	---	---	---	---
	13-Jul-2018		0.047	< 0.00040	0.00044	0.0053	< 0.10	5.7	---	---	---	---	---	---	---	---	---	---
B38X-EW1	28-Jul-1999	**W-CAT-3**	11	0.73	0.74	2.4	---	---	---	---	---	---	---	---	---	---	---	---
B38X-N-OBS26	01-Oct-2001	**W-CAT-1**	15	7.5	0.72	3.3	---	---	**< 0.0070**	0.0048	**< 0.00037**	**< 0.00010**	**< 0.00010**	**< 0.00010**	0.012	0.12	0.016	**< 0.00037**
B38X-N-OBS27	01-Oct-2001	**W-CAT-1**	10.5	8.5	0.7	3.8	---	---	---	---	---	---	---	---	---	---	---	---
B38X-N-OBS7	01-Oct-2001	**W-CAT-3**	29	27	2.6	12	---	---	**< 0.080**	0.064	**< 0.0039**	**< 0.0036**	**< 0.0010**	**< 0.0085**	0.13	0.86	0.24	**< 0.013**
B38X-N-TR4	01-Oct-2001	**W-CAT-1**	6	5.2	0.52	2.5	---	---	**< 0.12**	**< 0.10**	**< 0.046**	**< 0.0022**	**< 0.0010**	**< 0.0018**	0.21	1.5	0.38	**< 0.011**
B38X-OBS1	03-Aug-2000	**W-CAT-3**	6.2	2	0.62	2.2	---	---	---	---	---	---	---	---	---	---	---	---
B38X-OBS2	28-Jul-1999	**W-CAT-3**	9.9	0.91	0.43	2.4	---	---	---	---	---	---	---	---	---	---	---	---
B38X-OBS4	28-Jul-1999	**W-CAT-1**	9.7	0.6	0.24	1.9	---	---	---	---	---	---	---	---	---	---	---	---
B38X-OBS5	28-Jul-1999	**W-CAT-1**	4.9	0.14	0.31	1.4	---	---	---	---	---	---	---	---	---	---	---	---
B38X-OBS6	28-Jul-1999	**W-CAT-1**	0.02	0.0013	0.0012	0.0042	---	---	---	---	---	---	---	---	---	---	---	---
B38X-OBS8	03-Aug-2000	**W-CAT-3**	11	0.16	0.75	2.4	---	---	---	---	---	---	---	---	---	---	---	---
B38X-OBS9	03-Aug-2000	**W-CAT-3**	9	1.1	0.78	2.4	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		6.48	0.0701	0.325	1.23	< 0.1	180	---	---	---	---	---	---	---	---	---	---
B38X-OBS10	03-Aug-2000	**W-CAT-1**	12	0.88	0.76	2.5	---	---	---	---	---	---	---	---	---	---	---	---
B38X-OBS11	03-Aug-2000	**W-CAT-1**	11	0.58	0.72	2.4	---	---	---	---	---	---	---	---	---	---	---	---
B38X-OBS12	23-Aug-2004	**W-CAT-1**	10.3	**< 0.0500**	0.536	1.24	1.4	61.0	---	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Aug-2004		10	**< 0.0500**	0.521	1.24	9.3	14.6	---	---	---	---	---	---	---	---	---	---

Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH									
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			0.37	0.002	0.09	---	---	---	0.0058	0.0044	0.000012	0.000018	0.000015	0.00004	0.003	0.0011	0.0004	0.000025
W-CAT-1			0.00025	0.00025	0.00025	0.0005	0.05	0.05	0.00010	0.00005	0.000010	0.000009	0.0000075	0.00004	0.00005	0.0001	0.00008	0.000036
W-CAT-3			0.06	0.003	0.002	0.010	0.89	35	0.00053	0.00005	0.000012	0.000088	0.0000346	0.00007	0.0016	0.0054	0.00369	0.00026
FTA 00-7-5	17-Sep-2000	**W-CAT-1**	8.6	3.5	0.39	1.6	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	17-Sep-2000		9	3.8	0.44	1.8	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2001		3.4	0.55	0.098	0.97	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		11.2	0.682	0.22	2.06	---	---	---	---	---	---	---	---	---	---	---	---
FTA 00-8-5	17-Sep-2000	**W-CAT-1**	7	8.9	0.81	3.5	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2001		5	4.6	0.53	2.97	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2002		4.4	2.8	0.42	2.4	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		3.68	0.474	0.141	1.92	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		3.64	0.0706	0.0769	2.516	0.8	1.4	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		1.49	**< 0.05**	< 0.05	1.29	3.9	1.0	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		1.3	**< 0.005**	< 0.005	1.04	2.9	0.9	---	---	---	---	---	---	---	---	---	---
	21-Aug-2007		3.57	0.0221	< 0.0004	0.585	3.77	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2009		1.5	0.0050	0.0025	0.22	9.6	1.7	---	---	---	---	---	---	---	---	---	---
	20-Aug-2010		0.69	0.0024	0.011	0.055	3.9	1.7	---	---	---	---	---	---	---	---	---	---
FTA 00-9-5	20-Sep-2000	**W-CAT-1**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2001		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2002		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		< 0.0005	< 0.0005	< 0.0005	< 0.0015	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	21-Aug-2007		< 0.0004	< 0.0004	< 0.0004	< 0.0008	8.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	19-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	20-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	18-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
FTA 03-1-4	25-Aug-2003	**W-CAT-1**	0.341	**< 0.0050**	0.0143	0.019	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		0.0794	< 0.0005	< 0.0005	(0.0013-0.0018)	0.1	0.1	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		0.0499	< 0.0005	< 0.0005	< 0.0015	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---
	20-Aug-2007		0.129	< 0.0004	< 0.0004	0.0024	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		0.0036	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2008		0.02	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---
	17-Aug-2009		0.14	< 0.0004	0.03	0.023	< 0.1	< 0.8	---	---	---	---	---	---	---	---	---	---
(Duplicate)	17-Aug-2009		0.089	< 0.0004	0.016	0.011	< 0.1	0.3	---	---	---	---	---	---	---	---	---	---
	22-Aug-2010		0.059	< 0.0004	0.0024	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---
(Duplicate)	22-Aug-2010		0.058	< 0.0004	0.0025	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---
	18-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---
(Duplicate)	18-Aug-2011		0.0010	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		0.0065	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Aug-2012		0.0050	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---
FTA 93-1-4	07-Sep-1997	**W-CAT-1**	0.011	**< 0.0050**	< 0.0050	< 0.01	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		0.0013	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2001		< 0.0050	**< 0.0050**	< 0.0050	< 0.01	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2002		0.0008	0.0006	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---

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Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH									
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			0.37	0.002	0.09	---	---	---	0.0058	0.0044	0.000012	0.000018	0.000015	0.00004	0.003	0.0011	0.0004	0.000025
W-CAT-1			0.00025	0.00025	0.00025	0.0005	0.05	0.05	0.00010	0.00005	0.000010	0.000009	0.0000075	0.00004	0.00005	0.0001	0.00008	0.000036
W-CAT-3			0.06	0.003	0.002	0.010	0.89	35	0.00053	0.00005	0.000012	0.000088	0.0000346	0.00007	0.0016	0.0054	0.00369	0.00026
FTA 98-4-5	27-Aug-2001	**W-CAT-1**	28	18	< 1	(2.6-3.6)	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		17	16	2.3	12	240	240	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013		24	17	0.67	9.6	110	21	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		15	9.2	0.47	5.6	< 0.1	13	---	---	---	---	---	---	---	---	---	---
	13-Aug-2017		14	8.5	0.22	6.9	< 0.10	11	---	---	---	---	---	---	---	---	---	---
(Duplicate)	13-Aug-2017		14	8.2	0.22	6.3	< 0.10	13	---	---	---	---	---	---	---	---	---	---
	16-Jul-2018		17	11	0.32	11	< 0.10	7.4	---	---	---	---	---	---	---	---	---	---
FTA 99-2-4	26-Aug-2001	**W-CAT-1**	31	22	1.1	5.4	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		20.6	15.1	0.704	4.48	< 0.1	6.3	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		18	12	0.72	5.9	3.2	7.0	---	---	---	---	---	---	---	---	---	---
	22-Aug-2010		20	9	0.25	5	13	17.6	---	---	---	---	---	---	---	---	---	---
	18-Aug-2011		21	10	0.36	5.7	28	27	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013		15	16	1.1	32	< 0.1	120	---	---	---	---	---	---	---	---	---	---
	31-Jul-2014		12	6.5	0.14	4.3	5.4	7.2	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		4.3	2	0.029	1.8	2.3	7.3	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		5.6	1.6	0.069	2	< 0.1	15	---	---	---	---	---	---	---	---	---	---
	16-Jul-2018		13	3.7	0.18	3.6	< 0.10	7.5	---	---	---	---	---	---	---	---	---	---
FTA 99-3-4	18-Oct-1999	**W-CAT-1**	1.6	2.9	0.47	1.7	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		1.2	2.9	0.55	2.5	---	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2001		0.2	0.59	0.23	1.07	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2002		0.061	0.031	0.016	0.28	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		0.22	0.0227	0.0065	0.289	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	25-Aug-2003		0.199	0.0265	0.0076	0.303	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		0.781	0.659	0.159	1.26	7.8	12.4	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		0.0222	0.292	0.0982	0.753	3.3	6.1	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		0.185	0.0780	< 0.0005	0.281	5.25	8.2	---	---	---	---	---	---	---	---	---	---
	21-Aug-2007		0.745	0.197	0.0065	0.602	21.6	3.5	---	---	---	---	---	---	---	---	---	---
	18-Aug-2008		0.97	0.16	0.02	0.44	6.2	3.9	---	---	---	---	---	---	---	---	---	---
	19-Aug-2009		0.12	0.032	0.0080	0.19	9.7	8.9	---	---	---	---	---	---	---	---	---	---
	20-Aug-2010		0.14	0.015	0.0049	0.063	3.7	7.8	---	---	---	---	---	---	---	---	---	---
	18-Aug-2011		0.094	0.03	0.0090	0.043	1.6	4.4	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		0.41	0.044	0.011	0.067	16	11	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013		0.55	0.032	0.017	0.042	2.3	12	---	---	---	---	---	---	---	---	---	---
(Duplicate)	25-Aug-2013		0.51	0.028	0.01	0.048	2.9	22	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		0.22	0.066	0.014	0.042	1.8	28	---	---	---	---	---	---	---	---	---	---
(Duplicate)	09-Aug-2015		0.21	0.066	0.014	0.045	2.1	23	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		0.17	0.027	0.024	0.05	1.3	10	---	---	---	---	---	---	---	---	---	---
(Duplicate)	04-Aug-2016		0.16	0.028	0.024	0.053	1	8.4	---	---	---	---	---	---	---	---	---	---
	10-Sep-2016		0.31	0.14	0.039	0.094	0.47	21	0.00012	---	0.000083	0.000013	< 0.0000075	0.000022	0.00064	0.0011	0.00036	0.00014
	17-Aug-2017		0.38	0.088	0.026	0.069	3.4	6.8	---	---	---	---	---	---	---	---	---	---
	16-Jul-2018		0.16	0.045	0.015	0.041	2.3	7.4	---	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Jul-2018		0.14	0.041	0.013	0.038	2.2	6.8	---	---	---	---	---	---	---	---	---	---

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Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH									
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-1			**0.00025**	**0.00025**	**0.00025**	**0.0005**	**0.05**	**0.05**	**0.00010**	**0.00005**	**0.000010**	**0.000009**	**0.0000075**	**0.00004**	**0.00005**	**0.0001**	**0.00008**	**0.000036**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.00005**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**
FTA 99-5-6	18-Oct-1999	**W-CAT-1**	**0.77**	**0.36**	0.082	0.59	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-2000		**3.9**	**1.5**	**0.27**	1.6	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2002		**3.4**	**0.65**	**0.27**	1.9	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Aug-2002		**3.6**	**0.68**	**0.27**	1.8	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		**5.86**	**1.53**	**0.289**	2.50	---	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2007		**4.03**	**0.575**	**0.441**	3.02	< 0.1	6.2	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		**1.4**	**0.08**	**0.26**	1.7	15	54	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013		**3**	**0.012**	**0.19**	1.4	< 0.1	46	---	---	---	---	---	---	---	---	---	---
FTA 99-6-12	25-Aug-2003	**W-CAT-3**	0.0019	0.0012	< 0.0005	0.0043	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2004		0.0010	0.0008	0.0013	0.0077	< 0.1	0.5	---	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Aug-2004		0.0011	0.0009	0.0013	0.0086	0.3	< 0.1	---	---	---	---	---	---	---	---	---	---
	25-Aug-2005		0.0006	< 0.0005	0.0006	0.0051	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
(Duplicate)	25-Aug-2005		0.0007	< 0.0005	0.0006	0.0042	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	0.3	---	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---
	20-Aug-2007		0.0013	< 0.0004	< 0.0004	0.0041	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Aug-2007		< 0.0004	< 0.0004	0.0029	0.0026	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---
	19-Aug-2008		< 0.0004	< 0.0004	0.0007	0.0047	< 0.1	2.3	---	---	---	---	---	---	---	---	---	---
	20-Aug-2012		0.0084	< 0.00040	0.0023	0.043	1.1	1.6	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		**2.4**	**0.0038**	**0.38**	1.7	5.9	65	---	---	---	---	---	---	---	---	---	---
	10-Sep-2016		**3.1**	**0.0061**	**0.49**	2.2	14	140	0.0029	---	**0.00057**	**0.000092**	0.000014	**0.00018**	**0.022**	**0.15**	**0.025**	**0.0010**
(Duplicate)	10-Sep-2016		**5.1**	**0.0063**	**0.41**	1.8	0.64	77	0.0020	---	**0.00021**	0.000072	< 0.0000075	**0.00018**	**0.018**	**0.13**	**0.021**	**0.00086**
	13-Aug-2017		**3.0**	**0.0035**	0.081	1.5	2.5	31	---	---	---	---	---	---	---	---	---	---
FTA-OBS-56	20-Aug-2012	**W-CAT-1**	**7.3**	**3.5**	**0.5**	1.8	2.9	0.36	---	---	---	---	---	---	---	---	---	---
	06-Jul-2016		**4.7**	**1.1**	0.073	2.1	2.9	6.2	0.00014	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.0011	**0.016**	**0.0015**	**0.000075**
FTA-OBS-58	20-Aug-2012	**W-CAT-1**	**0.52**	**0.85**	**0.14**	1.1	5.1	1.7	---	---	---	---	---	---	---	---	---	---
	06-Jul-2016		**7.2**	**3.9**	**0.39**	2.5	1.9	7.6	**< 0.01**	---	**< 0.0010**	**< 0.00085**	**< 0.00075**	**< 0.0010**	**0.022**	**0.11**	**0.042**	**0.0025**
FTA-OBS14	01-Oct-2001	**W-CAT-1**	**6.6**	**0.088**	< 0.05	< 0.05	---	---	0.0011	< 0.00068	**0.00006**	< 0.00001	< 0.00001	< 0.00001	0.0018	**0.062**	**0.0030**	**< 0.00005**
	23-Aug-2004		**3.13**	**0.204**	< 0.0500	0.358	0.2	820	---	---	---	---	---	---	---	---	---	---
	06-Jul-2016		0.35	0.00089	0.0075	0.027	12	460	**0.031**	---	**< 0.0010**	**< 0.00085**	**< 0.00075**	**0.0029**	**0.28**	**0.54**	**0.44**	**0.015**
FTA-OBS16	01-Oct-2001	**W-CAT-1**	**1.5**	**0.014**	< 0.01	0.071	---	---	< 0.00013	< 0.00005	< 0.00001	< 0.00001	< 0.00001	< 0.00001	0.00048	**0.016**	0.00023	< 0.00001
FTA-TR1	01-Oct-2001	**W-CAT-1**	**1.1**	**0.7**	0.036	0.22	---	---	< 0.00001	< 0.00005	< 0.00001	< 0.00001	< 0.00001	< 0.00001	0.00003	0.00077	< 0.00003	< 0.00001
LT7-OBS-53	19-Aug-2012	**W-CAT-1**	**14**	**7.5**	**0.96**	3.9	18	50	---	---	---	---	---	---	---	---	---	---

Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC: Benzene (mg/L)	PHC: Toluene (mg/L)	PHC: Ethylbenzene (mg/L)	PHC: Xylenes (Total) (mg/L)	PHC: PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC: PHC F2 (C_{10}-C_{16}) (mg/L)	PAH: Acenaphthene (mg/L)	PAH: Acridine (mg/L)	PAH: Anthracene (mg/L)	PAH: Benzo(a)Anthracene (mg/L)	PAH: Benzo(a)Pyrene (mg/L)	PAH: Fluoranthene (mg/L)	PAH: Fluorene (mg/L)	PAH: Naphthalene (mg/L)	PAH: Phenanthrene (mg/L)	PAH: Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-1			**0.00025**	**0.00025**	**0.00025**	**0.0005**	**0.05**	**0.05**	**0.00010**	**0.00005**	**0.000010**	**0.000009**	**0.0000075**	**0.00004**	**0.00005**	**0.0001**	**0.00008**	**0.000036**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.00005**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**
Process Water Samples																		
B38 DP02 SUMP	10-Sep-2002	---	0.0022	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	10-Sep-2002		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
B38-N-INLET	02-Sep-2007	---	**0.466**	**0.142**	0.0819	0.312	0.498	0.6	---	---	---	---	---	---	---	---	---	---
	22-Sep-2008		**0.84**	**0.41**	0.072	0.37	0.63	1.3	---	---	---	---	---	---	---	---	---	---
	13-Aug-2009		**1.9**	**0.15**	0.0011	0.21	0.14	1.3	---	---	---	---	---	---	---	---	---	---
	27-Jun-2010		**1.5**	**0.31**	**0.1**	0.55	1.4	1.0	---	---	---	---	---	---	---	---	---	---
	20-Aug-2011		**4.8**	**6.7**	**1.7**	15	1300	630	---	---	---	---	---	---	---	---	---	---
	(Duplicate) 20-Aug-2011		**7.4**	**14**	**4.9**	49	1100	120	---	---	---	---	---	---	---	---	---	---
	26-Sep-2012		**3.9**	**1.8**	**0.15**	1.6	14	7.7	---	---	---	---	---	---	---	---	---	---
	22-Sep-2013		**1.3**	**0.02**	0.06	0.086	0.36	2.7	---	---	---	---	---	---	---	---	---	---
	19-Sep-2014		0.28	0.0018	0.0088	0.025	0.41	0.65	---	---	---	---	---	---	---	---	---	---
	20-Aug-2015		**3.5**	**0.51**	0.067	0.89	1.1	2.0	---	---	---	---	---	---	---	---	---	---
	06-Jul-2016		**4.1**	**0.69**	**0.1**	0.83	1.3	2.2	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	0.00043	**0.017**	**0.00043**	< 0.000020
B38-S-INLET	17-Sep-2004	---	**3.32**	**0.46**	**0.184**	0.447	0.3	0.3	---	---	---	---	---	---	---	---	---	---
	21-Aug-2005		**0.995**	**0.005**	**0.109**	0.119	0.56	0.1	---	---	---	---	---	---	---	---	---	---
	13-Aug-2009		**0.61**	**0.015**	< 0.0004	0.033	0.88	0.5	---	---	---	---	---	---	---	---	---	---
	27-Jun-2010		**2.4**	**0.77**	**0.72**	3	32	50.9	---	---	---	---	---	---	---	---	---	---
B38X-POSTGAC	01-Aug-1999	---	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---
	06-Aug-1999		0.0028	0.0007	0.0011	0.0070	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-1999		0.013	**0.0059**	0.029	0.12	---	---	---	---	---	---	---	---	---	---	---	---
	05-Sep-2000		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	< 0.00001	< 0.00005	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
	18-Sep-2000		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	< 0.00001	< 0.00005	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
B38X-PREGAC	01-Aug-1999	---	**0.44**	**0.17**	**0.37**	1.5	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	01-Aug-1999		**0.43**	**0.17**	**0.37**	1.5	---	---	---	---	---	---	---	---	---	---	---	---
	06-Aug-1999		**0.44**	**0.27**	**0.37**	1.4	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-1999		**1.3**	**0.4**	**0.59**	2.2	---	---	---	---	---	---	---	---	---	---	---	---
	05-Sep-2000		< 0.0005	< 0.0005	< 0.0005	0.0015	---	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2000		< 0.0050	**< 0.0050**	< 0.0050	< 0.0050	---	---	---	---	---	---	---	---	---	---	---	---
B38X-PREOW	01-Aug-1999	---	**0.37**	**0.13**	**0.33**	1.4	---	---	---	---	---	---	---	---	---	---	---	---
	06-Aug-1999		**1.5**	**0.28**	**0.34**	1.4	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-1999		**1.3**	**0.35**	**0.43**	1.7	---	---	---	---	---	---	---	---	---	---	---	---
	05-Sep-2000		0.075	**0.0088**	0.0050	0.038	---	---	0.00016	< 0.00005	**< 0.00002**	**< 0.00002**	< 0.00001	**0.00010**	0.00046	0.00092	**0.00077**	**0.00009**
	18-Sep-2000		**0.65**	**0.079**	0.066	0.26	---	---	0.00008	< 0.00005	**< 0.00003**	< 0.00001	< 0.00001	**0.00007**	0.00020	**0.0022**	0.00039	**0.00006**
B38X-PRESTRIPPER	05-Sep-2000	---	0.03	**< 0.0050**	< 0.0050	0.013	---	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-2000		**0.6**	**0.07**	0.053	0.22	---	---	---	---	---	---	---	---	---	---	---	---
B38X-PUMP	22-Aug-1999	---	**5.7**	**1.4**	**1**	3.7	---	---	**< 0.018**	---	**< 0.016**	**< 0.014**	**< 0.014**	**< 0.016**	**0.024**	**0.23**	**0.038**	**< 0.016**
	01-Sep-2000		**0.55**	**0.015**	0.0096	0.038	---	---	0.00001	< 0.00005	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	0.00004	< 0.00001	0.00002

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Table 4
Water Analytical Results: Organic Parameters

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Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH									
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-1			**0.00025**	**0.00025**	**0.00025**	**0.0005**	**0.05**	**0.05**	**0.00010**	**0.00005**	**0.000010**	**0.000009**	**0.0000075**	**0.00004**	**0.00005**	**0.0001**	**0.00008**	**0.000036**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.00005**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**
FTA-N-INLET	20-Aug-2011	---	**4.5**	**0.93**	**0.32**	1.1	0.76	2.0	---	---	---	---	---	---	---	---	---	---
	26-Sep-2012		**4.1**	**0.23**	**0.098**	0.53	2.6	0.77	---	---	---	---	---	---	---	---	---	---
	22-Sep-2013		**3.2**	**0.22**	0.014	0.39	0.35	1.1	---	---	---	---	---	---	---	---	---	---
	19-Sep-2014		**4**	**0.93**	**0.11**	0.96	2.5	0.55	---	---	---	---	---	---	---	---	---	---
	20-Aug-2015		**2.8**	**0.56**	0.058	0.54	1.5	2.1	---	---	---	---	---	---	---	---	---	---
	06-Jul-2016		**2.4**	**0.43**	0.068	0.55	1.3	2.3	0.00013	---	< 0.000010	**0.000022**	< 0.0000075	0.000017	0.00062	**0.0056**	**0.0011**	**0.00013**

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

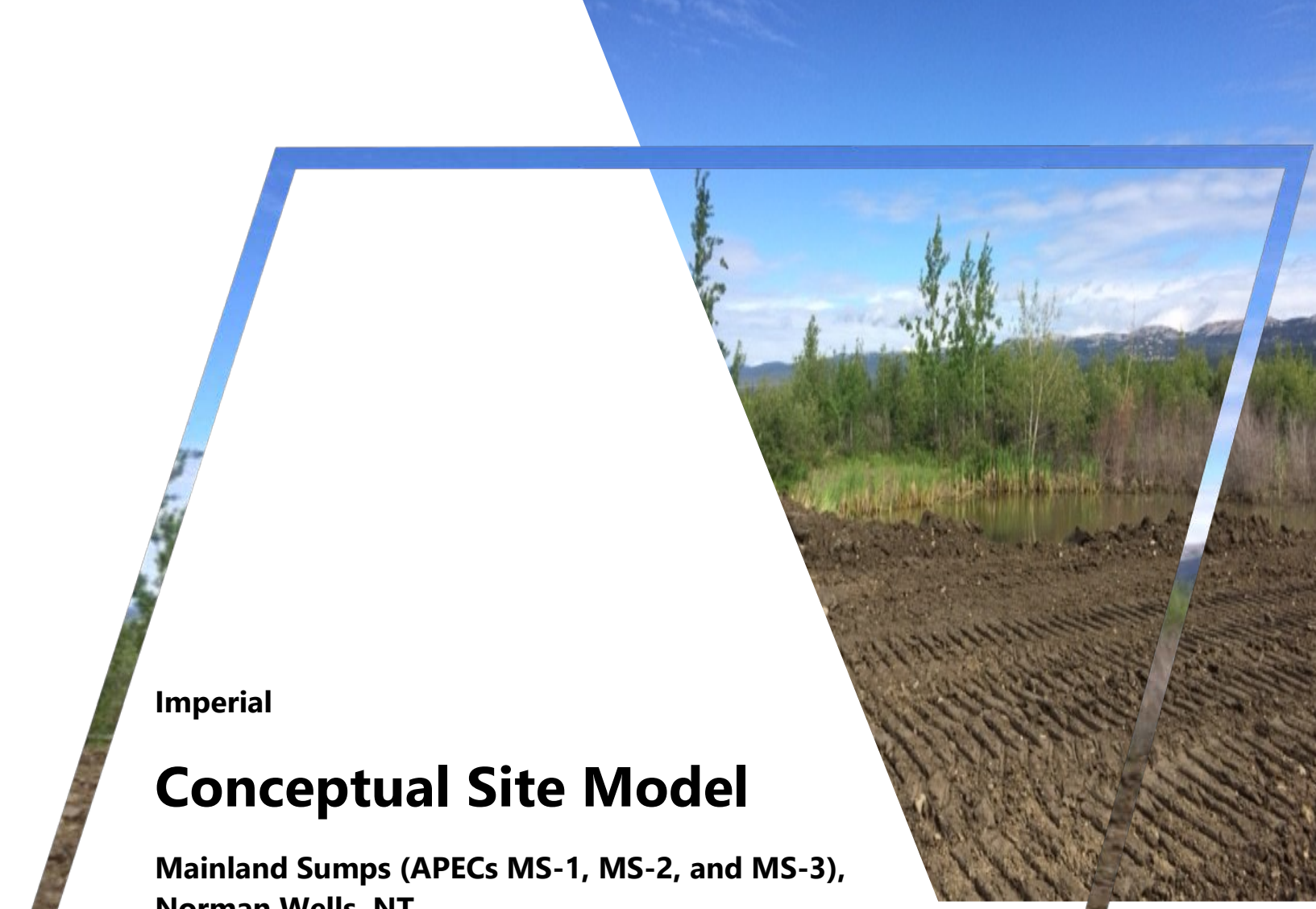
Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-1: Mainland Locations - Surficial Sediments - 95th Percentile Background
W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background

Appendix 8
Conceptual Site Model: Mainland Sumps



Imperial

Conceptual Site Model

Mainland Sumps (APECs MS-1, MS-2, and MS-3), Norman Wells, NT

30 May 2019

407011-00622-500 – CA-REP-0001

Advisian
Suite 500, 151 Canada Olympic Rd SW
Calgary, AB T3B 6B7 CANADA
Phone: +1 403 247 0200
Facsimile: +1 403 247 4811
www.advisian.com

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Project No. 407011-00622-500-CA-REP-0001 - Conceptual Site Model: Mainland Sumps (APECs MS-1, MS-2, and MS-3), Norman Wells, NT

Rev	Description	Originator Approval	Reviewer Approval	Project Manager Approval	Date
0	Issued as Final	R. Reader	M. Brown	S. Gibb	30-May-19

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1. Conceptual Site Model Summary

Site Description

LAND USE	
Site Description:	Mainland Drilling Sump: drilling waste (MDS, APEC MS-1) Well Services Sump: well servicing waste (WSS, APEC MS-2) Northern Sumps: drilling waste (Sumps 1 through 6, APEC MS-3). Mainland Sumps have been backfilled, remediated, and/or capped. No other surrounding infrastructure.
Current Land Use:	CCME Industrial land use
Future Land Use:	CCME Industrial land use
HISTORICAL LAND USE	
Infrastructure type:	Sumps (Figure 2)
Notes:	Used for storage/disposal of drilling and well servicing wastes
Years Active:	Northern Sumps: pre-1982 to approximately 1990. Mainland Drilling Sump: pre-1993 to 2007. Well Services Sump: pre-1992 to 2007.
SITE SETTING	
Topography and Drainage:	Topography in the vicinity of the Mainland Sumps is generally flat. The overall slope and drainage on the Mainland is generally toward the Mackenzie River flood plain. See Figures 3 and 5A.
Nearby Surface Water Bodies (Distance and Direction):	Wetlands (100 m to the north and 150 m to the south). Seepage Lake and sewage lagoon (500 m to the east-northeast) Bosworth Creek (800 m to the southwest) Mackenzie River (1,000 m to the south)

SOIL AND GROUNDWATER CONDITIONS

Surficial Materials:	Silty clay and sandy silt, with occasional sand lenses (see Figures 5A/B/C).
Presence of Permafrost:	Discontinuous in the vicinity of the Sumps, but interpreted to be present to the east, south, and west of the Site underlying undisturbed and vegetated areas.
Depth to Bedrock:	~ 1 to 3 mbgs on the undisturbed boundaries of the site. Up to 4.5 mbgs in the footprint of the sumps where excavated.
Bedrock Lithology:	Interbedded siltstone and shale
Number of Groundwater-Bearing Zones (GBZs):	2 (based on different geochemistry within surficial sediments and shallow bedrock).
Number of Piezometers:	37 current, 9 historical now destroyed/decommissioned.
Free Product in Surficial GBZ:	not encountered
Free Product in Shallow Bedrock GBZ:	not encountered

First Groundwater-Bearing Zone

Primary Soil Type/Lithology:	Unconsolidated silty clay and sandy silt, with occasional sand lenses.
Dominant Grain Size:	Fine
Depth to Groundwater Surface:	~ 0.5 to 2 mbgs
Hydraulic Conductivity (Minimum):	3.3×10^{-7} m/s
Hydraulic Conductivity (Maximum):	7.1×10^{-6} m/s
Hydraulic Conductivity (Geometric Mean K):	7.7×10^{-7} m/s
Vertical Hydraulic Gradient:	Not assessed (underlain by discontinuous permafrost in the surficial sediments and shallow bedrock).
Lateral Hydraulic Gradient (I):	Poorly defined, not estimated (due to discontinuous permafrost, frequent frost jacking of monitoring wells resulting in survey errors).

Groundwater Flow Direction and Velocity:	Groundwater flow is interpreted to be relatively stagnant in the vicinity of the Mainland Sumps, with no apparent or consistent pattern to hydraulic heads. Some localized shallow flow towards the southwest in the WSS area. The Mainland Sumps are interpreted to be surrounded by shallow permafrost to the east, west, and south, as well as permafrost under the sumps. This permafrost barrier is inferred to hydraulically isolate the Site in those directions.

Shallow Bedrock Groundwater-Bearing Zone:

Primary Soil Type/Lithology:	Interbedded siltstone and shale
Dominant Grain Size:	Fine
Depth to Groundwater Surface:	~ 1 to 2 mbgs
Hydraulic Conductivity (Minimum):	3.8×10^{-8} m/s
Hydraulic Conductivity (Maximum):	1.7×10^{-5} m/s
Hydraulic Conductivity (Geometric Mean K):	7.7×10^{-7} m/s
Vertical Hydraulic Gradient:	Not assessed (underlain by discontinuous permafrost in the surficial sediments and shallow bedrock).
Lateral Hydraulic Gradient (I):	Not estimated (due to discontinuous permafrost and stagnant groundwater conditions, see discussion above).
Groundwater Flow Direction and Velocity:	Groundwater flow is interpreted to be relatively stagnant in the vicinity of the Mainland Sumps. Permafrost underlying and surrounding the sumps area is inferred to hydraulically isolate the Site to the east, west, and south.

HISTORICAL ENVIRONMENTAL ACTIVITIES

Soil, groundwater, and surface water characterization (pre-1997 to present) (Figures 4 A/B/C)

Remedial excavation and reclamation of the MDS (~470 m^3) and WSS (~2,653 m^3) (2007 to 2009)

Closure monitoring of the MDS and WSS (2010 to present)

Vegetation and biophysical assessment (2011)

Sump management activities (i.e. fluid removal, backfilling, and capping - 2012 to present)

Geophysical surveys (1998, 2005, 2008, 2013)

Screening level risk assessment (2013)

Sump management strategy developed (2015)

CURRENT STATUS

Remaining soil and groundwater impacts (Figures 6A/B/C/D and 7, Tables 1 through 5).

Sources and Impacts

SOURCES

Historical Sources:	Drilling waste (i.e. drilling mud and returns) and well servicing waste within the Sumps.
Current Sources:	Remaining sump material (primary source) and impacted soil (secondary source).

KNOWN ENVIRONMENTAL CONCERNS

a. Soil

Potential Contaminants of Concern:	Petroleum hydrocarbons (PHCs), salinity, metals, Polycyclic Aromatic Hydrocarbons (PAHs).
Proven Contaminants of Concern:	PHCs and PAHs – benzene, PHC F1 to F4 and PAHs in part due to natural seepage and shallow bedrock. Limited salinity – electrical conductivity (primarily driven by chloride) – In part due to natural seepage and shallow bedrock. Metals in part due to natural seepage and shallow bedrock
Delineation:	Localized salinity impacts are laterally delineated, but have not been delineated vertically into bedrock (Figures 6A/B and Table 1). PHC impacts associated with the Mainland Sumps have been delineated laterally and generally vertically (Figures 6C/D and Table 2). Confirmatory samples from the MDS and WSS excavations indicate that residual impacts may be present in bedrock underlying those sumps.

b. Groundwater

Potential Contaminants of Concern:	PHCs, salinity, metals, phenols, PAHs
Proven Contaminants of Concern:	PHCs – none currently over applied guidelines and background Limited salinity – chloride Metals & Phenols As noted with soils, some of the PHC, salinity, metals and phenols issues in groundwater and surface water are attributed in part to natural seepage and shallow bedrock.
Presence of Free Product:	No free phase identified in the vicinity of the Mainland Sumps.
Delineation:	Lateral delineation of the chloride plume is achieved based on 2016 to 2018 data (Figure 7 and Table 3). Above-guideline chloride persists closer to the footprint of the Sumps, however the Mainland Sumps are interpreted to be surrounded by shallow permafrost to the east, west, and south, which is inferred to hydraulically isolate the Site in those directions. Chloride in groundwater has not been delineated vertically as it extends into bedrock. Some of the chloride is attributed to natural background conditions in upper bedrock.

Migration Pathways and Receptors

MIGRATION PATHWAYS

Summarized in Figures 8 and 9.

Potential pathways include leaching from soil to groundwater, lateral migration in groundwater, discharge to surface water, shallow vapour migration in soil, water and wind erosion.

RECEPTORS

Summarized in Figures 8 and 9.

Main receptor of interest is the wetland/lake located north of the Site, in relation to human, wildlife and freshwater aquatic life receptors. Plants and soil invertebrates may also be receptors in the rooting zone of shallow soils.

EXPOSURE PATHWAYS

Summarized on Figures 8 and 9.

Synopsis of Conceptual Risk

In terms of soil related exposure pathways, the remedial excavations and reclamation of the MDS and WSS Sumps (2007 to 2009), combined with various sumps 1 to 6 management activities (i.e. fluid removal, backfilling, and capping – 2012 to present) have reduced conceptual risk. Some residual soil impacts exceeding guidelines remain in place. Risks related to potential exposure pathways for human, ecological, microbial and wildlife contact or ingestion have been reduced, but not eliminated. Capping with clean soils, and contouring to enhance runoff and prevent surface water accumulation directly above the sumps has reduced potential exposure scenarios for freshwater aquatic life, wildlife, and vegetation.

In terms of groundwater related exposure pathways, chloride and phenols are two parameters of interest which can be partially attributed to sump contents, although naturally-occurring concentrations are also elevated above the applied guidelines in the local shallow bedrock. Groundwater flow appears to be relatively stagnant in the area, confined by permafrost laterally and vertically. As such the exposure scenarios related to wildlife watering and freshwater aquatic life at the water body to the north would be considered complete but inactive. In terms of groundwater consumption, the exposure scenario is incomplete for both humans and wildlife. Human drinking water is sourced locally from the Mackenzie River upstream of this site, and is treated by the Town of Norman Wells before use.

Limitation of Liability, Scope of Report, and Third Party Reliance

This report has been prepared and the work referred to in this report has been undertaken by WorleyParsons for Imperial Oil Limited. It is intended for the sole and exclusive use of Imperial Oil Limited, its affiliated companies and partners and their respective [insurers], agents, employees, and advisors (collectively, "Imperial Oil"). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and WorleyParsons make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigation undertaken by WorleyParsons with respect to this report and any conclusions or recommendations made in this report reflect WorleyParsons' judgment based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. This report has been prepared for the specific application to this site and it is based, in part, upon visual observation of the site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site, substances addressed by the investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions, and recommendations in this report may be necessary.

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Figures

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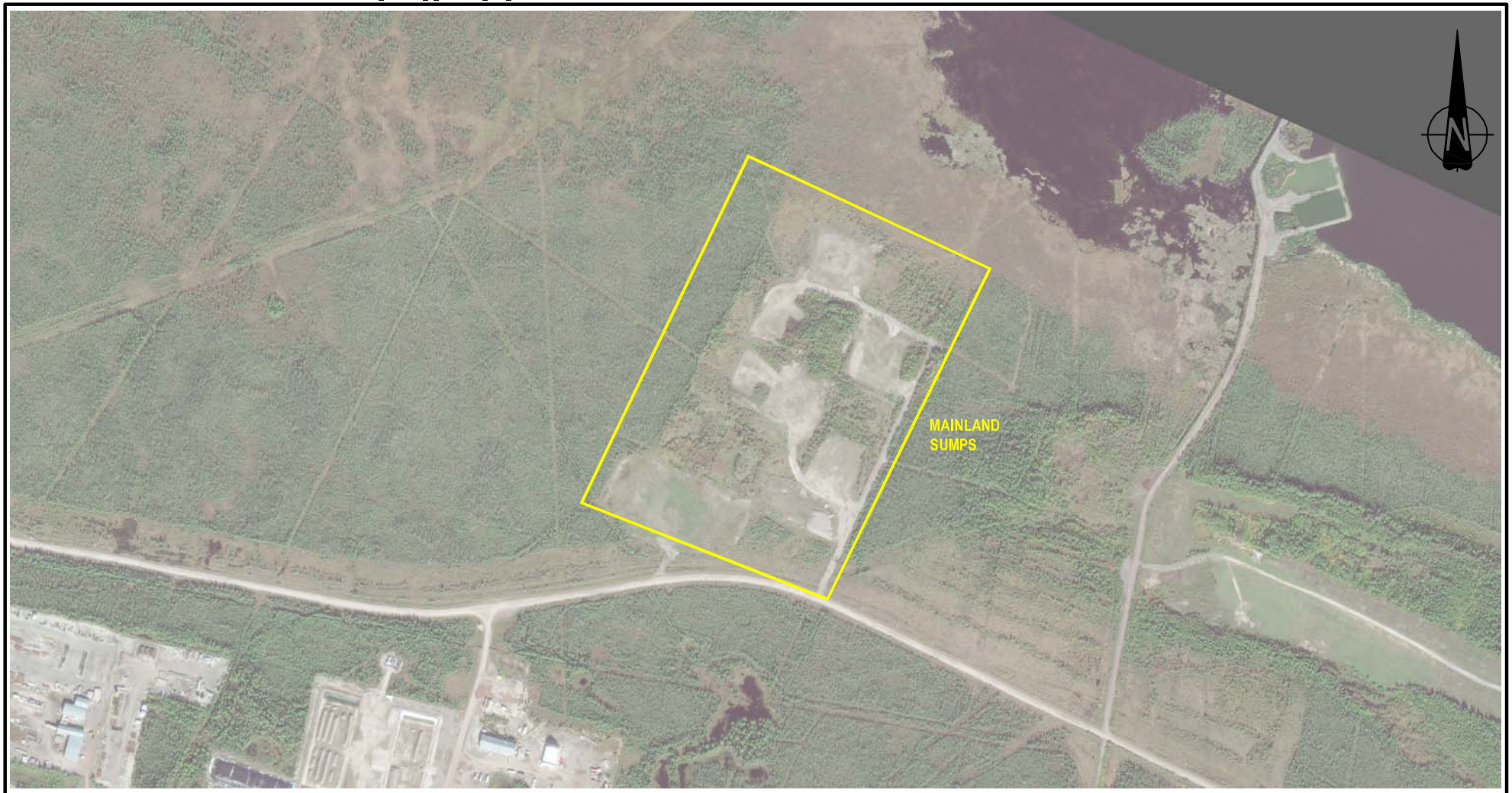

AIR PHOTO SOURCE: PLANET LABS GEOMATICS CORP.,
DATE: APRIL 6 AND 30, 2017

3TM NAD27

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1:8000

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

SITE LOCATION MAP

Date:	29-MAY-19	Drawn by:	BMF	Edited by:	-	App'd by:	

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FIG No 1

REV B

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m 0 50 100 200 m

1:4000

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

HISTORICAL AIR PHOTO 1993

OneWay to zero harm

Date:	Drawn by:	Edited by:	App'd by:
06-MAY-19	BMF	-	

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FIG No: 2

REV: A

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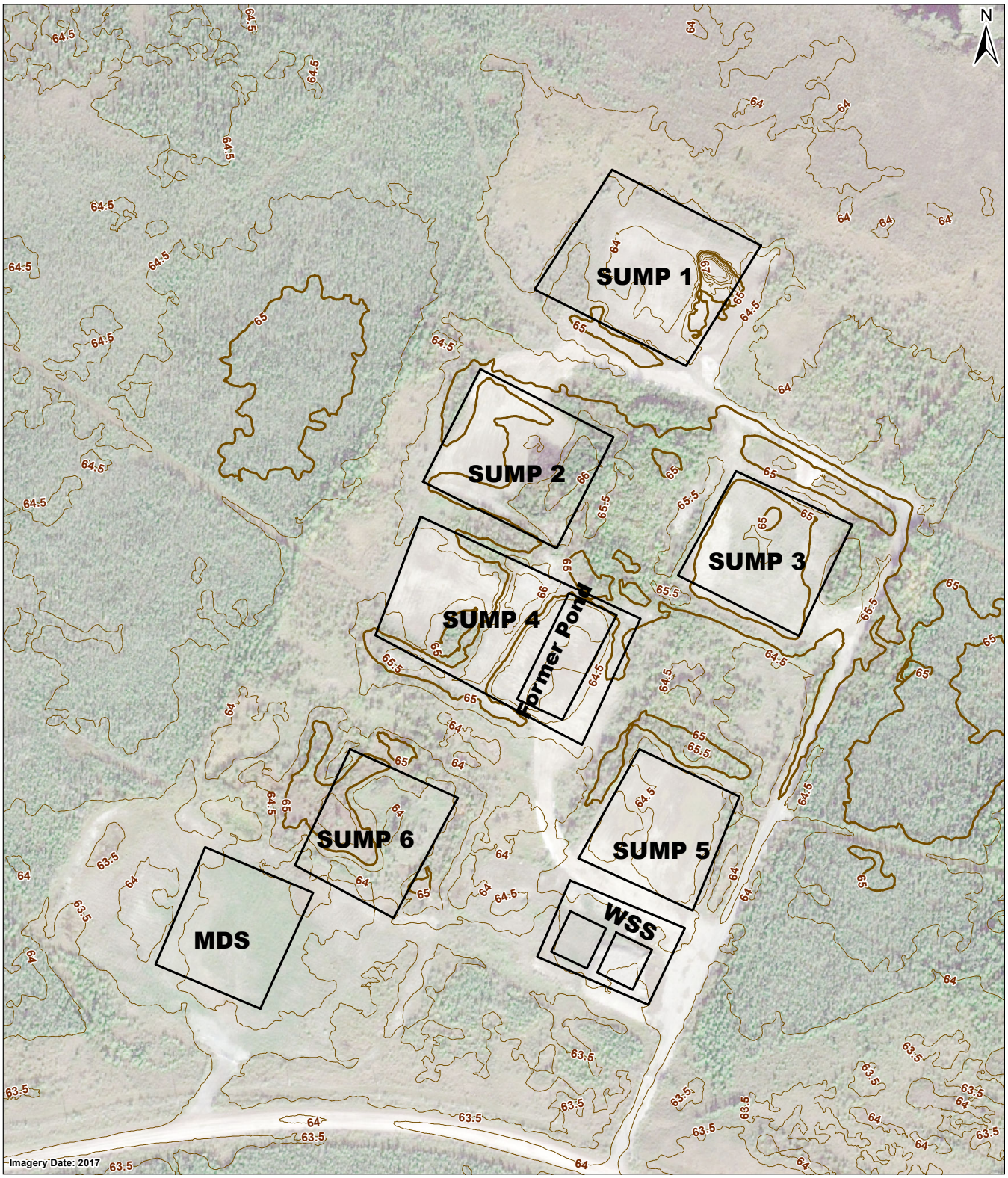

Elevation Contour (2.5m interval)

Elevation Contour (0.5m interval)

Source:
Airborne Imaging; 2012

0 50 100
Metres
1:3,000

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

SITE PLAN SHOWING TOPOGRAPHY

Date:	03-MAY-19	Drawn by:	T.G.	Edited by:	T.G.	App'd by:	. .

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407011-00622-500

FIG No 3

REV A

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PLOT DATE & TIME: never never
SAVE DATE & TIME: 2019-05-03 1:27:55 PM
USER NAME: Tom.Graham
ISSUING OFFICE: CALGARY GIS

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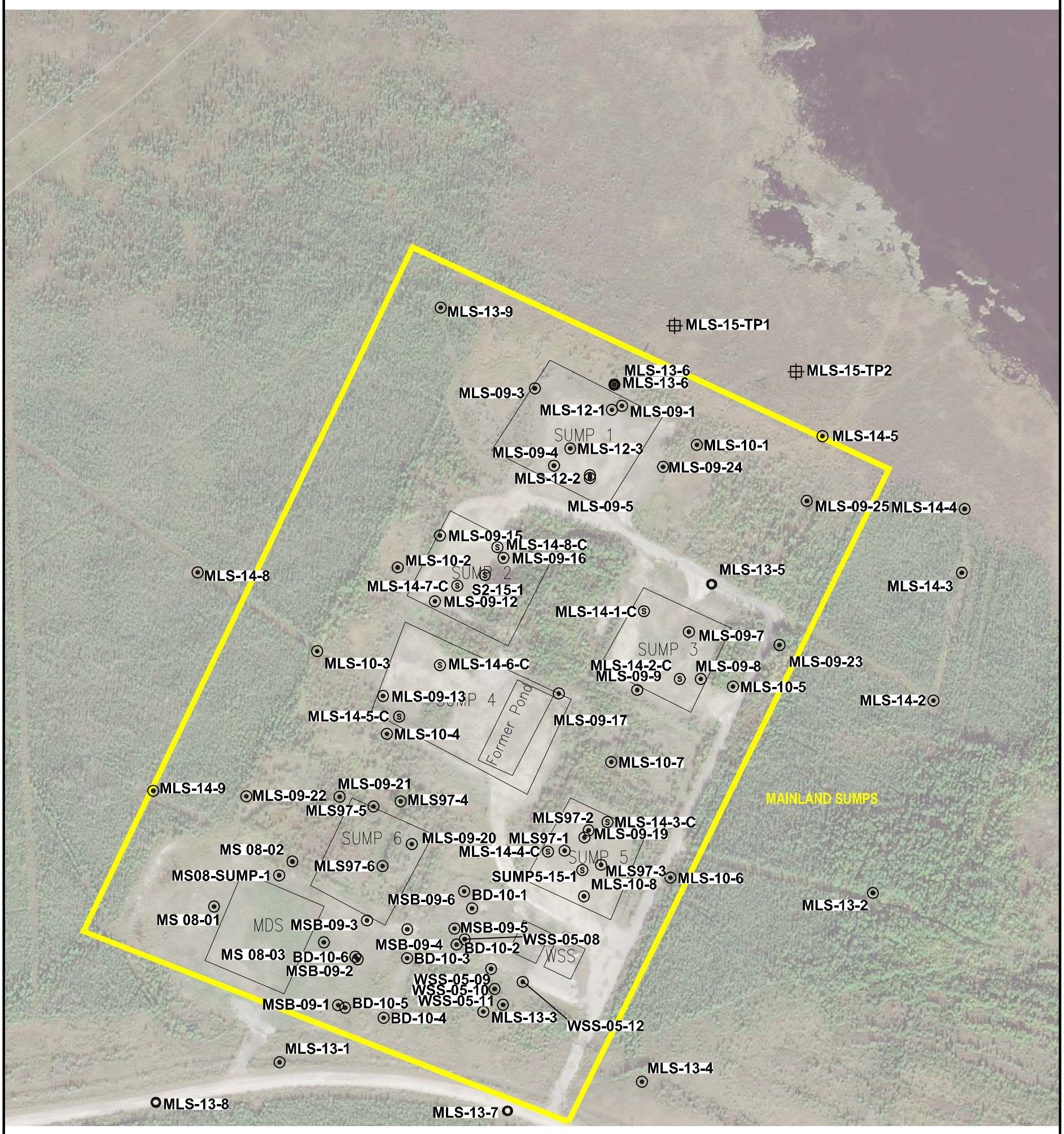

LEGEND

- SOIL SAMPLING LOCATION
- SUMP CONTENT SAMPLING LOCATION
- TEST PIT LOCATION
- THERMISTOR LOCATION

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014.

m 0 50 100 150 m

1:3000

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

SITE PLAN SHOWING SOIL SAMPLING LOCATIONS

Date:	Drawn by:	Edited by:	App'd by:
06-MAY-19	OTHERS	BMF	

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FIG No 4A | REV A

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ISSUING OFFICE: CALGARY
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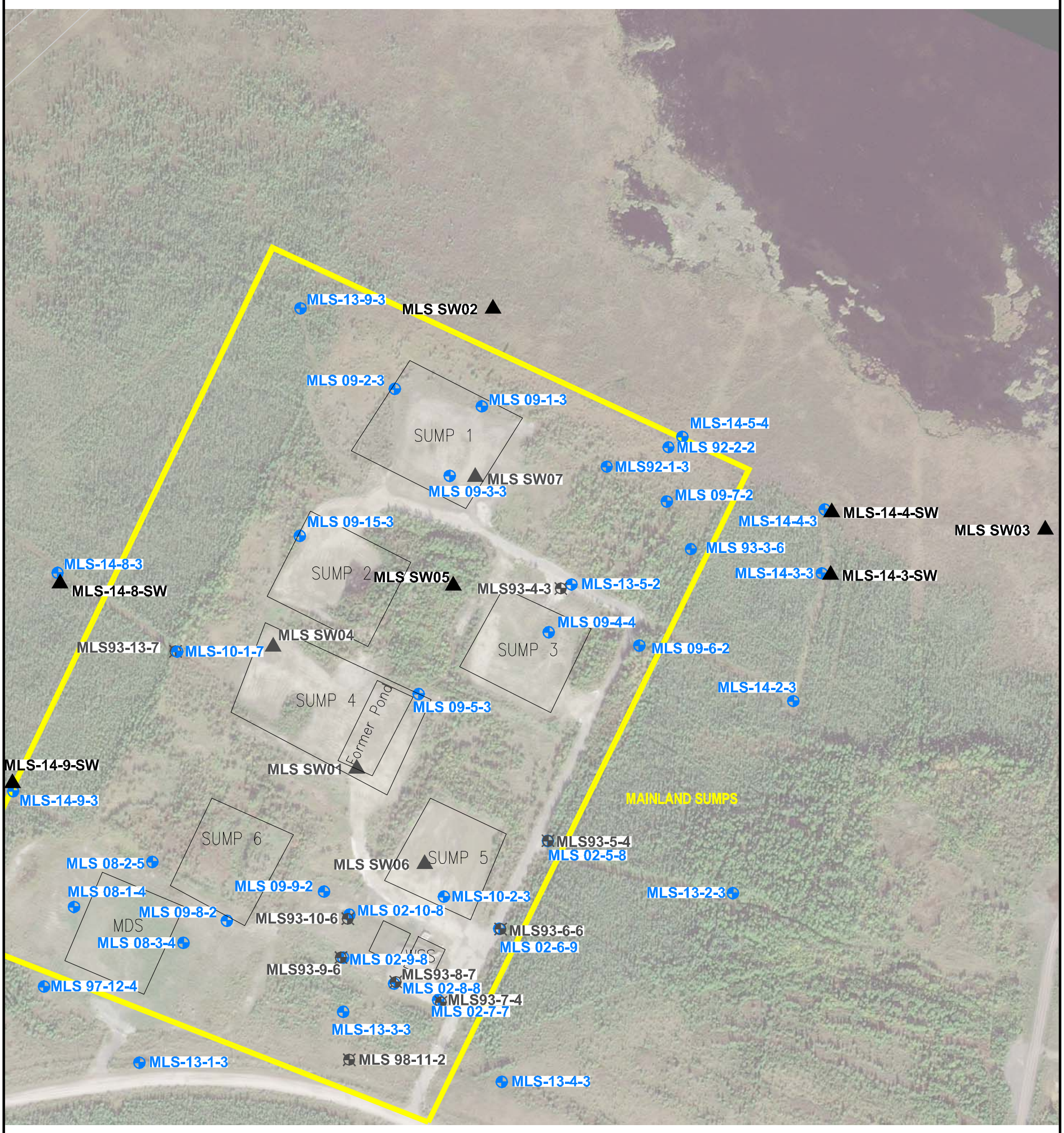

LEGEND

- MONITORING WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- SURFACE WATER SAMPLE LOCATION
- FORMER SURFACE WATER SAMPLE LOCATION (BACKFILLED)

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014.

m 0 50 100 150 m

1:3000

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

SITE PLAN SHOWING WATER SAMPLING LOCATIONS

Date:	Drawn by:	Edited by:	App'd by:
29-MAY-19	OTHERS	BMF	

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WorleyParsons Project No. 407011-00622-500

FIG No 4B | REV C

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ISSUING OFFICE: CALGARY
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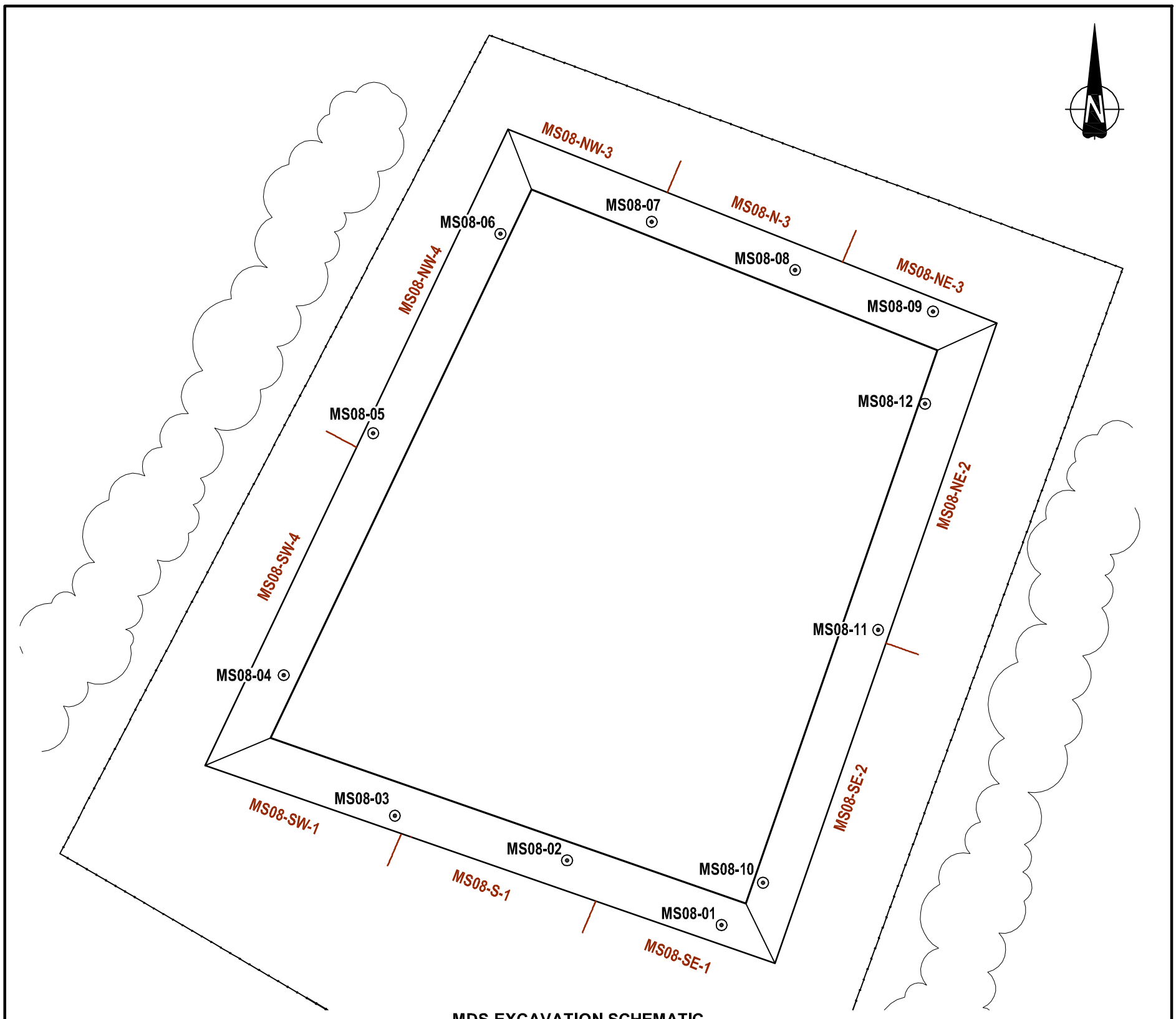
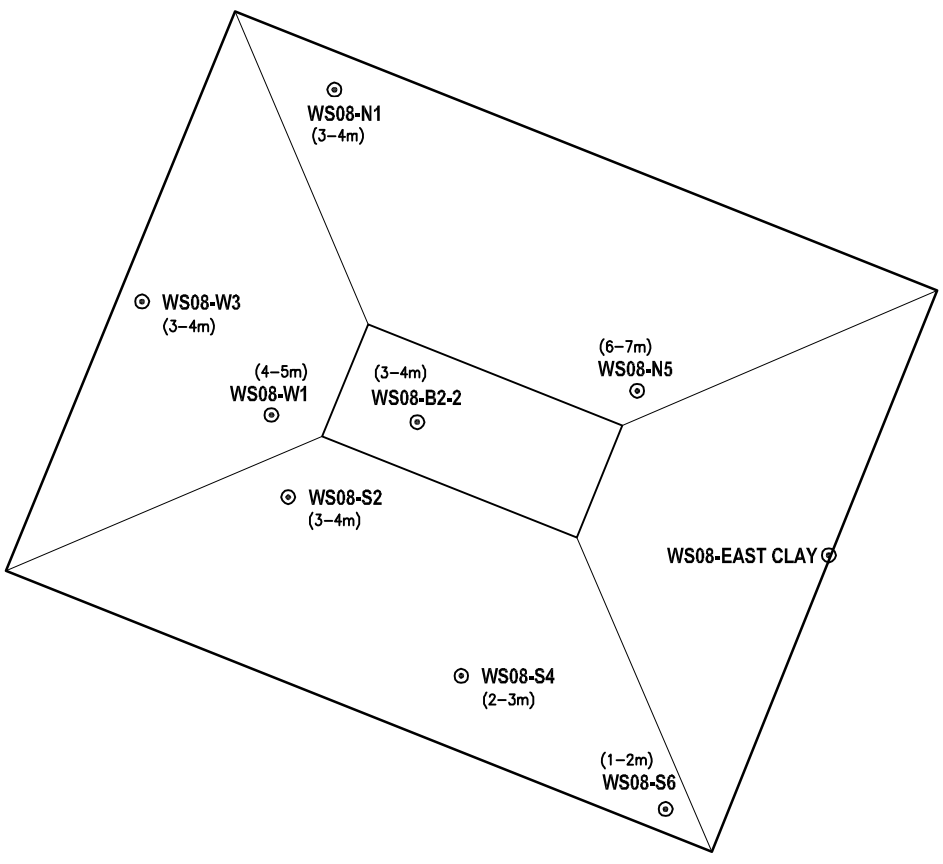
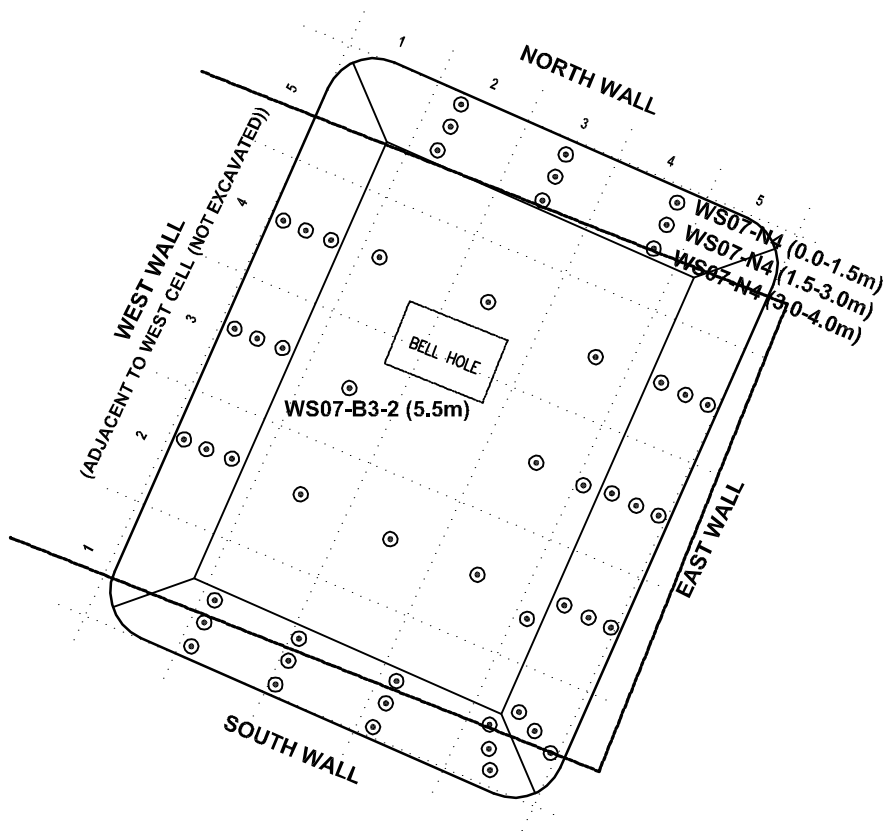


MDS EXCAVATION SCHEMATIC
SCALE: 1:500



WSS WEST CELL EXCAVATION SCHEMATIC
SCALE: 1:250



WSS EAST CELL EXCAVATION SCHEMATIC
SCALE: 1:300

LEGEND

⊙ SOIL SAMPLING LOCATION

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

HISTORICAL EXCAVATION
SITE PLANS SHOWING SAMPLING LOCATIONS

Date:	03-MAY-19	Drawn by:	OTHERS	Edited by:	BMF	App'd by:	

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WorleyParsons Project No.
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FIG No 4C | REV A

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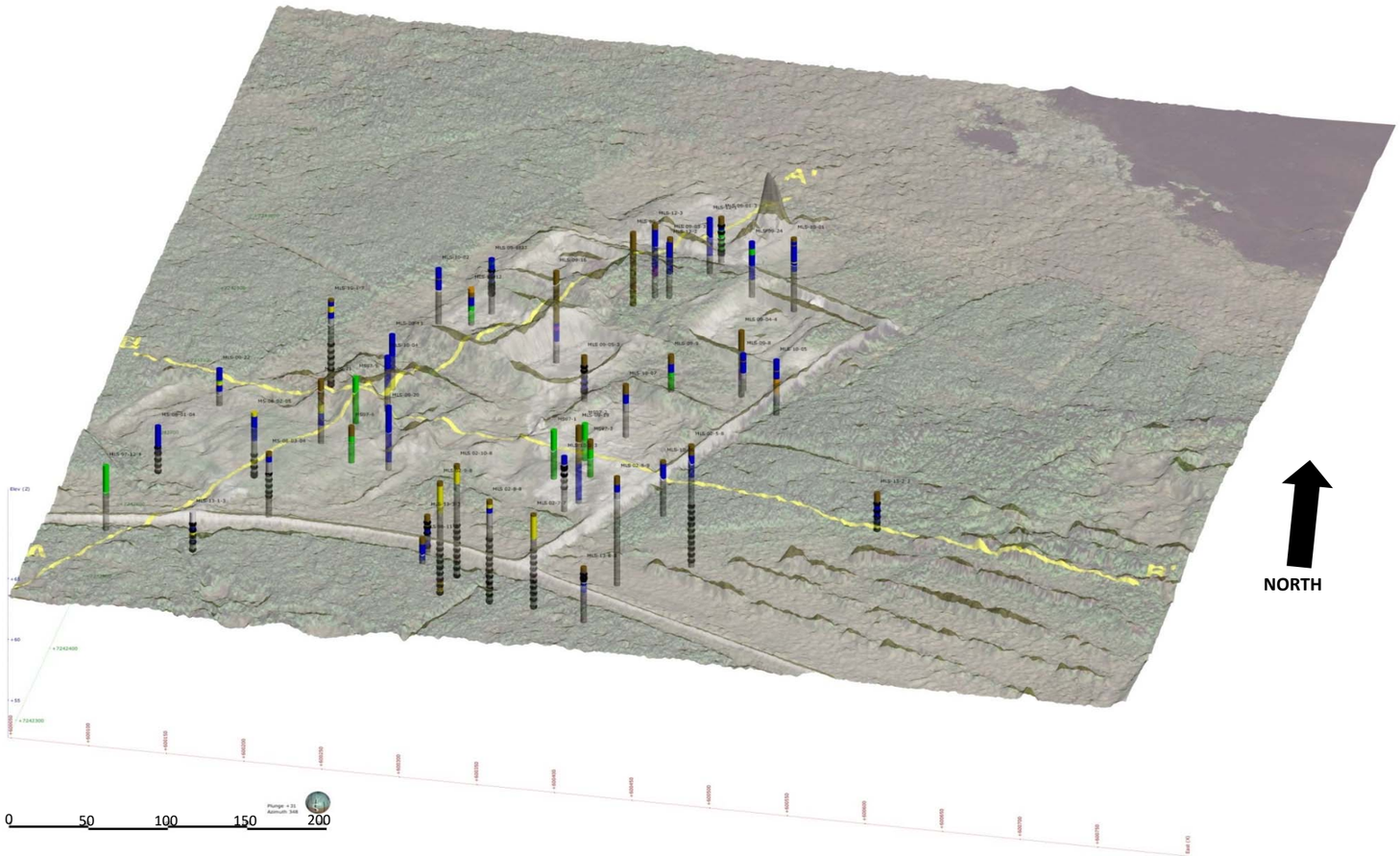

NORTH

- CLAY
- COBBLES AND/OR GRAVEL
- DRILLING MUD
- FILL/ORGANICS
- NO RECOVERY
- PERMAFROST
- SAND
- SANDSTONE
- SILT
- SILTSTONE/MUDSTONE/SHALE

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

SITE PLAN 3-D VISUALIZATION

Date: 10-May-19	Drawn by: AM	Edited by: RR	App'd by:

OneWay™ to zero harm

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WorleyParsons Project No.
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FIG No. 5A

REV A

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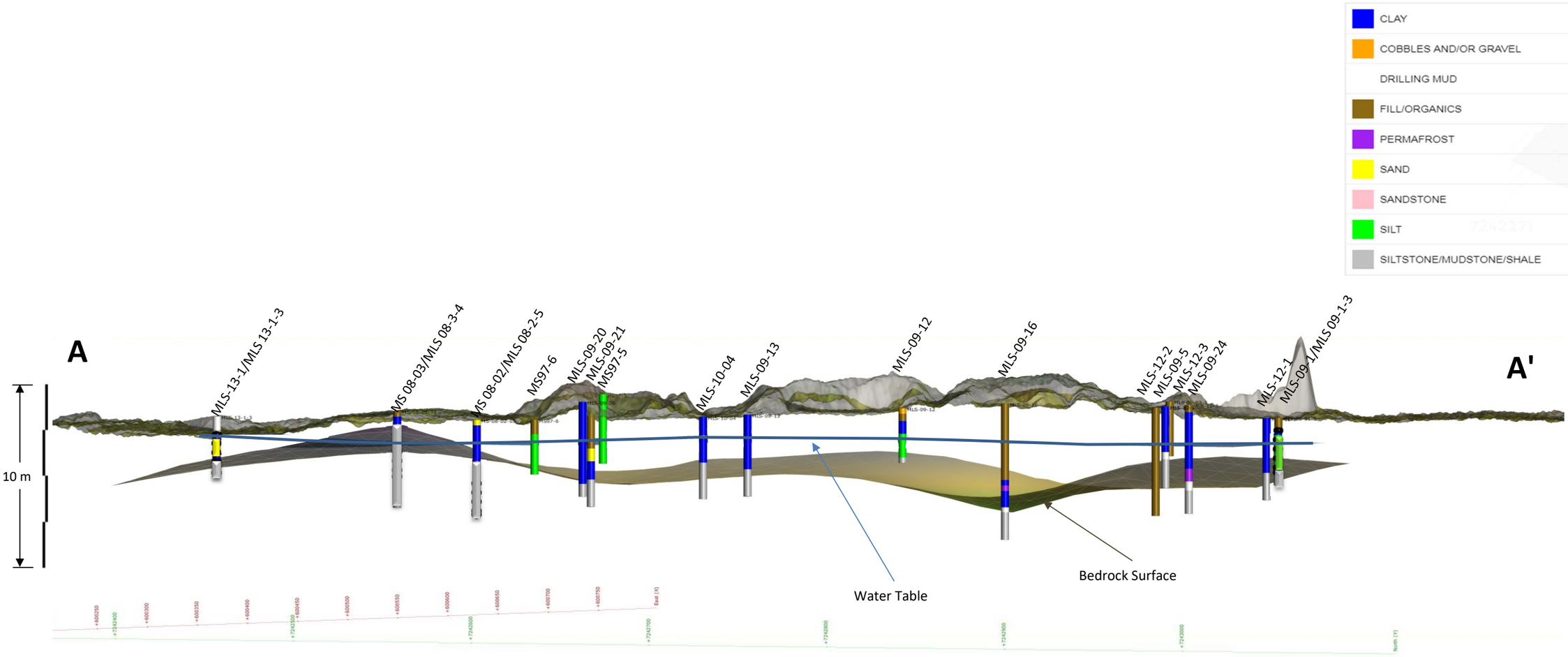
FILE DIRECTORY: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.5_PDF_FINAL_FIGURES\2 - CSMS\4 - MLS



NORTH

Notes: 1) 10x Vertical Exaggeration
2) Cross-section width is 20 m.

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

CROSS SECTION A-A'
(SOUTHWEST TO NORTHEAST)

Date:	Drawn by:	Edited by:	App'd by:
10-May-19	AM		MB

WorleyParsons Project No.
407011-00622-500

FIG No. 5B
REV A

OneWay to zero harm
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WorleyParsons Group

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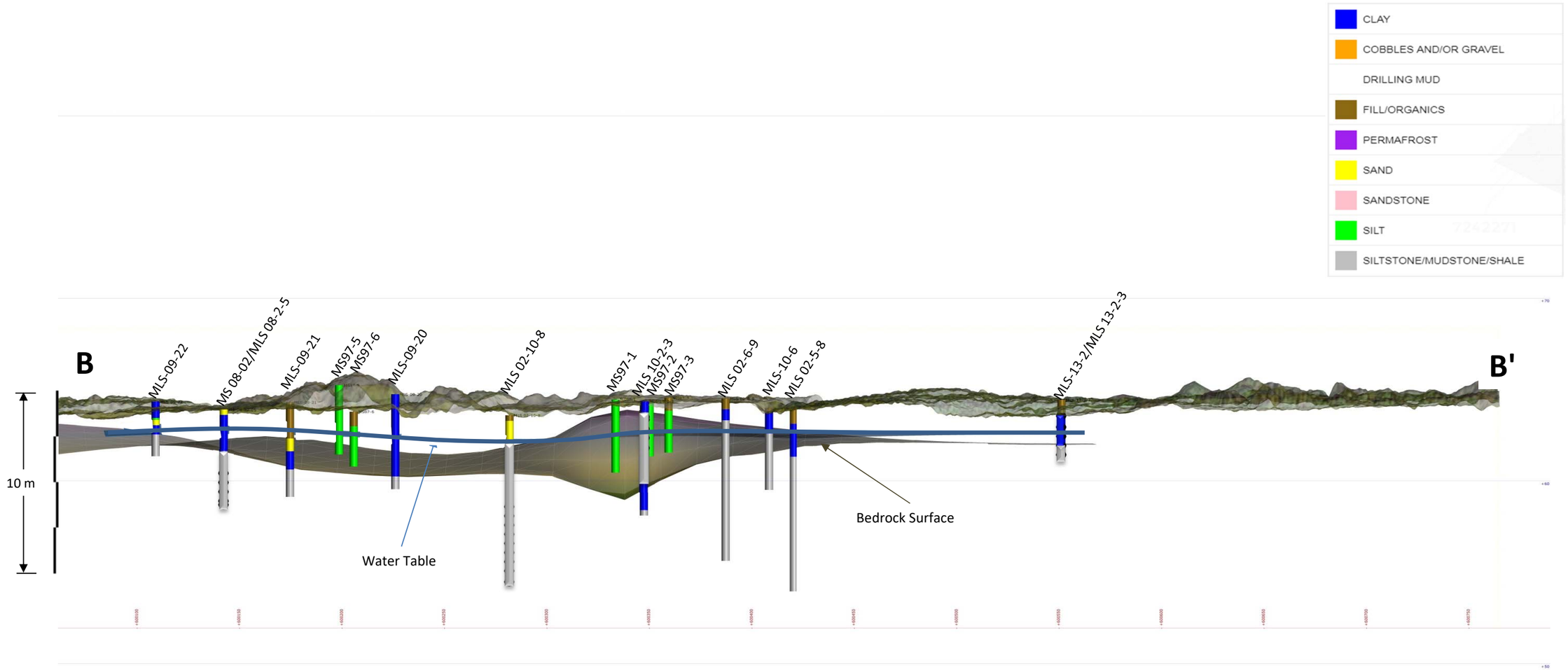
FILE LOCATION: CALGARY

FILE DIRECTORY: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.5_PDF_FINAL_FIGURES\2 - CSMS\4 - MLS



NORTH

Notes: 1) 10x Vertical Exaggeration
2) Cross-section width is 20 m.

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

CROSS SECTION B-B'
(WEST TO EAST)

Date:	Drawn by:	Edited by:	Appr'd by:
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OneWay™ to zero harm

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WorleyParsons Project No.: 407011-00622-500

FIG No.: 5C

REV: A

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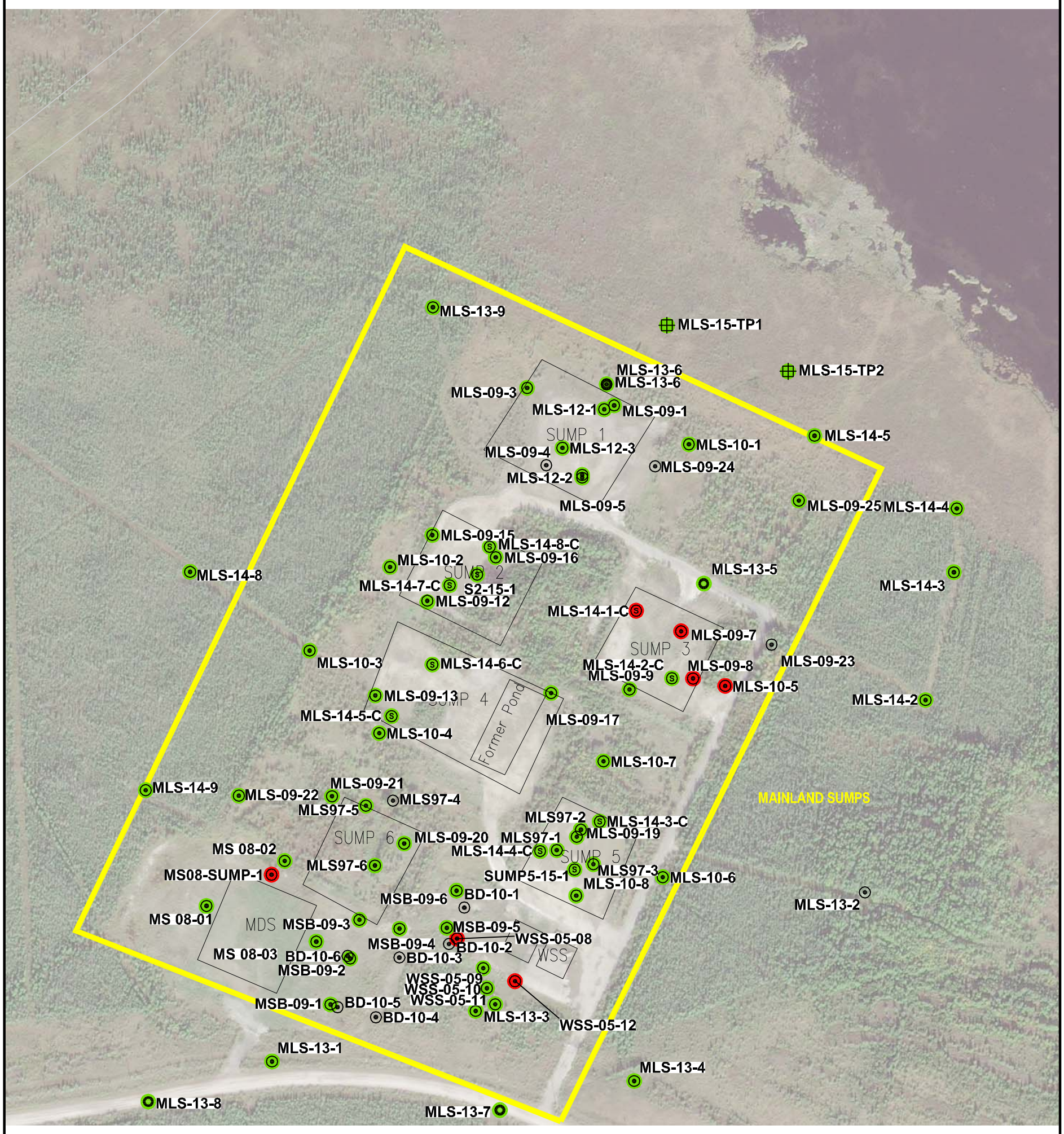

LEGEND

- SOIL SAMPLING LOCATION
- SUMP CONTENT SAMPLING LOCATION
- TEST PIT LOCATION
- THERMISTOR LOCATION

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET THE APPLIED ASSESSMENT CRITERIA, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED THE APPLIED ASSESSMENT CRITERIA, SHOWN IN RED
- LOCATION NOT SAMPLED

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014.

m 0 50 100 150 m

1:3000

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

SITE PLAN SHOWING
SOIL ELECTRICAL CONDUCTIVITY ANALYTICAL RESULTS

Date:	Drawn by:	Edited by:	App'd by:
06-MAY-19	OTHERS	BMF	

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WorleyParsons Project No.
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FIG No 6A | REV A

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ISSUING OFFICE: CALGARY
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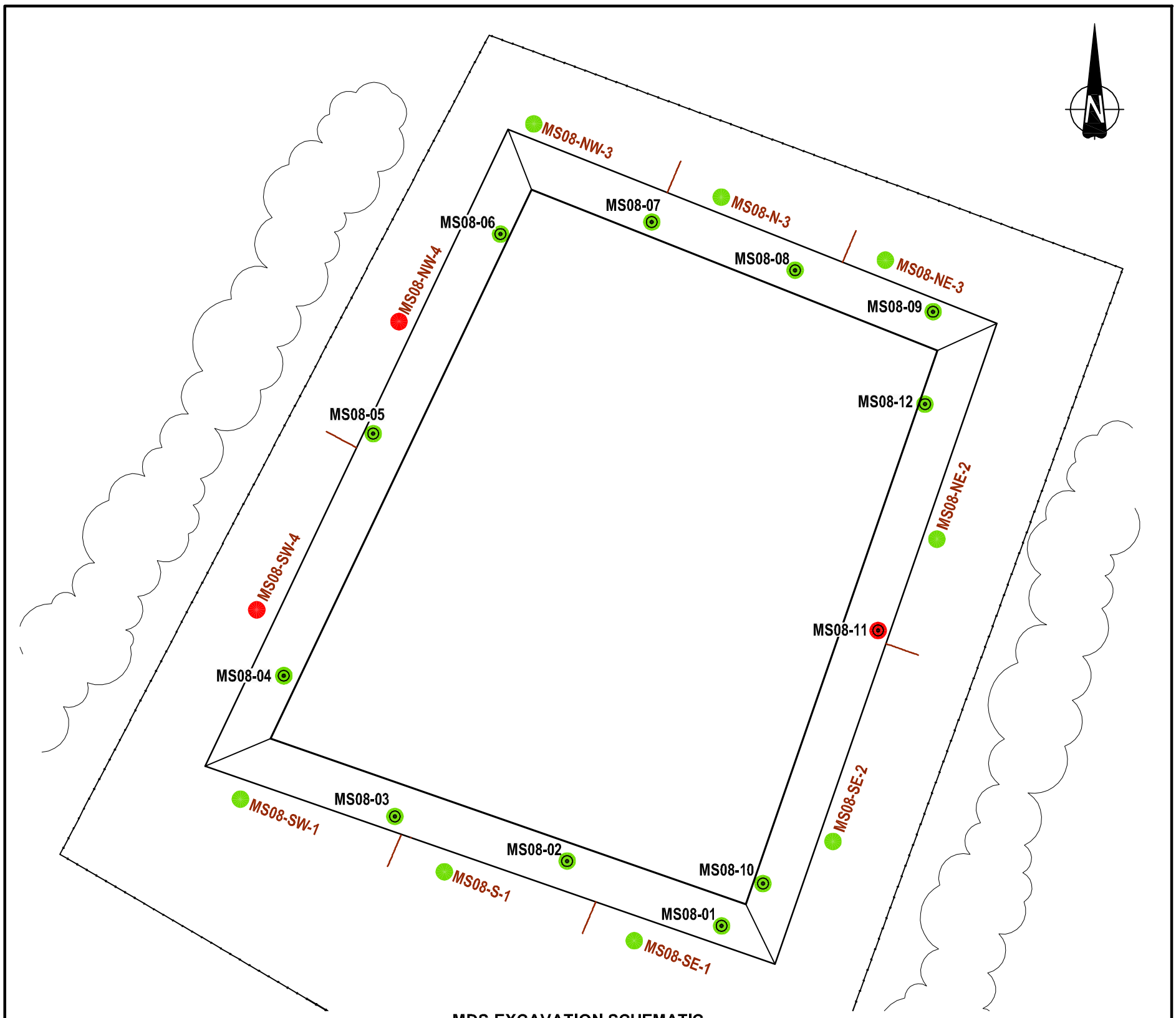
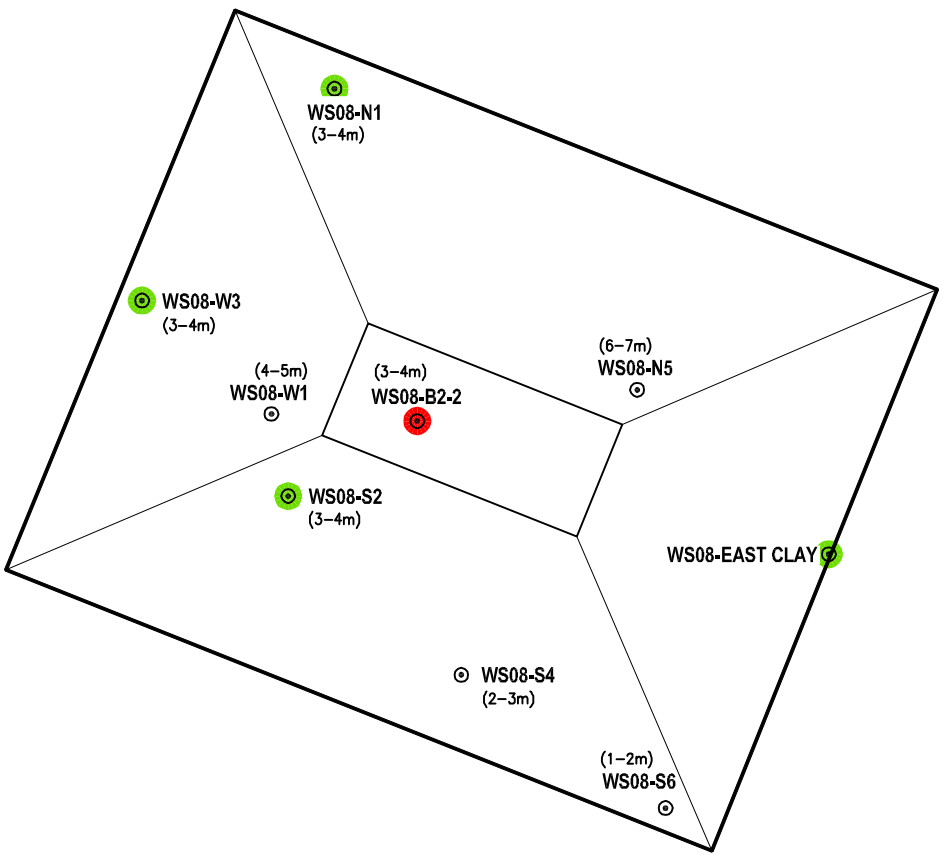
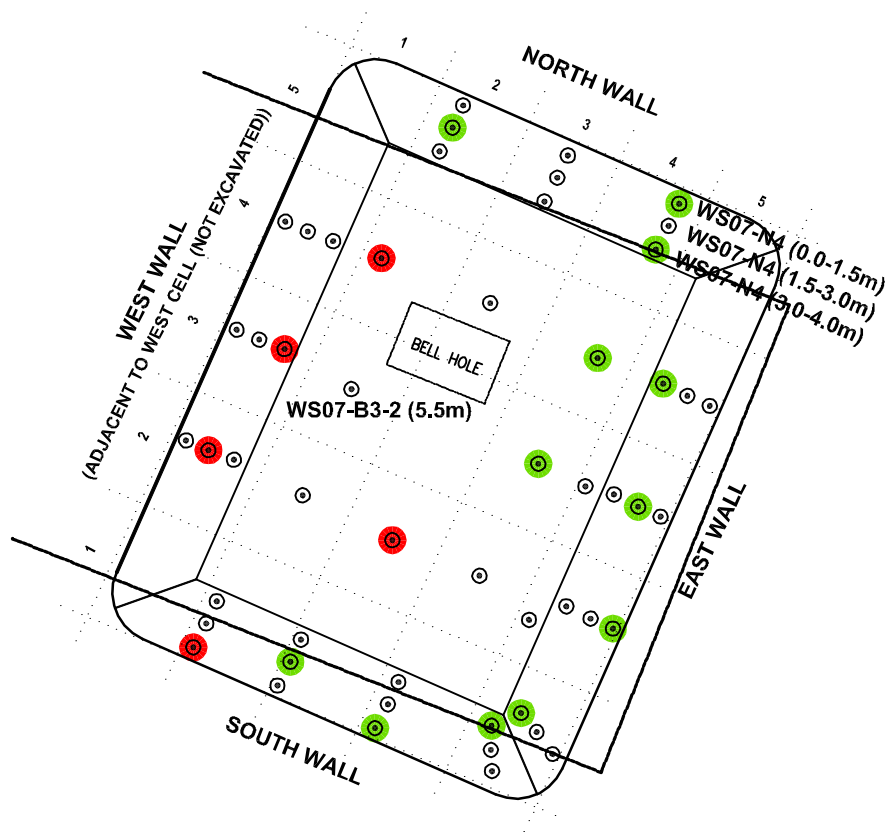
FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018_MAINLANDEAST_CSM.DWG



MDS EXCAVATION SCHEMATIC
SCALE: 1:500



WSS WEST CELL EXCAVATION SCHEMATIC
SCALE: 1:250



WSS EAST CELL EXCAVATION SCHEMATIC
SCALE: 1:300

LEGEND

⊙ SOIL SAMPLING LOCATION

ANALYTICAL RESULTS

◉ LOCATION WHERE ALL SOIL SAMPLES MET THE APPLIED ASSESSMENT CRITERIA, SHOWN IN GREEN.

◉ LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED THE APPLIED ASSESSMENT CRITERIA, SHOWN IN RED

⊙ LOCATION NOT SAMPLED

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

HISTORICAL EXCAVATION SITE PLANS SHOWING SOIL ELECTRICAL CONDUCTIVITY ANALYTICAL RESULTS

Date:	Drawn by:	Edited by:	App'd by:
22-MAY-19	OTHERS	BMF	

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407011-00622-500

FIG No: 6B
REV: B

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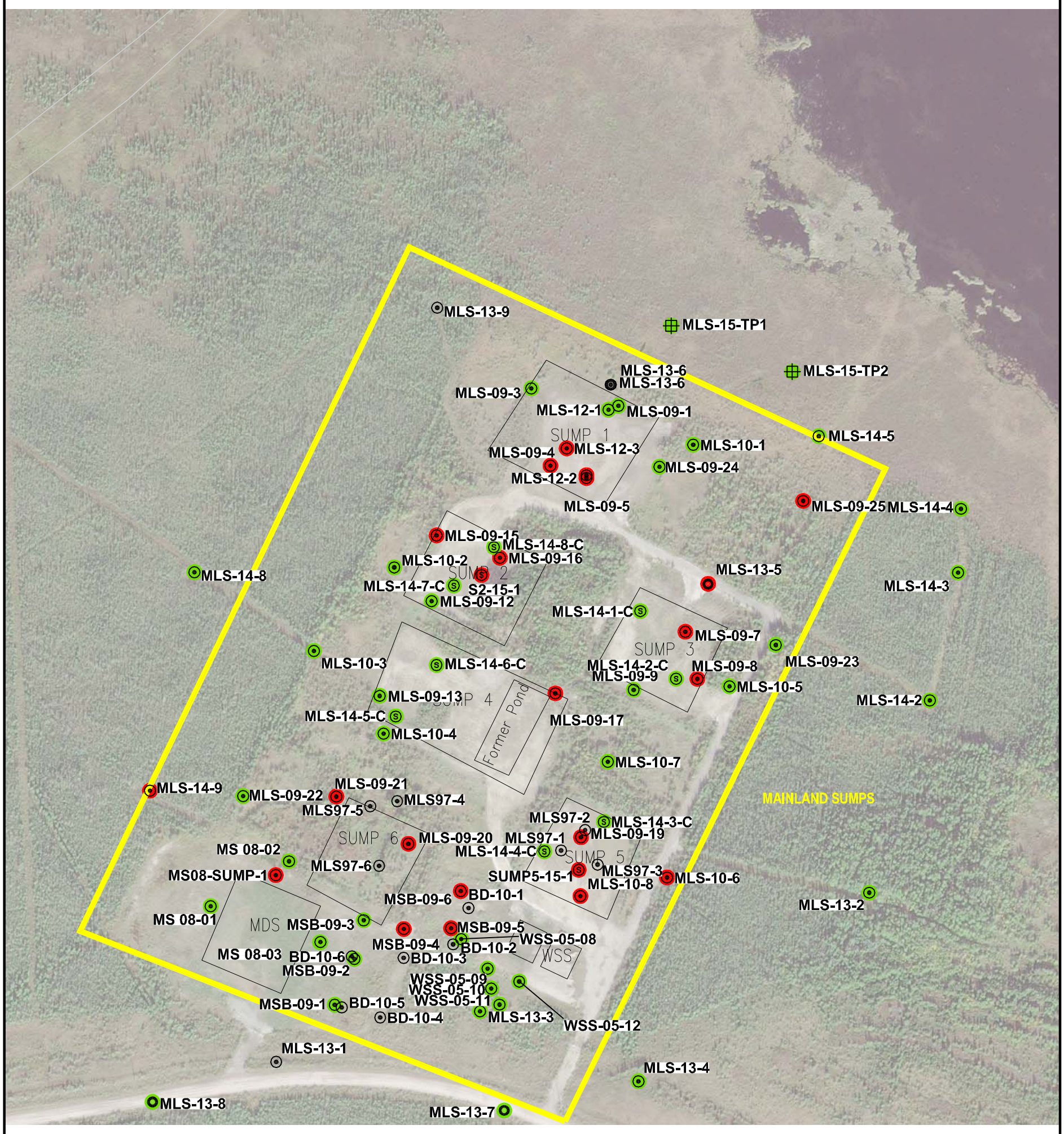
ISSUING OFFICE: CALGARY



LEGEND

- SOIL SAMPLING LOCATION
- SUMP CONTENT SAMPLING LOCATION
- TEST PIT LOCATION
- THERMISTOR LOCATION

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET THE APPLIED ASSESSMENT CRITERIA, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED THE APPLIED ASSESSMENT CRITERIA, SHOWN IN RED
- LOCATION NOT SAMPLED

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014.

m 0 50 100 150 m

1:3000

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.
4. MLS-14-2 AND MLS-14-8 ARE INTERPRETED TO REPRESENT BACKGROUND CONDITIONS.

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

SITE PLAN SHOWING
SOIL PETROLEUM HYDROCARBON ANALYTICAL RESULTS

Date:	Drawn by:	Edited by:	App'd by:
22-MAY-19	OTHERS	BMF	

Advisian
WorleyParsons Group

WorleyParsons Project No.
407011-00622-500

FIG No: 6C
REV: C

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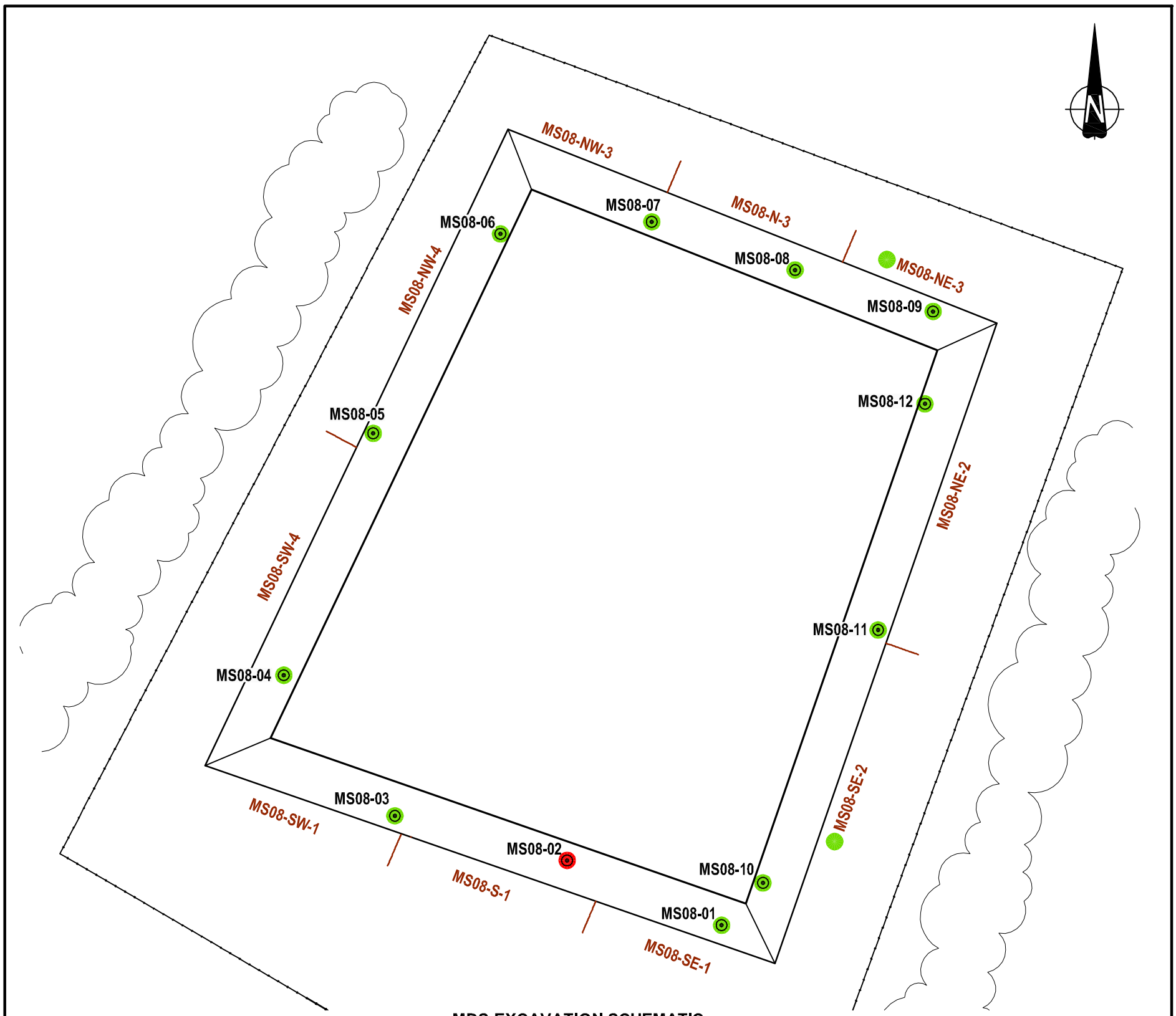
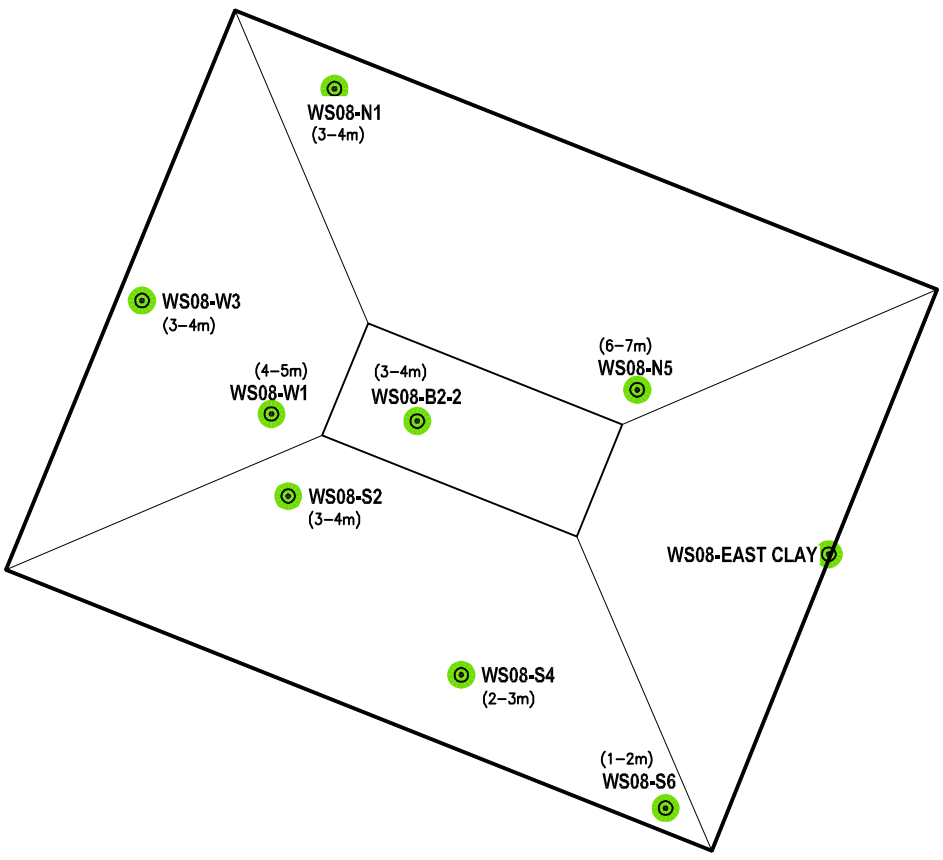
PLOT DATE & TIME: 22/5/2019 4:16:24 PM
SAVE DATE & TIME: 17/5/2019 2:32:29 PM
USER NAME: blairlink
ISSUING OFFICE: CALGARY

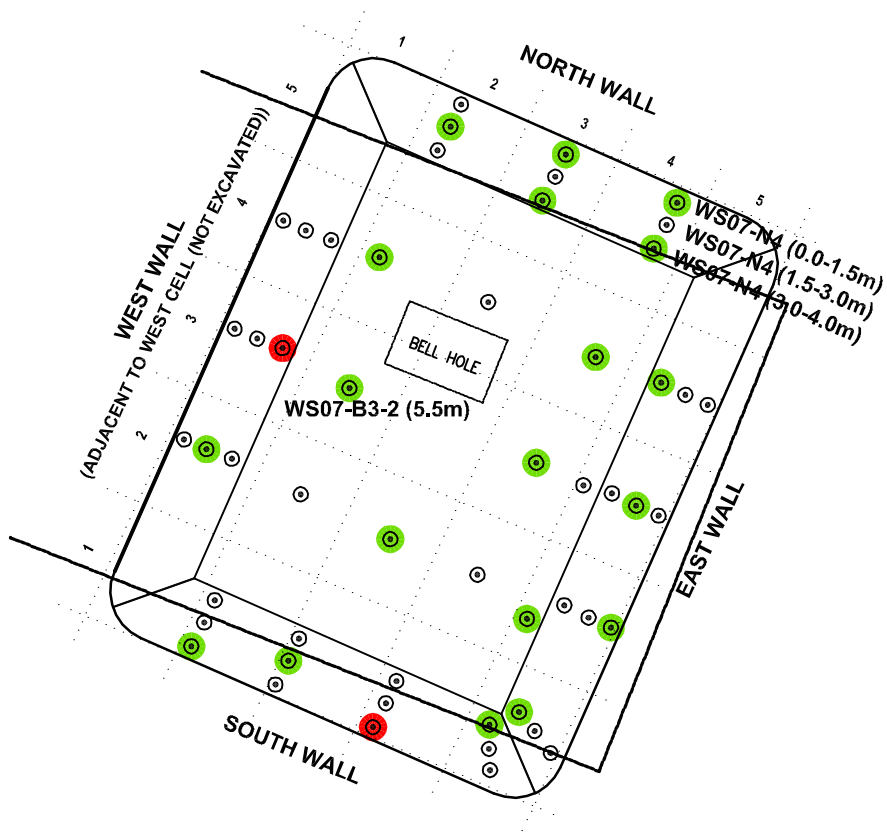
FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018_MAINLANDEAST_CSM.DWG



MDS EXCAVATION SCHEMATIC
SCALE: 1:500



WSS WEST CELL EXCAVATION SCHEMATIC
SCALE: 1:250



WSS EAST CELL EXCAVATION SCHEMATIC
SCALE: 1:300

LEGEND

⊙ SOIL SAMPLING LOCATION

ANALYTICAL RESULTS

◉ LOCATION WHERE ALL SOIL SAMPLES MET APPLIED ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.

◉ LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIAFOR AT LEAST ONE PARAMETER THAT WAS ANALYZED, SHOWN IN RED

⊙ LOCATION NOT SAMPLED

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

HISTORICAL EXCAVATION SITE PLANS SHOWING SOIL PETROLEUM HYDROCARBON ANALYTICAL RESULTS

Date:	Drawn by:	Edited by:	App'd by:
22-MAY-19	OTHERS	BMF	

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WorleyParsons Project No.
407011-00622-500

FIG No: 6D
REV: B

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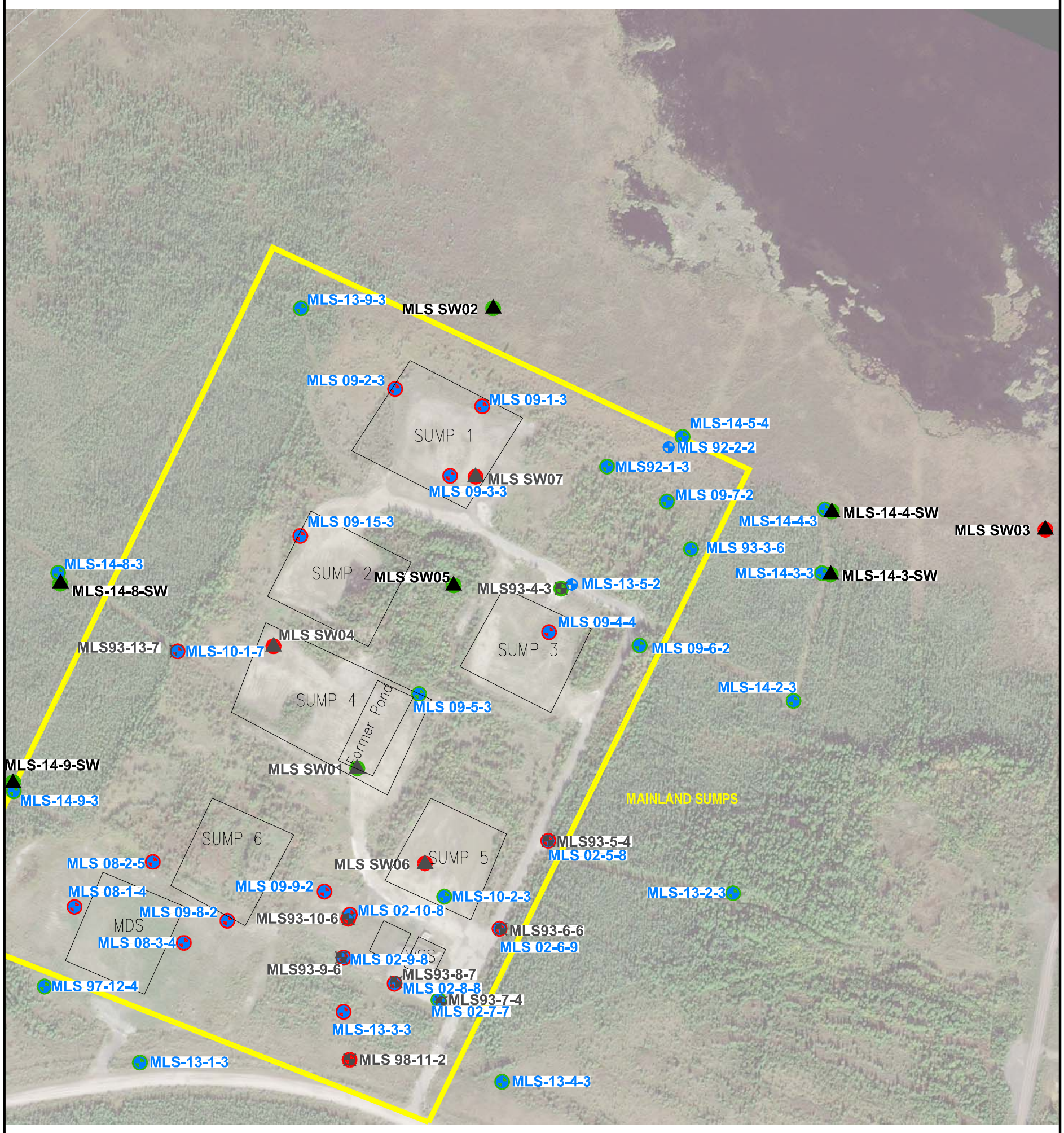
PLOT DATE & TIME: 22/5/2019 3:48:23 PM
SAVE DATE & TIME: 7/5/2019 4:09:07 PM
USER NAME: blairlink
ISSUING OFFICE: CALGARY

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-MLS_HISTORICALEXCAVATIONS.DWG



LEGEND

- MONITORING WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- SURFACE WATER SAMPLE LOCATION
- FORMER SURFACE WATER SAMPLE LOCATION (BACKFILLED)

ANALYTICAL RESULTS

- LOCATION WHERE GROUNDWATER SAMPLE MET THE APPLIED ASSESSMENT CRITERIA DURING MOST RECENT SAMPLING EVENT, SHOWN IN GREEN.
- LOCATION WHERE GROUNDWATER SAMPLE EXCEEDED THE APPLIED ASSESSMENT CRITERIA DURING MOST RECENT SAMPLING EVENT, SHOWN IN RED
- DISSOLVED CHLORIDE DATA NOT AVAILABLE

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014.

m 0 50 100 150 m

1:3000

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

SITE PLAN SHOWING GROUNDWATER AND SURFACE WATER CHLORIDE ANALYTICAL RESULTS

Date:	Drawn by:	Edited by:	App'd by:
29-MAY-19	OTHERS	BMF	

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FIG No 7 | REV D

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SAVE DATE & TIME: 22/5/2019 4:17:10 PM
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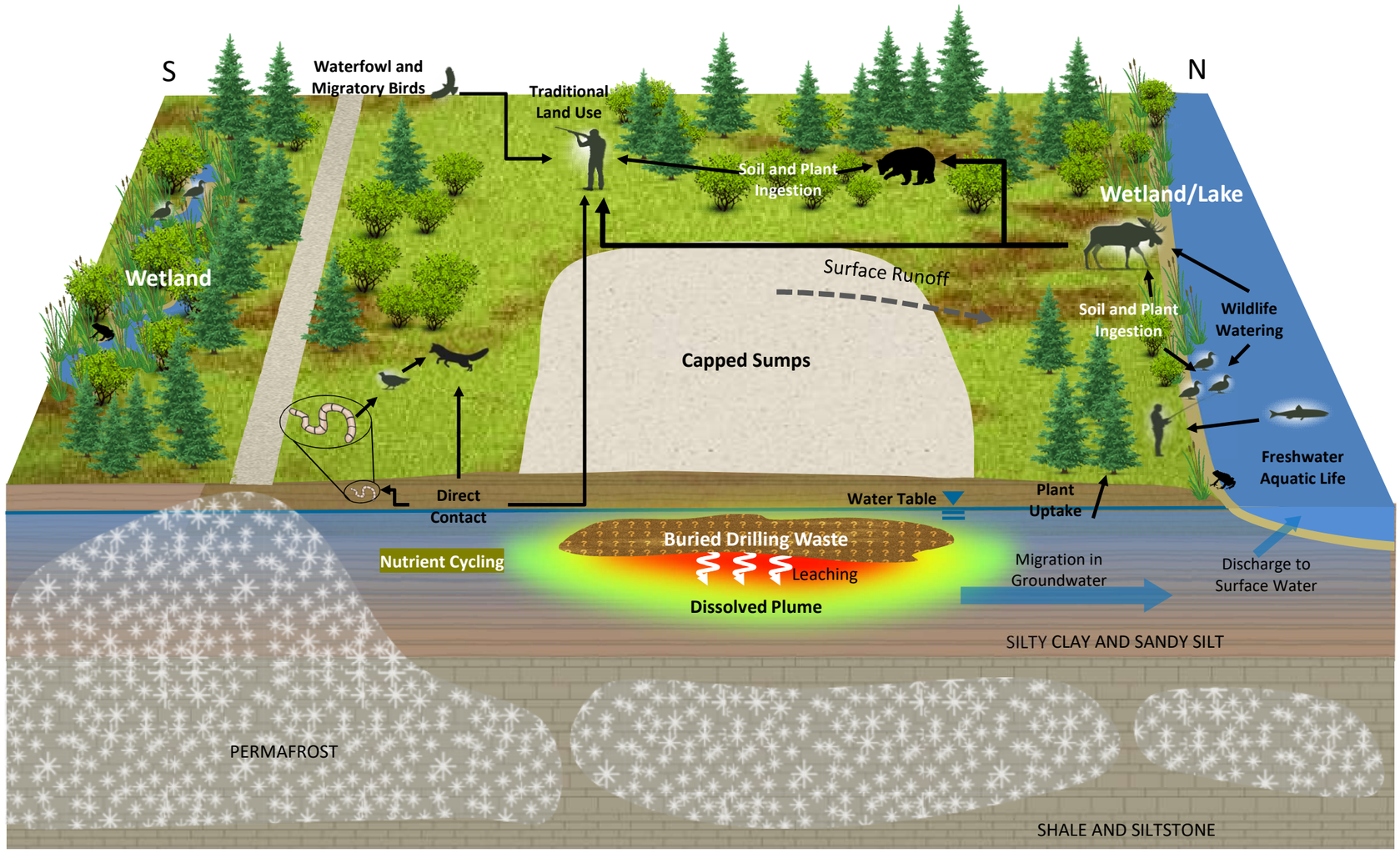
ISSUING OFFICE: CALGARY

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018_MAINLANDEAST_CSM.DWG



Health Canada, 2015. Conceptual Site Model Builder, Version 1.0. Developed by eSolutions Group Ltd. 2015.

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

CONCEPTUAL SITE MODEL

OneWay™ to zero harm

Date:	Drawn by:	Edited by:	App'd by:
10-May-19	RR	RR	

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WorleyParsons Project No.
407011-00622-500

FIG No. 8 | REV A

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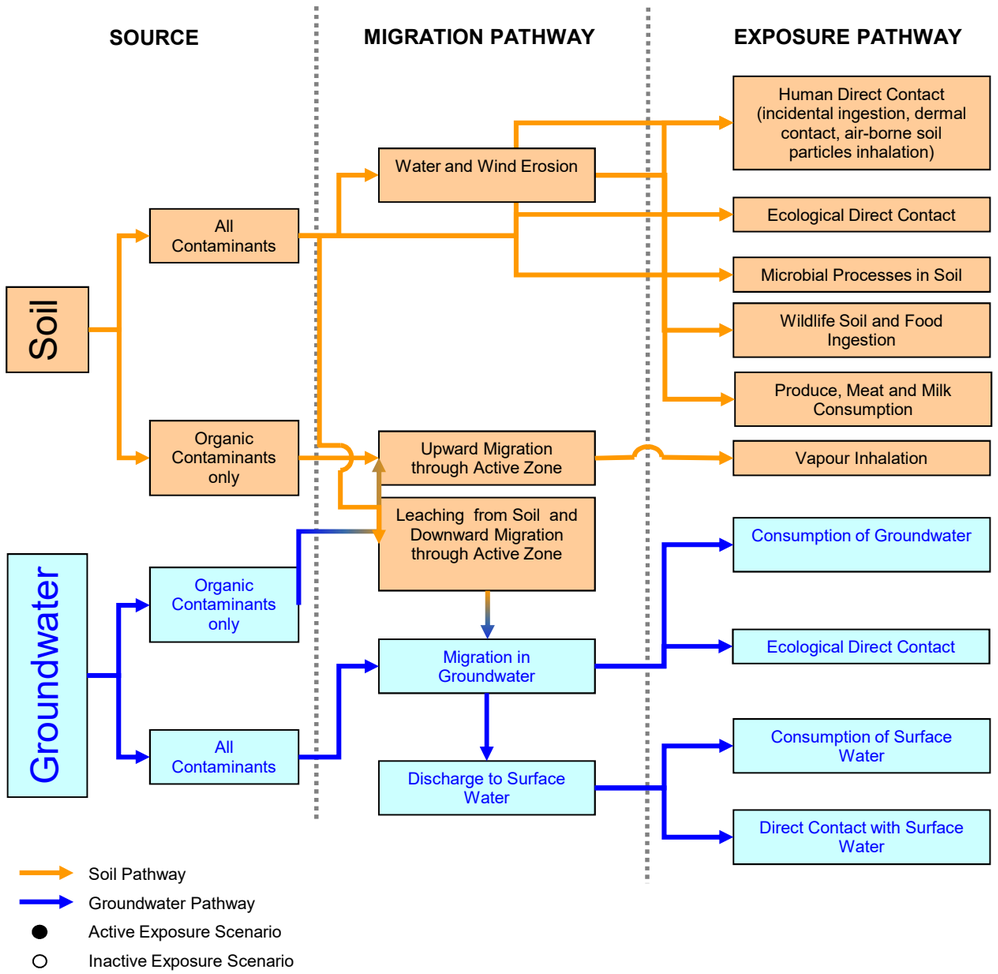
Mainland Sumps - Conceptual Exposure Model Flow Chart (Current Land Use and Site Conditions)



RECEPTORS			
Humans	Wildlife	Plant and Soil Invertebrates	Freshwater Aquatic Life
●			
		●	
		●	
	●		
●[1]			
○			
		●	
○	●		
			●

Notes: 1) Although the current land use is industrial, it is recognized that due to the size of the site and the geographical features of the area (i.e. river, creek, etc.) animals may move on and off of the site, and hunters are able to hunt in close proximity to the site. As such, meat consumption through hunting should be considered as an active exposure pathway.

IMPERIAL
CONCEPTUAL SITE MODEL
MAINLAND SUMPS, NORMAN WELLS, NT

CONCEPTUAL EXPOSURE MODEL
CURRENT LAND USE AND SITE CONDITIONS

OneWay™ to zero harm

Date: 10-May-19 | Drawn by: AH | Edited by: RR | App'd by:

Advision
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WorleyParsons Project No.
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FIG No. 9 | REV A

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Tables

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500				Salinity				Total Metals																		
Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Soluble Chloride (mg/L)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				4	12	(6 - 8)	---	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
CCME Industrial Fine Sub-Surface				4	12	(6 - 8)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-1				1.13	1.38	7.52	---	2	9.05	471	0.83	1.01	51	0.15	10.7	22.7	12	0.13	17.2	33.8	1.62	---	1.26	---	4.2	45.7	90.2
S-CAT-2				0.71	1.65	7.49	---	1	12.6	397	0.84	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				1.91	5.68	8.04	---	1	25.2	398	1.06	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				1.52	22.85	7.67	---	1	23.8	454	0.93	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
MS97-1	09-Aug-1997	2.3 - 3.3m	**S-CAT-3**	0.861	3.5	---	33.9	---	22.6	336	1.0	< 0.2	35.9	< 0.25	19.3	36.7	28	0.16	< 0.4	61.0	0.4	---	**< 2**	---	---	42.2	147
MS97-2	09-Aug-1997	2.3 - 3.0m	**S-CAT-3**	1.03	11.2	---	53.8	---	15.1	281	0.8	< 0.2	29.4	< 0.25	15.9	28.7	18	0.50	< 0.4	47.4	0.4	---	**< 2**	---	---	35.9	129
MS97-3	09-Aug-1997	2.3 - 3.0m	**S-CAT-3**	1.54	14.1	---	103	---	19.5	299	1.1	< 0.2	36.9	< 0.25	19.9	36.2	21	0.66	< 0.4	62.6	0.3	---	**< 2**	---	---	43.7	155
MS97-5	09-Aug-1997	2.3 - 3.5m	**S-CAT-3**	1.63	19.3	---	290	---	18.7	233	0.9	< 0.2	35.5	< 0.25	20.1	33.6	17	0.51	< 0.4	60.2	0.3	---	**< 2**	---	---	42.8	152
MS97-6	09-Aug-1997	2.3 - 3.0m	**S-CAT-3**	0.786	10.2	---	64.0	---	21.5	576	1.0	< 0.2	39.3	< 0.25	20.8	34.6	29	0.26	< 0.4	65.5	0.3	---	**< 2**	---	---	48.0	164
WSS-05-08	30-Aug-2005	0.0 - 0.3m	**S-CAT-2**	7.89	8.1	---	2190	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Aug-2005	2.5 - 3.0m	**S-CAT-4**	1.68	15.5	---	379	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WSS-05-09	30-Aug-2005	1.0 - 1.5m	**S-CAT-3**	2.69	3.9	---	712	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Aug-2005	2.5 - 3.0m	**S-CAT-4**	0.762	7.4	---	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WSS-05-10	30-Aug-2005	1.0 - 1.5m	**S-CAT-3**	3.66	3.4	---	1150	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Aug-2005	2.0 - 2.5m	**S-CAT-4**	0.587	2.8	---	103	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WSS-05-11	30-Aug-2005	0.0 - 0.15m	**S-CAT-2**	3.05	4.1	---	805	---	2	343	0.3	0.5	12	< 0.3	3.9	15	< 10	< 0.05	1.0	18	< 0.5	---	< 1	---	---	23	42
	30-Aug-2005	2.0 - 2.5m	**S-CAT-4**	0.876	11.0	---	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WSS-05-12	30-Aug-2005	0.0 - 0.3m	**S-CAT-2**	5.83	7.4	---	1870	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Aug-2005	0.3 - 1.5m	**S-CAT-3**	1.96	4.0	---	529	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Aug-2005	2.5 - 3.0m	**S-CAT-4**	0.867	10.0	---	69	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-B2-3	08-Sep-2007	5.5m	**S-CAT-4**	4.53	14.0	---	1430	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-B3-4	08-Sep-2007	5.5m	**S-CAT-4**	3.09	8.6	---	915	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-B4 -2	08-Sep-2007	5.5m	**S-CAT-4**	4.9	5.4	---	1660	< 1	23	331	1.0	0.1	44	< 0.2	23	44	16	< 0.05	< 0.4	64	< 0.5	< 1	< 0.3	< 1	---	56	175
WS07-B4-4	08-Sep-2007	5.5m	**S-CAT-4**	1.8	8.9	---	501	< 1	20	282	0.9	0.1	41	< 0.2	21	50	16	< 0.05	< 0.4	60	< 0.5	< 1	< 0.3	< 1	---	52	158
WS07-N2	08-Sep-2007	1.5 - 3.0m	**S-CAT-3**	1.55	3.3	---	426	< 1	27	365	0.7	0.1	40	< 0.2	20	41	17	0.05	0.5	57	< 0.5	< 1	< 0.3	< 1	---	55	169
WS07-N4	08-Sep-2007	0.0 - 1.5m	**S-CAT-3**	2.69	2.0	---	709	< 1	10	592	< 0.4	0.5	22	< 0.2	10	23	11	< 0.05	2.9	33	0.8	< 1	< 0.3	< 1	---	32	93
	26-Sep-2007	3.0 - 4.0m	**S-CAT-3**	0.97	8.7	7.7	209	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-W2	10-Sep-2007	1.5 - 3.0m	**S-CAT-3**	14.2	1.8	---	5230	< 1	17	621	0.8	0.1	33	< 0.2	18	39	17	0.05	< 0.4	54	< 0.5	< 1	< 0.3	< 1	---	41	155
WS07-W3	10-Sep-2007	3.0 - 4.0m	**S-CAT-3**	4.58	4.5	---	1540	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-E1	27-Sep-2007	3.0 - 4.0m	**S-CAT-3**	3.1	6.5	7.41	1,070	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-E2	27-Sep-2007	0.0 - 1.5m	**S-CAT-3**	2.9	1.1	7.31	240	---	10	1,170	<0.4	0.7	18	<0.2	9	26	14	<0.05	7.6	35	1.2	---	0.6	---	---	32	98
WS07-E3	27-Sep-2007	1.5 - 3.0m	**S-CAT-3**	1.53	4.6	7.6	432	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-E4	27-Sep-2007	3.0 - 4.0m	**S-CAT-3**	1.15	4.2	7.54	284	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-S2	26-Sep-2007	0.0 - 1.5m	**S-CAT-3**	5.47	2.6	7.02	1,920	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-S3	27-Sep-2007	1.5 - 3.0m	**S-CAT-3**	3.89	5.1	7.15	1,420	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500				Salinity				Total Metals																		
Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Soluble Chloride (mg/L)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				4	12	(6 - 8)	---	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
CCME Industrial Fine Sub-Surface				4	12	(6 - 8)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-1				1.13	1.38	7.52	---	2	9.05	471	0.83	1.01	51	0.15	10.7	22.7	12	0.13	17.2	33.8	1.62	---	1.26	---	4.2	45.7	90.2
S-CAT-2				0.71	1.65	7.49	---	1	12.6	397	0.84	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				1.91	5.68	8.04	---	1	25.2	398	1.06	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				1.52	22.85	7.67	---	1	23.8	454	0.93	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
WS07-S4	26-Sep-2007	0.0 - 1.5m	**S-CAT-3**	1.34	4.9	7.38	252	---	8	531	0.5	0.6	18	<0.2	10	26	11	<0.05	1.9	29	<0.5	---	<0.3	---	---	26	100
WS07-S5	27-Sep-2007	3.0 - 4.0m	**S-CAT-3**	3.8	5.5	7.36	1,210	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS-08-01	29-Jul-2008	0.0 - 0.3m	**S-CAT-2**	1.3	14	---	110	< 1	25	290	0.5	0.2	38	< 0.15	19	37	14	0.07	0.9	56	< 0.5	< 1	< 0.3	< 1	---	44	160
	29-Jul-2008	1.8 - 2.1m	**S-CAT-3**	1	7.8	---	79	< 1	26	320	0.6	0.2	43	< 0.15	23	42	17	0.09	0.6	68	< 0.5	< 1	< 0.3	< 1	---	48	180
MS-08-02	29-Jul-2008	0.0 - 0.3m	**S-CAT-2**	1	6.1	---	51	< 1	18	330	0.5	0.4	27	< 0.15	15	33	14	0.07	1.6	46	0.7	< 1	< 0.3	< 1	---	39	140
	29-Jul-2008	1.8 - 2.1m	**S-CAT-3**	1.5	6.9	---	270	< 1	22	230	< 0.4	0.3	27	< 0.15	13	27	12	0.08	1.4	40	< 0.5	< 1	< 0.3	< 1	---	35	120
MS-08-03	29-Jul-2008	0.0 - 0.3m	**S-CAT-2**	0.78	4.0	---	36	< 1	20	350	0.5	0.5	30	< 0.15	16	33	14	0.06	1.4	49	0.6	< 1	< 0.3	< 1	---	41	140
MS08-01	10-Jul-2008		**S-CAT-3**	1.4	1.4	---	43	< 1	15	180	0.5	0.1	24	< 0.15	12	20	8	< 0.05	0.5	34	< 0.5	< 1	< 0.3	< 1	---	29	95
MS08-02	10-Jul-2008		**S-CAT-3**	3.2	1.8	---	23	< 1	17	300	0.7	0.3	25	< 0.15	12	23	23	0.08	2.4	40	0.8	< 1	< 0.3	< 1	---	34	130
MS08-03	10-Jul-2008		**S-CAT-3**	3.3	3.3	---	35	< 1	8	380	< 0.4	0.5	20	< 0.15	8	25	31	< 0.05	3.9	29	0.6	< 1	< 0.3	< 1	---	25	99
MS08-04	10-Jul-2008		**S-CAT-3**	2.3	1.0	---	7	< 1	13	230	0.5	0.5	23	< 0.15	11	21	9	< 0.05	1.2	34	< 0.5	< 1	< 0.3	< 1	---	33	90
MS08-05	10-Jul-2008		**S-CAT-3**	1.2	1.0	---	11	< 1	22	240	1.0	< 0.1	41	< 0.15	22	44	14	0.07	< 0.4	64	< 0.5	< 1	< 0.3	< 1	---	48	170
MS08-06	10-Jul-2008		**S-CAT-3**	1.5	11	---	160	< 1	19	310	1.1	0.2	40	< 0.15	22	51	18	0.10	1.1	66	0.5	< 1	< 0.3	< 1	---	49	180
MS08-07	10-Jul-2008		**S-CAT-3**	0.56	3.0	---	35	< 1	14	510	1.0	0.1	40	< 0.15	22	54	19	0.11	1.4	66	0.6	< 1	< 0.3	< 1	---	47	200
MS08-08	10-Jul-2008		**S-CAT-3**	1.3	13	---	150	< 1	18	320	0.8	0.1	34	< 0.15	19	46	16	0.10	1.1	57	< 0.5	< 1	< 0.3	< 1	---	41	170
MS08-09	10-Jul-2008		**S-CAT-3**	0.8	4.4	---	88	< 1	13	310	0.7	0.1	29	< 0.15	16	36	13	0.11	0.8	47	< 0.5	< 1	< 0.3	< 1	---	35	140
MS08-10	10-Jul-2008		**S-CAT-3**	2	3.2	---	76	< 1	12	160	< 0.4	0.3	20	< 0.15	9	15	7	< 0.05	1.2	29	< 0.5	< 1	< 0.3	< 1	---	27	72
MS08-11	10-Jul-2008		**S-CAT-3**	7.9	15	---	34	< 1	19	230	0.5	0.2	29	< 0.15	12	24	9	0.07	1.1	38	0.7	< 1	< 0.3	< 1	---	30	94
MS08-12	10-Jul-2008		**S-CAT-3**	2.1	32	---	190	< 1	17	150	0.6	< 0.1	29	< 0.15	16	28	10	0.06	< 0.4	47	< 0.5	< 1	< 0.3	< 1	---	33	130
MS08-N-3	19-Jul-2008		**S-CAT-2**	1.7	4.4	---	280	< 1	14	290	0.5	0.2	25	< 0.15	13	30	11	0.08	1.3	40	< 0.5	< 1	< 0.3	< 1	---	35	120
MS08-NE-2	18-Jul-2008		**S-CAT-2**	3.9	16	---	73	< 1	22	300	0.5	0.2	31	< 0.15	16	35	13	0.07	1.3	49	< 0.5	< 1	< 0.3	< 1	---	42	130
MS08-NE-3	19-Jul-2008		**S-CAT-2**	2.4	5.1	---	560	< 1	9	270	< 0.4	0.4	16	< 0.15	7	16	8	< 0.05	1.1	24	< 0.5	< 1	< 0.3	< 1	---	23	65
MS08-NW-3	19-Jul-2008		**S-CAT-2**	3.3	10	---	510	< 1	15	280	0.5	0.2	27	< 0.15	14	33	12	0.09	1.0	44	< 0.5	< 1	< 0.3	< 1	---	35	130
MS08-NW-4	19-Jul-2008		**S-CAT-2**	7	17	---	430	< 1	18	450	0.6	0.2	31	< 0.15	17	37	13	0.10	1.2	51	< 0.5	< 1	< 0.3	< 1	---	38	150
MS08-S-1	18-Jul-2008		**S-CAT-2**	3.5	1.5	---	17	< 1	14	2300	0.4	0.2	27	< 0.15	12	25	20	< 0.05	2.7	39	< 0.5	< 1	< 0.3	< 1	---	36	110
MS08-SE-1	18-Jul-2008		**S-CAT-2**	3.2	1.0	---	17	< 1	11	700	< 0.4	0.3	16	< 0.15	7	14	10	< 0.05	1.5	24	< 0.5	< 1	< 0.3	< 1	---	24	64
MS08-SE-2	18-Jul-2008		**S-CAT-2**	2.3	2.0	---	14	< 1	18	220	0.5	0.2	30	< 0.15	14	27	15	0.05	0.8	44	< 0.5	< 1	< 0.3	< 1	---	40	120
MS08-SUMP-1	28-Jul-2008		**S-CAT-2**	5.6	61	---	1400	< 1	9	1700	0.7	0.6	24	< 0.15	13	50	14	0.05	4.2	53	1.0	< 1	< 0.3	< 1	---	25	95
MS08-SW-1	18-Jul-2008		**S-CAT-2**	2.9	0.7	---	8	< 1	18	800	0.4	0.4	29	< 0.15	13	27	11	0.06	6.3	46	0.8	< 1	< 0.3	< 1	---	44	120
MS08-SW-4	19-Jul-2008		**S-CAT-2**	4.2	3.6	---	88	< 1	23	1700	0.6	0.3	36	< 0.15	17	41	20	0.09	4.5	56	0.5	< 1	< 0.3	< 1	---	46	170

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500				Salinity				Total Metals																		
Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Soluble Chloride (mg/L)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				4	12	(6 - 8)	---	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
CCME Industrial Fine Sub-Surface				4	12	(6 - 8)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-1				1.13	1.38	7.52	---	2	9.05	471	0.83	1.01	51	0.15	10.7	22.7	12	0.13	17.2	33.8	1.62	---	1.26	---	4.2	45.7	90.2
S-CAT-2				0.71	1.65	7.49	---	1	12.6	397	0.84	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				1.91	5.68	8.04	---	1	25.2	398	1.06	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				1.52	22.85	7.67	---	1	23.8	454	0.93	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
WS08-B2-2	16-Sep-2008	3.0 - 4.0m	**S-CAT-3**	4.2	20	---	1200	< 1	39	600	0.9	0.2	45	< 0.15	23	50	14	0.05	1.2	66	< 0.5	< 1	< 0.3	< 1	---	53	160
WS08-EAST CLAY	11-Aug-2008		**S-CAT-2**	1.9	3.7	---	530	< 1	15	380	0.5	0.2	22	< 0.15	10	23	9	0.06	0.7	33	< 0.5	< 1	< 0.3	< 1	---	29	86
WS08-N1	14-Sep-2008	3.0 - 4.0m	**S-CAT-3**	2.5	2.6	---	470	< 1	20	240	0.8	< 0.1	39	< 0.15	18	39	12	0.05	2.1	58	< 0.5	< 1	< 0.3	< 1	---	47	150
WS08-S2	14-Sep-2008	3.0 - 4.0m	**S-CAT-3**	3.7	4.6	---	1100	< 1	12	250	0.5	0.3	34	< 0.15	11	25	10	0.06	1.9	41	< 0.5	< 1	< 0.3	< 1	---	33	100
WS08-W3	14-Sep-2008	3.0 - 4.0m	**S-CAT-3**	3.4	4.2	---	970	< 1	22	230	0.7	< 0.1	39	< 0.15	19	39	12	< 0.05	0.4	58	< 0.5	< 1	< 0.3	< 1	---	48	150
MLS-09-1	28-Jul-2009	0.1 - 0.4m	**S-CAT-2**	3.2	4.7	---	670	< 1	12	270	0.5	0.2	26	< 0.15	14	32	12	0.08	1.5	40	< 0.5	< 1	< 0.3	< 1	< 1	34	100
	28-Jul-2009	1.0 - 1.3m	**S-CAT-3**	3	3.1	---	790	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-3	28-Jul-2009	0.1 - 0.4m	**S-CAT-2**	1.1	3.8	---	200	< 1	9	250	0.4	0.4	22	< 0.15	9	20	9	0.06	1.9	28	0.6	< 1	< 0.3	< 1	1	27	75
	28-Jul-2009	1.0 - 1.3m	**S-CAT-3**	0.79	4.4	---	120	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-5	27-Jul-2009	0.1 - 0.4m	**S-CAT-2**	2.9	8.5	---	430	< 1	9	420	< 0.4	0.3	16	< 0.15	8	19	10	0.20	1.4	26	0.5	< 1	< 0.3	< 1	< 1	22	78
	27-Jul-2009	0.9 - 1.2m	**S-CAT-3**	1.3	10	---	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Jul-2009	2.4 - 2.7m	**S-CAT-3**	2.6	7.2	---	380	2	15	1100	0.5	0.9	25	< 0.15	12	38	560	0.26	6.6	45	1.5	< 1	1.0	< 1	2	31	310
MLS-09-7	28-Jul-2009	0.0 - 0.4m	**S-CAT-2**	5.2	2.1	---	1300	< 1	15	310	1.4	3.8	19	< 0.15	40	91	12	0.08	8.7	230	7.9	< 1	0.5	< 1	9	34	600
	28-Jul-2009	1.3 - 1.5m	**S-CAT-3**	6.2	5.5	---	1800	< 1	14	270	0.5	0.2	28	< 0.15	15	29	13	0.05	1.6	44	0.5	< 1	< 0.3	< 1	< 1	38	120
	28-Jul-2009	4.0 - 4.3m	**S-CAT-3**	4.9	26	---	1400	< 1	11	350	0.6	0.2	30	< 0.15	15	33	26	0.06	2.2	48	0.6	< 1	0.4	< 1	1	36	220
MLS-09-8	28-Jul-2009	0.8 - 1.1m	**S-CAT-3**	4.2	3.5	---	950	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-9	28-Jul-2009	1.1 - 1.4m	**S-CAT-3**	2.3	16	---	350	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-12	31-Jul-2009	0.3 - 0.7m	**S-CAT-3**	2.6	7.1	---	530	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-13	31-Jul-2009	0.0 - 0.5m	**S-CAT-2**	2.6	3.8	---	420	< 1	16	300	1.1	4.2	20	< 0.15	44	90	11	0.10	11	250	9.7	< 1	0.6	< 1	8	35	650
MLS-09-15	31-Jul-2009	0.0 - 0.5m	**S-CAT-2**	0.39	1.6	---	14	< 1	14	270	0.7	1.2	33	< 0.15	22	41	13	0.08	2.1	94	1.8	< 1	< 0.3	< 1	2	41	220
	31-Jul-2009	1.3 - 1.5m	**S-CAT-3**	1.5	4.2	---	280	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-16	31-Jul-2009	0.0 - 0.5m	**S-CAT-2**	0.39	2.9	---	8	< 1	16	320	0.7	0.1	37	< 0.15	18	37	14	0.08	0.7	55	< 0.5	< 1	< 0.3	< 1	< 1	44	130
	31-Jul-2009	1.2 - 1.5m	**S-CAT-3**	2.6	4.9	---	570	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2009	3.0 - 3.3m	**S-CAT-3**	1.5	29	---	280	< 1	13	1800	0.6	0.2	35	< 0.15	15	33	31	0.09	1.6	48	< 0.5	< 1	< 0.3	< 1	< 1	41	160
MLS-09-17	29-Jul-2009	0.0 - 0.3m	**S-CAT-2**	0.33	1.4	---	7	< 1	21	270	0.6	< 0.1	36	< 0.15	19	35	13	< 0.05	< 0.4	54	< 0.5	< 1	< 0.3	< 1	< 1	46	130
MLS-09-19	29-Jul-2009	0.0 - 0.6m	**S-CAT-2**	2	6.7	---	130	< 1	12	330	0.6	0.4	24	< 0.15	12	24	12	< 0.05	1.4	35	1.0	< 1	< 0.3	< 1	1	36	97
	29-Jul-2009	2.7 - 3.0m	**S-CAT-3**	1.2	17	---	96	< 1	20	320	0.7	< 0.1	36	< 0.15	19	36	14	< 0.05	< 0.4	56	< 0.5	< 1	< 0.3	< 1	< 1	42	140
MLS-09-20	01-Aug-2009	0.0 - 0.3m	**S-CAT-2**	0.35	0.2	---	7	< 1	5	160	0.6	0.2	43	< 0.15	8	67	10	0.07	1.3	32	1.6	< 1	< 0.3	2	6	32	47
MLS-09-21	31-Jul-2009	0.0 - 0.5m	**S-CAT-2**	0.54	1.8	---	55	< 1	12	300	0.5	0.4	19	< 0.15	10	23	11	0.19	2.6	31	0.6	< 1	< 0.3	< 1	1	29	88
	31-Jul-2009	2.0 - 2.7m	**S-CAT-3**	3.1	12	---	530	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-22	01-Aug-2009	0.0 - 0.4m	**S-CAT-2**	0.64	2.0	---	130	< 1	11	300	0.5	0.4	22	< 0.15	11	20	11	0.09	1.7	33	< 0.5	< 1	< 0.3	< 1	< 1	33	85
MLS-09-25	29-Jul-2009	0.0 - 0.2m	**S-CAT-2**	1.2	3.4	---	130	< 1	11	310	0.6	0.4	29	< 0.15	11	20	12	< 0.05	1.8	34	0.6	< 1	< 0.3	< 1	< 1	35	87
	29-Jul-2009	0.8 - 1.1m	**S-CAT-3**	1.1	3.5	---	120	< 1	15	240	0.5	0.3	28	< 0.15	10	22	11	< 0.05	2.1	34	< 0.5	< 1	< 0.3	< 1	< 1	29	88

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500				Salinity				Total Metals																		
Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Soluble Chloride (mg/L)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				4	12	(6 - 8)	---	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
CCME Industrial Fine Sub-Surface				4	12	(6 - 8)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-1				1.13	1.38	7.52	---	2	9.05	471	0.83	1.01	51	0.15	10.7	22.7	12	0.13	17.2	33.8	1.62	---	1.26	---	4.2	45.7	90.2
S-CAT-2				0.71	1.65	7.49	---	1	12.6	397	0.84	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				1.91	5.68	8.04	---	1	25.2	398	1.06	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				1.52	22.85	7.67	---	1	23.8	454	0.93	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
MSB-09-1	30-Jul-2009	0.1 - 0.4m	**S-CAT-2**	0.29	0.2	---	6	< 1	6	330	0.6	0.9	19	< 0.15	8	21	10	0.09	1.1	27	1.1	< 1	< 0.3	< 1	2	33	79
MSB-09-2	30-Jul-2009	0.4 - 0.8m	**S-CAT-3**	0.31	0.5	---	10	< 1	10	310	0.5	0.5	21	< 0.15	11	22	12	0.08	1.8	31	0.6	< 1	< 0.3	< 1	< 1	34	90
MSB-09-3	30-Jul-2009	0.0 - 0.4m	**S-CAT-2**	0.79	2.1	---	160	< 1	10	360	0.5	0.5	20	< 0.15	10	22	11	0.08	2.0	30	0.6	< 1	< 0.3	< 1	1	31	86
	30-Jul-2009	0.7 - 1.2m	**S-CAT-3**	0.86	1.4	---	180	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MSB-09-4	30-Jul-2009	0.0 - 0.5m	**S-CAT-2**	1.8	4.5	---	240	< 1	9	540	< 0.4	0.5	23	< 0.15	8	20	44	0.12	8.1	31	0.8	< 1	0.5	< 1	2	24	160
	30-Jul-2009	0.8 - 1.2m	**S-CAT-3**	2.6	5.3	---	780	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MSB-09-5	30-Jul-2009	0.6 - 1.2m	**S-CAT-3**	0.99	3.3	---	200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MSB-09-6	30-Jul-2009	0.0 - 0.3m	**S-CAT-2**	1.5	2.8	---	210	< 1	12	310	0.5	0.4	23	< 0.15	12	23	11	0.14	1.8	35	0.6	< 1	< 0.3	< 1	1	35	94
MLS-10-01	30-Jul-2010	0.6 - 1.5m	**S-CAT-3**	0.91	2.3	---	150	< 1	14	240	< 0.4	0.3	32	< 0.15	11	25	11	0.06	3.3	40	< 0.5	< 1	0.4	< 1	1	34	87
	30-Jul-2010	2.0 - 2.3m	**S-CAT-3**	0.82	7.5	---	95	< 1	16	310	0.5	0.2	31	< 0.15	15	30	13	< 0.05	2.3	45	0.5	< 1	0.3	< 1	< 1	40	100
MLS-10-02	30-Jul-2010	1.0 - 1.5m	**S-CAT-3**	3	4.3	---	780	< 1	10	280	< 0.4	0.3	24	< 0.15	9	20	10	< 0.05	1.7	29	< 0.5	< 1	< 0.3	< 1	< 1	36	75
MLS-10-03	30-Jul-2010	0.3 - 0.5m	**S-CAT-2**	0.53	2.0	---	42	< 1	9	310	< 0.4	0.4	22	< 0.15	10	19	11	< 0.05	1.9	30	< 0.5	< 1	< 0.3	< 1	1	33	73
	30-Jul-2010	4.0 - 4.5m	**S-CAT-4**	1.1	33	---	54	< 1	22	300	0.7	0.7	41	< 0.15	20	42	20	1.4	0.4	59	< 0.5	< 1	< 0.3	< 1	< 1	58	790
MLS-10-04	31-Jul-2010	0.5 - 1.0m	**S-CAT-3**	1.7	2.1	---	120	< 1	13	320	0.5	0.4	29	< 0.15	13	26	13	0.08	1.9	38	0.6	< 1	< 0.3	< 1	1	48	100
	31-Jul-2010	3.9 - 4.2m	**S-CAT-4**	1	28	---	59	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-10-05	31-Jul-2010	1.0 - 1.5m	**S-CAT-3**	4.6	3.8	---	1400	< 1	11	380	0.5	0.4	25	< 0.15	12	25	13	0.06	2.7	36	< 0.5	< 1	< 0.3	< 1	< 1	43	90
MLS-10-06	31-Jul-2010	0.5 - 1.0m	**S-CAT-3**	0.44	2.7	---	48	< 1	20	320	0.6	0.1	41	< 0.15	20	37	15	0.05	1.3	59	< 0.5	< 1	< 0.3	< 1	< 1	56	130
	31-Jul-2010	1.7 - 2.0m	**S-CAT-4**	0.46	16	---	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-10-07	31-Jul-2010	0.9 - 1.5m	**S-CAT-3**	0.87	3.7	---	46	< 1	11	280	0.4	0.4	27	< 0.15	12	24	12	0.22	2.8	37	< 0.5	< 1	0.3	< 1	< 1	39	90
	31-Jul-2010	3.8 - 4.3m	**S-CAT-4**	1	26	---	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-10-08	31-Jul-2010	0.0 - 0.5m	**S-CAT-2**	2	12	---	160	< 1	15	370	0.5	0.2	32	< 0.15	16	34	14	0.07	2.6	50	0.6	< 1	0.4	< 1	< 1	46	110
	31-Jul-2010	1.5 - 2.0m	**S-CAT-4**	2	29	---	87	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-12-1	16-Jul-2012	0.5 - 1.0m	**S-CAT-3**	1.8	8.2	7.36	350	< 1.0	14	310	0.66	0.24	34	< 0.15	13	30	11	0.081	1.9	43	0.52	< 1.0	< 0.30	< 1.0	< 1.0	44	120
	16-Jul-2012	2.5 - 3.0m	**S-CAT-3**	1.5	10	7.48	400	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-12-2	16-Jul-2012	0.3 - 0.8m	**S-CAT-3**	3.9	6.6	7.15	730	< 1.0	11	450	0.68	0.36	30	< 0.15	12	26	12	< 0.050	2.5	38	0.92	< 1.0	< 0.30	< 1.0	1.4	44	100
	16-Jul-2012	3.2 - 3.7m	**S-CAT-4**	1.7	34	8.23	390	< 1.0	15	320	0.95	< 0.10	42	< 0.15	18	42	13	< 0.050	0.46	57	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	58	130
MLS-12-3	16-Jul-2012	1.5 - 2.0m	**S-CAT-3**	2.3	6.4	7.11	610	< 1.0	12	370	0.72	0.23	31	< 0.15	14	30	11	< 0.050	1.4	42	0.56	< 1.0	< 0.30	< 1.0	< 1.0	45	110
	16-Jul-2012	5.0 - 5.5m	**S-CAT-4**	2.2	52	8.53	520	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-13-1	19-Aug-2013	1.35 - 1.5m	**S-CAT-3**	0.57	0.52	7.14	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2013	2.0 - 2.15m	**S-CAT-3**	0.61	2.3	7.47	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2013	2.85 - 3.0m	**S-CAT-4**	0.74	10	7.41	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-13-3	23-Aug-2013	0.8 - 1.0m	**S-CAT-3**	0.57	2.7	7.14	140	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	1.3 - 1.5m	**S-CAT-3**	0.57	5.3	7.15	8.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	2.8 - 3.0m	**S-CAT-4**	0.92	25	7.77	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500				Salinity				Total Metals																		
Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Soluble Chloride (mg/L)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				4	12	(6 - 8)	---	40	12	2000	8	22	87	1.4	300	91	600	50	40	89	2.9	40	1	300	300	130	410
CCME Industrial Fine Sub-Surface				4	12	(6 - 8)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-1				1.13	1.38	7.52	---	2	9.05	471	0.83	1.01	51	0.15	10.7	22.7	12	0.13	17.2	33.8	1.62	---	1.26	---	4.2	45.7	90.2
S-CAT-2				0.71	1.65	7.49	---	1	12.6	397	0.84	0.89	29.8	0.15	14	26	13.2	0.08	2.6	41.6	0.89	---	0.3	---	1.5	46.1	142
S-CAT-3				1.91	5.68	8.04	---	1	25.2	398	1.06	0.89	35	0.18	18.9	37.8	18.4	0.11	5.58	60.4	1.28	---	0.7	---	2	48.6	148
S-CAT-4				1.52	22.85	7.67	---	1	23.8	454	0.93	0.12	41.8	0.15	21.8	50	14.8	0.11	0.74	63.2	0.5	---	0.3	---	1	62.2	148
MLS-13-4	23-Aug-2013	1.2 - 1.5m	**S-CAT-3**	0.21	1.7	7.33	5.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	2.0 - 2.2m	**S-CAT-4**	0.26	9.7	6.97	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	2.8 - 3.0m	**S-CAT-4**	1.1	7.5	7.22	58	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-13-5	23-Aug-2013	1.3 - 1.5m	**S-CAT-3**	1.3	3.1	7.42	240	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	2.0 - 2.2m	**S-CAT-3**	1.1	6.0	7.37	240	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	2.8 - 3.0m	**S-CAT-4**	0.44	18	7.98	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	3.5 - 3.7m	**S-CAT-4**	0.64	22	7.87	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	4.1 - 4.3m	**S-CAT-4**	0.58	17	8.22	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-13-6	25-Aug-2013	0.0 - 0.2m	**S-CAT-2**	2.5	5.3	7.60	540	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	0.5 - 0.7m	**S-CAT-3**	0.76	1.4	7.00	180	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	1.4 - 1.5m	**S-CAT-3**	0.95	3.3	7.31	200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	1.9 - 2.1m	**S-CAT-3**	0.82	3.6	7.34	140	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	2.8 - 3.0m	**S-CAT-3**	0.73	10	7.39	59	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-13-7	25-Aug-2013	1.3 - 1.5m	**S-CAT-3**	0.41	2.1	7.22	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	2.0 - 2.2m	**S-CAT-3**	0.55	9.9	7.29	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	2.8 - 3.0m	**S-CAT-4**	0.93	15	7.48	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-13-8	25-Aug-2013	0.5 - 0.7m	**S-CAT-1**	0.25	1.5	5.49	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	1.3 - 1.5m	**S-CAT-3**	0.67	0.57	6.94	66	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	2.8 - 3.0m	**S-CAT-3**	0.47	1.1	7.19	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-13-9	25-Aug-2013	0.2 - 0.4m	**S-CAT-1**	0.13	0.78	5.89	15	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	0.8 - 1.0m	**S-CAT-3**	0.19	0.97	6.95	9.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	1.3 - 1.5m	**S-CAT-3**	0.27	1.5	7.30	9.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	2.8 - 3.0m	**S-CAT-3**	0.84	17	7.37	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-14-1-C	15-Feb-2014	Surface	**S-CAT-2**	5.3	3.1	6.50	1400	1.2	14	270	1.2	2.7	14	< 0.15	35	65	11	0.093	11	200	3.1	< 1.0	0.76	< 1.0	7.2	34	520
MLS-14-2	27-Feb-2014	1.0m	**S-CAT-3**	0.15	1.0	7.36	< 5.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Feb-2014	2.0m	**S-CAT-3**	0.43	0.51	7.05	< 5.0	< 1.0	12	190	0.69	< 0.10	31	< 0.15	16	32	12	0.055	< 0.40	47	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	40	120
	27-Feb-2014	2.5m	**S-CAT-4**	1.7	0.53	7.52	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-14-2-C	11-Mar-2014	Surface	**S-CAT-2**	1.7	2.8	7.13	420	< 1.0	14	270	0.76	0.41	26	< 0.15	15	32	13	< 0.050	1.9	56	0.94	< 1.0	< 0.30	< 1.0	1.1	38	150
MLS-14-3	28-Feb-2014	1.0m	**S-CAT-3**	0.21	0.92	7.16	< 5.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Feb-2014	2.5m	**S-CAT-3**	0.53	9.2	7.25	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Feb-2014	3.0m	**S-CAT-3**	0.61	9.2	7.33	75	< 1.0	16	350	0.96	< 0.10	37	< 0.15	21	48	17	0.066	0.77	62	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	47	160
MLS-14-3-C	11-Mar-2014	Surface	**S-CAT-2**	1.1	8.5	6.77	280	< 1.0	14	300	0.70	0.24	26	< 0.15	14	29	13	< 0.050	1.4	42	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	38	110
MLS-14-4	28-Feb-2014	1.0m	**S-CAT-3**	0.24	1.3	6.93	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Feb-2014	2.0m	**S-CAT-3**	0.32	4.6	7.41	9.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Feb-2014	3.0m	**S-CAT-3**	0.48	11	7.24	21	< 1.0	10	500	0.87	0.12	31	< 0.15	17	38	14	0.057	0.81	51	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	40	130

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500				Salinity				Total Metals																		
Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Soluble Chloride (mg/L)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Industrial Fine Surface				**4**	**12**	**(6 - 8)**	**---**	**40**	**12**	**2000**	**8**	**22**	**87**	**1.4**	**300**	**91**	**600**	**50**	**40**	**89**	**2.9**	**40**	**1**	**300**	**300**	**130**	**410**
CCME Industrial Fine Sub-Surface				**4**	**12**	**(6 - 8)**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
S-CAT-1				**1.13**	**1.38**	**7.52**	**---**	**2**	**9.05**	**471**	**0.83**	**1.01**	**51**	**0.15**	**10.7**	**22.7**	**12**	**0.13**	**17.2**	**33.8**	**1.62**	**---**	**1.26**	**---**	**4.2**	**45.7**	**90.2**
S-CAT-2				**0.71**	**1.65**	**7.49**	**---**	**1**	**12.6**	**397**	**0.84**	**0.89**	**29.8**	**0.15**	**14**	**26**	**13.2**	**0.08**	**2.6**	**41.6**	**0.89**	**---**	**0.3**	**---**	**1.5**	**46.1**	**142**
S-CAT-3				**1.91**	**5.68**	**8.04**	**---**	**1**	**25.2**	**398**	**1.06**	**0.89**	**35**	**0.18**	**18.9**	**37.8**	**18.4**	**0.11**	**5.58**	**60.4**	**1.28**	**---**	**0.7**	**---**	**2**	**48.6**	**148**
S-CAT-4				**1.52**	**22.85**	**7.67**	**---**	**1**	**23.8**	**454**	**0.93**	**0.12**	**41.8**	**0.15**	**21.8**	**50**	**14.8**	**0.11**	**0.74**	**63.2**	**0.5**	**---**	**0.3**	**---**	**1**	**62.2**	**148**
MLS-14-4-C	11-Mar-2014	Surface	**S-CAT-2**	2.9	8.3	7.18	120	< 1.0	15	300	0.71	0.17	28	< 0.15	14	29	13	< 0.050	1.2	44	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	36	110
MLS-14-5	02-Mar-2014	1.0m	**S-CAT-3**	0.57	1.1	6.44	140	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02-Mar-2014	2.0m	**S-CAT-3**	0.32	1.8	7.35	55	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02-Mar-2014	3.0m	**S-CAT-3**	0.55	8.2	7.24	34	< 1.0	13	360	0.49	0.17	21	< 0.15	12	28	12	0.056	2.0	36	0.58	< 1.0	< 0.30	< 1.0	< 1.0	29	99
	02-Mar-2014	3.8m	**S-CAT-3**	0.96	21	8.18	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-14-5-C	12-Mar-2014	0.5m	**S-CAT-2**	2.3	3.0	6.93	420	1.5	17	350	1.5	4.8	18	< 0.15	46	90	11	0.069	15	260	15	< 1.0	0.59	< 1.0	10	38	680
MLS-14-6-C	12-Mar-2014	0.5m	**S-CAT-2**	2.0	2.3	7.02	360	1.3	13	290	1.2	3.0	30	< 0.15	38	75	9.7	0.079	12	210	9.2	< 1.0	0.76	< 1.0	9.5	34	500
MLS-14-7-C	12-Mar-2014	0.5m	**S-CAT-2**	1.8	4.3	6.79	420	1.3	15	300	1.4	3.7	16	< 0.15	42	98	9.9	0.069	11	270	9.6	< 1.0	0.67	< 1.0	14	37	660
MLS-14-8	03-Mar-2014	1.0m	**S-CAT-3**	0.27	0.97	7.42	7.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Mar-2014	2.0m	**S-CAT-3**	0.42	0.81	7.40	< 5.0	< 1.0	18	660	0.64	0.22	25	< 0.15	15	32	15	0.069	1.8	46	0.51	< 1.0	< 0.30	< 1.0	< 1.0	34	130
	03-Mar-2014	3.0m	**S-CAT-3**	0.28	1.3	7.60	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-14-8-C	12-Mar-2014	Surface	**S-CAT-2**	0.98	4.4	6.41	180	< 1.0	9.9	300	0.63	0.93	18	< 0.15	12	28	10	0.050	7.2	55	1.8	< 1.0	0.64	< 1.0	1.9	34	160
MLS-14-9	02-Mar-2014	1.0m	**S-CAT-3**	0.20	1.4	7.10	7.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02-Mar-2014	2.0m	**S-CAT-3**	0.44	7.3	7.41	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Mar-2014	3.0m	**S-CAT-3**	1.0	19	7.53	120	< 1.0	23	270	0.75	< 0.10	36	< 0.15	19	35	13	< 0.050	0.45	59	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	44	140
MLS-15-TP1	18-Mar-2015	1.0m	**S-CAT-3**	1.5	0.75	6.79	320	< 0.50	9.0	340	1.0	0.63	24	< 0.080	12	24	13	0.067	2.3	37	1.1	< 0.20	0.21	< 1.0	1.8	34	98
	18-Mar-2015	2.0m	**S-CAT-3**	0.55	0.44	7.18	52	0.50	13	190	0.46	0.32	16	< 0.080	8.7	24	11	0.080	2.3	29	< 0.50	< 0.20	0.32	< 1.0	0.98	27	98
	18-Mar-2015	2.5m	**S-CAT-3**	0.56	2.9	7.25	25	0.51	19	280	0.48	0.24	27	< 0.080	11	27	11	0.078	2.3	39	0.71	< 0.20	0.32	< 1.0	0.89	30	110
MLS-15-TP2	18-Mar-2015	1.0m	**S-CAT-3**	0.72	2.7	5.92	42	< 0.50	7.6	350	1.2	0.59	26	< 0.080	13	23	13	0.059	3.2	40	0.99	< 0.20	0.23	< 1.0	2.8	32	100
	18-Mar-2015	2.0m	**S-CAT-3**	1.5	6.2	7.22	340	0.65	12	230	< 0.40	0.43	23	< 0.080	9.0	23	11	0.073	3.0	32	0.51	< 0.20	0.29	< 1.0	1.0	26	90
S2-15-1	22-Aug-2015	Surface	**S-CAT-2**	1.9	18	8.51	260	2.5	16	330	0.46	1.2	27	< 0.080	12	38	170	0.81	4.0	41	0.87	0.23	0.54	< 1.0	0.96	24	420
SUMP 5-15-1	17-Sep-2015	Surface	**S-CAT-2**	3.8	22	7.72	740	< 0.50	9.6	470	1.1	0.40	58	< 0.080	13	27	58	< 0.050	2.1	44	< 0.50	0.27	0.19	1.2	1.8	36	310

NOTES:
1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Surface soils, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Subsurface soils, 1999 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Surface soils, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Industrial, Fine-grained Subsurface soils, 1999 and updates)

6. Background 95th Percentile Statistical Category:
S-CAT-1: Mainland - Organic Surface Soil - 95th Percentile Background
S-CAT-2: Mainland - Mineral Surface Soil - 95th Percentile Background
S-CAT-3: Mainland - Mineral Subsurface Soil - 95th Percentile Background
S-CAT-4: Mainland - Bedrock Siltstone - 95th Percentile Background

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date	Sample Depth	Background Category	PHC									PAH													
				Benzene	Toluene	Ethylbenzene	Xylenes (Total)	PHC F1 (C^6-C^{10}) - BTEX	PHC F2 (C_{10}-C_{16})	PHC F3 (C_{16}-C_{34})	PHC F4 (C_{34}-C_{50+})	PHC F4 (C_{34}-C_{50+})-Gravimetric	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)Anthracene	Benzo(a)Pyrene	Benzo(a)Pyrene Total Potency Equivalent	Benzo(k)Fluoranthene	Dibenzo(a,h)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Naphthalene	Phenanthrene	Pyrene
CCME Industrial Fine Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME Industrial Fine Subsoil				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil Industrial Fine Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil Industrial Fine Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-1				0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	0.016	0.016	0.012	0.02	0.02	---	---	0.0158	0.0196	0.026	0.0196	0.0226	0.3224	0.0476
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.23	0.0065	---	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
WSS-05-08	30-Aug-2005	2.5 - 3.0m	**S-CAT-4**	< 0.04	< 0.1	< 0.1	< 0.3	40	708	1320	287	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WSS-05-09	30-Aug-2005	2.5 - 3.0m	**S-CAT-4**	< 0.04	< 0.1	< 0.1	< 0.3	28	48	68	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WSS-05-10	30-Aug-2005	2.0 - 2.5m	**S-CAT-4**	< 0.04	< 0.1	< 0.1	< 0.3	17	19	47	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WSS-05-11	30-Aug-2005	0.0 - 0.15m	**S-CAT-2**	< 0.04	< 0.1	< 0.1	< 0.3	49	18	297	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Aug-2005	2.0 - 2.5m	**S-CAT-4**	< 0.04	< 0.1	< 0.1	< 0.3	24	100	217	57	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WSS-05-12	30-Aug-2005	2.5 - 3.0m	**S-CAT-4**	< 0.04	< 0.1	< 0.1	< 0.3	33	46	54	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-B2-3	08-Sep-2007	5.5m	**S-CAT-4**	< 0.0050	0.064	0.075	< 0.040	20	254	628	185	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-B2-5	08-Sep-2007	5.5m	**S-CAT-4**	< 0.0050	0.14	0.093	0.22	< 10	202	525	146	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-B3-2	08-Sep-2007	5.5m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	157	429	112	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-B3-4	08-Sep-2007	5.5m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	96	285	85	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-B4 -2	08-Sep-2007	5.5m	**S-CAT-4**	0.28	0.17	0.15	0.19	< 10	174	510	141	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-B4-4	08-Sep-2007	5.5m	**S-CAT-4**	0.34	0.41	0.29	0.13	98	977	1690	494	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-N2	08-Sep-2007	1.5 - 3.0m	**S-CAT-3**	0.16	0.10	0.22	0.081	29	249	836	244	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-N3	26-Sep-2007	0.0 - 1.5m	**S-CAT-3**	<0.0050	<0.020	<0.010	<0.040	<12	23	403	220	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	08-Sep-2007	3.0 - 4.0m	**S-CAT-3**	0.51	0.68	0.36	0.22	150	1260	1820	365	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-N4	08-Sep-2007	0.0 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	0.042	0.050	< 10	145	722	263	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Sep-2007	3.0 - 4.0m	**S-CAT-3**	0.068	<0.020	0.013	0.19	100	775	1,220	261	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-W2	10-Sep-2007	1.5 - 3.0m	**S-CAT-3**	1.5	0.044	0.26	0.089	< 10	120	283	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-W3	10-Sep-2007	3.0 - 4.0m	**S-CAT-3**	1.6	0.80	0.081	0.69	143	1030	1620	369	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-E1	27-Sep-2007	3.0 - 4.0m	**S-CAT-3**	0.13	<0.020	<0.010	<0.040	<12	232	384	108	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-E2	27-Sep-2007	0.0 - 1.5m	**S-CAT-3**	<0.0050	0.023	0.027	0.15	18	179	848	321	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-E3	27-Sep-2007	1.5 - 3.0m	**S-CAT-3**	<0.0050	<0.020	<0.010	<0.040	<12	57	239	113	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-E4	27-Sep-2007	3.0 - 4.0m	**S-CAT-3**	<0.0050	<0.020	<0.010	<0.040	<12	197	703	291	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-S2	24-Aug-2004	0.0 - 1.5m	**S-CAT-3**	0.018	0.032	0.022	0.08	<12	460	1,960	652	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-S3	26-Sep-2007	1.5 - 3.0m	**S-CAT-3**	<0.0050	<0.020	<0.010	<0.040	<12	53	201	114	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS07-S4	27-Sep-2007	0.0 - 1.5m	**S-CAT-3**	0.017	0.066	0.02	0.1	<12	523	2,710	1,280	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

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Sampling Location	Date	Sample Depth	Background Category	PHC									PAH													
				Benzene	Toluene	Ethylbenzene	Xylenes (Total)	PHC F1 (C^6-C^{10}) - BTEX	PHC F2 (C_{10}-C_{16})	PHC F3 (C_{16}-C_{34})	PHC F4 (C_{34}-C_{50+})	PHC F4 (C_{34}-C_{50+})-Gravimetric	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)Anthracene	Benzo(a)Pyrene	Benzo(a)Pyrene Total Potency Equivalent	Benzo(k)Fluoranthene	Dibenzo(a,h)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Naphthalene	Phenanthrene	Pyrene
CCME Industrial Fine Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME Industrial Fine Subsoil				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil Industrial Fine Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil Industrial Fine Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-1				0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	0.016	0.016	0.012	0.02	0.02	---	---	0.0158	0.0196	0.026	0.0196	0.0226	0.3224	0.0476
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.23	0.0065	---	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
WS07-S5	26-Sep-2007	3.0 - 4.0m	**S-CAT-3**	0.083	<0.020	<0.010	0.061	78	924	1,550	367	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS08-B2-2	16-Sep-2008	3.0 - 4.0m	**S-CAT-3**	0.034	0.11	0.048	0.28	52	340	660	220	840	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS08-EAST CLAY	11-Aug-2008		**S-CAT-2**	0.17	< 0.020	< 0.010	< 0.040	< 12	82	250	62	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS08-N1	14-Sep-2008	3.0 - 4.0m	**S-CAT-3**	0.88	< 0.020	0.11	0.23	46	600	1000	240	720	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS08-N5	16-Sep-2008	6.0 - 7.0m	**S-CAT-4**	1.7	0.50	0.096	0.34	68	830	1500	500	2100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS08-S2	14-Sep-2008	3.0 - 4.0m	**S-CAT-3**	0.15	< 0.020	< 0.010	< 0.040	< 12	12	33	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS08-S4	16-Sep-2008	2.0 - 3.0m	**S-CAT-3**	0.032	< 0.020	< 0.010	< 0.040	< 12	150	260	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS08-S6	16-Sep-2008	1.0 - 2.0m	**S-CAT-3**	< 0.0050	0.028	< 0.010	< 0.040	< 12	20	51	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS08-W1	16-Sep-2008	4.0 - 5.0m	**S-CAT-4**	0.99	0.077	0.067	0.12	69	620	1000	320	1200	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS08-W3	14-Sep-2008	3.0 - 4.0m	**S-CAT-3**	0.46	< 0.020	< 0.010	< 0.040	13	380	760	290	540	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS-08-01	29-Jul-2008	0.0 - 0.3m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	43	62	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2008	1.8 - 2.1m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	18	< 10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS-08-02	29-Jul-2008	0.0 - 0.3m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	59	200	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2008	1.8 - 2.1m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS-08-03	29-Jul-2008	0.0 - 0.3m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	66	210	67	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS08-01	10-Jul-2008		**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	33	140	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS08-02	10-Jul-2008		**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	20	270	710	140	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS08-03	10-Jul-2008		**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	190	800	230	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS08-04	10-Jul-2008		**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	67	350	66	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS08-05	10-Jul-2008		**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	69	100	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS08-06	10-Jul-2008		**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	55	79	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS08-07	10-Jul-2008		**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	47	41	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS08-08	10-Jul-2008		**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	34	42	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS08-09	10-Jul-2008		**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	35	55	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS08-10	10-Jul-2008		**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	68	280	68	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS08-11	10-Jul-2008		**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	42	60	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date	Sample Depth	Background Category	PHC									PAH													
				Benzene	Toluene	Ethylbenzene	Xylenes (Total)	PHC F1 (C^6-C^{10}) - BTEX	PHC F2 (C_{10}-C_{16})	PHC F3 (C_{16}-C_{34})	PHC F4 (C_{34}-C_{50+})	PHC F4 (C_{34}-C_{50+})-Gravimetric	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)Anthracene	Benzo(a)Pyrene	Benzo(a)Pyrene Total Potency Equivalent	Benzo(k)Fluoranthene	Dibenzo(a,h)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Naphthalene	Phenanthrene	Pyrene
CCME Industrial Fine Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME Industrial Fine Subsoil				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil Industrial Fine Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil Industrial Fine Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-1				0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	0.016	0.016	0.012	0.02	0.02	---	---	0.0158	0.0196	0.026	0.0196	0.0226	0.3224	0.0476
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.23	0.0065	---	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
MS08-12	10-Jul-2008		**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	130	220	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS08-NE-3	19-Jul-2008		**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	22	50	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS08-SE-2	18-Jul-2008		**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	79	190	60	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MS08-SUMP-1	28-Jul-2008		**S-CAT-2**	< 0.0050	< 0.020	0.48	1.8	44	420	1300	610	< 500	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-1	28-Jul-2009	2.7 - 3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	45	210	40	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	28-Jul-2009	2.7 - 3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	66	290	57	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-3	28-Jul-2009	1.9 - 2.2m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	17	100	25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-4	27-Jul-2009	2.7 - 3.0m	**S-CAT-3**	0.19	< 0.020	0.71	2.0	220	850	1600	430	2000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Jul-2009	3.3 - 3.6m	**S-CAT-3**	< 0.0050	< 0.020	0.062	0.20	37	330	760	200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Jul-2009	4.9 - 5.2m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	120	570	780	140	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-5	27-Jul-2009	1.8 - 2.1m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	100	310	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Jul-2009	2.4 - 2.7m	**S-CAT-3**	2.3	2.7	5.2	19	1100	1900	9300	3200	13000	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0088	---	< 0.0050	< 0.0050	< 0.0050	0.34	< 0.0050	1.2	0.95	0.063
	27-Jul-2009	3.3 - 3.6m	**S-CAT-4**	< 0.0050	0.10	0.14	0.38	130	510	950	220	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Jul-2009	4.1 - 4.4m	**S-CAT-4**	< 0.0050	0.054	< 0.010	0.17	56	380	820	220	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-7	28-Jul-2009	1.0 - 1.3m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	140	530	130	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Jul-2009	1.3 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	53	270	97	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	---	< 0.0050	< 0.0050	< 0.0050	0.016	< 0.0050	< 0.0050	0.1	0.0092
	28-Jul-2009	4.0 - 4.3m	**S-CAT-3**	5.3	13	3.9	20	310	1300	15000	5400	23000	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	---	< 0.0050	< 0.0050	0.20	0.86	< 0.0050	1.2	3.7	0.28
	28-Jul-2009	4.8 - 5.1m	**S-CAT-4**	0.042	< 0.020	0.11	0.54	220	790	1400	370	1600	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-8	28-Jul-2009	0.8 - 1.1m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	110	590	160	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Jul-2009	2.7 - 3.0m	**S-CAT-4**	0.18	< 0.020	1.5	1.4	650	3100	7300	2200	9600	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-9	28-Jul-2009	1.1 - 1.4m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	39	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-12	31-Jul-2009	1.0 - 1.3m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-13	31-Jul-2009	1.0 - 1.3m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	110	300	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-15	31-Jul-2009	1.3 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	26	350	2600	940	3900	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-16	31-Jul-2009	2.7 - 3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	25	370	810	190	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2009	3.0 - 3.3m	**S-CAT-3**	2.8	14	5.3	26	870	5500	12000	3600	16000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2009	4.8 - 5.7m	**S-CAT-3**	0.24	0.43	0.28	1.5	63	790	1300	330	1600	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2009	6.75 - 7.5m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	0.049	37	1100	1700	400	1900	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-17	29-Jul-2009	0.0 - 0.3m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	330	700	130	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2009	1.0 - 1.3m	**S-CAT-3**	< 0.0050	0.082	0.055	0.28	49	380	940	250	1100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date	Sample Depth	Background Category	PHC									PAH													
				Benzene	Toluene	Ethylbenzene	Xylenes (Total)	PHC F1 (C^6-C^{10}) - BTEX	PHC F2 (C_{10}-C_{16})	PHC F3 (C_{16}-C_{34})	PHC F4 (C_{34}-C_{50+})	PHC F4 (C_{34}-C_{50+})-Gravimetric	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)Anthracene	Benzo(a)Pyrene	Benzo(a)Pyrene Total Potency Equivalent	Benzo(k)Fluoranthene	Dibenzo(a,h)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Naphthalene	Phenanthrene	Pyrene
CCME Industrial Fine Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME Industrial Fine Subsoil				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil Industrial Fine Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil Industrial Fine Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-1				0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	0.016	0.016	0.012	0.02	0.02	---	---	0.0158	0.0196	0.026	0.0196	0.0226	0.3224	0.0476
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.23	0.0065	---	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
	29-Jul-2009	3.3 - 3.6m	**S-CAT-4**	< 0.0050	0.026	0.016	0.060	220	1200	1800	430	2100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-19	29-Jul-2009	2.7 - 3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	40	390	450	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2009	5.9 - 6.0m	**S-CAT-3**	< 0.0050	0.025	0.014	0.083	350	650	1000	240	1100	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2009	6.0 - 6.3m	**S-CAT-4**	0.030	0.11	0.098	0.49	39	160	240	25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-20	01-Aug-2009	0.7 - 1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	43	240	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	01-Aug-2009	0.7 - 1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	66	290	57	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Aug-2009	1.5 - 2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	140	1200	1800	480	1600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Aug-2009	4.9 - 5.2m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	260	1200	2000	520	2400	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-21	31-Jul-2009	1.5 - 2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	32	740	1400	350	1700	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2009	3.3 - 3.6m	**S-CAT-3**	< 0.0050	< 0.020	0.019	0.091	110	1400	2800	1000	3700	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-22	01-Aug-2009	1.0 - 1.3m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-23	29-Jul-2009	0.7 - 1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	0.044	< 12	43	220	40	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-24	28-Jul-2009	0.7 - 1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	24	120	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Jul-2009	3.3 - 3.6m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	91	640	910	170	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-09-25	29-Jul-2009	0.8 - 1.1m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	16	73	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2009	2.5 - 3.0m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	14	360	590	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MSB-09-1	30-Jul-2009	0.1 - 0.4m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	68	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Jul-2009	1.0 - 1.3m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MSB-09-2	30-Jul-2009	0.4 - 0.8m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	12	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MSB-09-3	30-Jul-2009	1.2 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	11	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MSB-09-4	30-Jul-2009	0.0 - 0.5m	**S-CAT-2**	< 0.0050	< 0.020	0.046	0.098	14	2500	6500	1200	6700	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Jul-2009	0.5 - 0.8m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	15	88	87	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Jul-2009	1.2 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	31	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MSB-09-5	30-Jul-2009	0.3 - 0.6m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	15	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Jul-2009	3.0 - 3.5m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	0.079	140	1700	3300	1000	3200	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MSB-09-6	30-Jul-2009	0.7 - 1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	11	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Jul-2009	2.4 - 3.0m	**S-CAT-4**	< 0.0050	0.026	0.020	0.16	270	2100	3300	1100	3700	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-10-01	30-Jul-2010	0.6 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	74	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Jul-2010	4.0 - 4.5m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	32	200	280	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-10-02	30-Jul-2010	1.7 - 2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	160	950	260	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date	Sample Depth	Background Category	PHC									PAH													
				Benzene	Toluene	Ethylbenzene	Xylenes (Total)	PHC F1 (C^6-C^{10}) - BTEX	PHC F2 (C_{10}-C_{16})	PHC F3 (C_{16}-C_{34})	PHC F4 (C_{34}-C_{50+})	PHC F4 (C_{34}-C_{50+})-Gravimetric	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)Anthracene	Benzo(a)Pyrene	Benzo(a)Pyrene Total Potency Equivalent	Benzo(k)Fluoranthene	Dibenzo(a,h)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Naphthalene	Phenanthrene	Pyrene
CCME Industrial Fine Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME Industrial Fine Subsoil				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil Industrial Fine Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil Industrial Fine Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-1				0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	0.016	0.016	0.012	0.02	0.02	---	---	0.0158	0.0196	0.026	0.0196	0.0226	0.3224	0.0476
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.23	0.0065	---	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
MLS-10-03	30-Jul-2010	0.5 - 1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	16	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Jul-2010	4.0 - 4.5m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	69	850	1400	330	2500	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-10-04	31-Jul-2010	1.5 - 1.8m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	21	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2010	4.2 - 4.5m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	17	130	200	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-10-05	31-Jul-2010	1.5 - 1.8m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	16	86	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-10-06	31-Jul-2010	0.5 - 1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	25	220	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2010	1.7 - 2.0m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	320	880	150	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-10-07	31-Jul-2010	0.9 - 1.5m	**S-CAT-3**	< 0.0050	0.058	< 0.010	< 0.040	< 12	11	82	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2010	3.8 - 4.3m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	0.052	88	710	1100	210	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-10-08	31-Jul-2010	0.0 - 0.5m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	58	250	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	31-Jul-2010	1.5 - 2.0m	**S-CAT-4**	0.046	< 0.020	0.11	< 0.040	15	370	540	67	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-12-1	16-Jul-2012	0.5 - 1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	52	150	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2012	2.5 - 3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	47	260	69	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-12-2	16-Jul-2012	0.3 - 0.8m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	100	350	71	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2012	2.5 - 2.8m	**S-CAT-3**	1.7	0.21	1.6	1.5	230	930	5400	1800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2012	3.2 - 3.7m	**S-CAT-4**	< 0.0050	< 0.020	0.012	0.052	55	500	770	140	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-12-3	16-Jul-2012	1.5 - 2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	95	220	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2012	4.2 - 4.5m	**S-CAT-3**	7.0	53	25	110	2800	2000	3400	1000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Jul-2012	5.0 - 5.5m	**S-CAT-4**	0.082	0.11	0.048	0.21	55	290	380	69	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-13-2	23-Aug-2013	1.5 - 1.7m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	0.083	< 12	90	540	120	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	2.0 - 2.2m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	180	940	220	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-13-3	23-Aug-2013	0.8 - 1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	1.3 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	23	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	2.8 - 3.0m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	38	100	73	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-13-4	23-Aug-2013	1.2 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	89	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	2.0 - 2.2m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	98	160	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	2.8 - 3.0m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	140	310	70	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-13-5	23-Aug-2013	1.3 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	18	160	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	2.0 - 2.2m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	160	740	150	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	2.8 - 3.0m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	40	940	1400	280	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	3.5 - 3.7m	**S-CAT-4**	< 0.0050	< 0.020	0.013	0.066	110	850	1200	230	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013	4.1 - 4.3m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	37	270	410	68	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date	Sample Depth	Background Category	PHC									PAH													
				Benzene	Toluene	Ethylbenzene	Xylenes (Total)	PHC F1 (C_6-C_{10}) - BTEX	PHC F2 (C_{10}-C_{16})	PHC F3 (C_{16}-C_{34})	PHC F4 (C_{34}-C_{50+})	PHC F4 (C_{34}-C_{50+})-Gravimetric	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)Anthracene	Benzo(a)Pyrene	Benzo(a)Pyrene Total Potency Equivalent	Benzo(k)Fluoranthene	Dibenzo(a,h)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Naphthalene	Phenanthrene	Pyrene
CCME Industrial Fine Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME Industrial Fine Subsoil				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil Industrial Fine Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil Industrial Fine Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-1				0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	0.016	0.016	0.012	0.02	0.02	---	---	0.0158	0.0196	0.026	0.0196	0.0226	0.3224	0.0476
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.23	0.0065	---	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
MLS-13-7	25-Aug-2013	1.3 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	28	88	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	2.0 - 2.2m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	79	240	55	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	2.8 - 3.0m	**S-CAT-4**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	190	410	98	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-13-8	25-Aug-2013	0.5 - 0.7m	**S-CAT-1**	< 0.017	< 0.070	< 0.030	< 0.13	< 40	< 33	470	< 170	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	1.3 - 1.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	19	16	160	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013	2.8 - 3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	17	< 10	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-14-1-C	15-Feb-2014	Surface	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	19	120	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.018	< 0.0050
MLS-14-2	27-Feb-2014	1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	74	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Feb-2014	2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	170	1800	830	2700	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Feb-2014	2.5m	**S-CAT-4**	< 0.0050	< 0.020	0.015	< 0.040	140	920	1400	320	---	0.037	< 0.025	< 0.0040	< 0.025	< 0.0050	< 0.10	< 0.0050	< 0.0050	0.014	0.26	< 0.0050	0.05	0.83	0.086
MLS-14-2-C	11-Mar-2014	Surface	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	84	470	180	---	< 0.0050	0.0058	< 0.0040	0.0051	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	0.031	< 0.0050	0.055	0.22	0.017
MLS-14-3	28-Feb-2014	1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.018	< 0.0050
	28-Feb-2014	2.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	90	170	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Feb-2014	3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	180	370	84	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-14-3-C	11-Mar-2014	Surface	**S-CAT-2**	0.035	< 0.020	< 0.010	< 0.040	< 12	56	220	61	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	0.0052	< 0.0050	0.013	0.073	0.0072
(Duplicate)	11-Mar-2014	Surface	**S-CAT-2**	0.051	< 0.020	0.074	0.37	< 12	88	280	72	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-14-4	28-Feb-2014	1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Feb-2014	2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.018	< 0.0050
(Duplicate)	28-Feb-2014	2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Feb-2014	3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	72	130	< 50	---	< 0.0050	< 0.0052	< 0.0040	0.010	0.0067	< 0.10	< 0.0050	0.0070	0.012	0.024	< 0.0050	0.011	0.13	0.024
MLS-14-4-C	11-Mar-2014	Surface	**S-CAT-2**	0.021	0.056	0.051	0.31	< 12	230	410	110	---	0.0079	< 0.012	< 0.0040	0.0066	< 0.0050	< 0.10	< 0.0050	0.0059	< 0.0050	0.050	< 0.0050	0.075	0.27	0.025
MLS-14-5	02-Mar-2014	1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	59	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02-Mar-2014	2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	21	70	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.016	< 0.0050
(Duplicate)	02-Mar-2014	2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	94	61	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02-Mar-2014	3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	68	280	62	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02-Mar-2014	3.8m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	110	150	< 50	---	< 0.022	0.017	< 0.0040	0.032	0.016	< 0.10	< 0.0050	0.0095	0.013	0.16	0.0090	0.029	0.55	0.057
MLS-14-5-C	12-Mar-2014	0.5m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	100	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0084	< 0.0050
MLS-14-6-C	12-Mar-2014	0.5m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	29	120	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.018	< 0.0050
MLS-14-7-C	12-Mar-2014	0.5m	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	29	120	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.015	< 0.0050
MLS-14-8	03-Mar-2014	1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Mar-2014	2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	33	160	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Mar-2014	3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	0.063	29	710	1100	210	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Advisian
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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date	Sample Depth	Background Category	PHC									PAH													
				Benzene	Toluene	Ethylbenzene	Xylenes (Total)	PHC F1 (C^6-C^{10}) - BTEX	PHC F2 (C_{10}-C_{16})	PHC F3 (C_{16}-C_{34})	PHC F4 (C_{34}-C_{50+})	PHC F4 (C_{34}-C_{50+})-Gravimetric	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)Anthracene	Benzo(a)Pyrene	Benzo(a)Pyrene Total Potency Equivalent	Benzo(k)Fluoranthene	Dibenzo(a,h)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Naphthalene	Phenanthrene	Pyrene
CCME Industrial Fine Surface				110	330	430	230	---	---	---	---	---	0.28	320	32	10	72	5.3	10	10	180	0.25	10	0.013	0.046	100
CCME Industrial Fine Subsoil				620	660	860	460	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil Industrial Fine Surface				---	---	---	---	320	260	2500	6600	6600	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME PHC in Soil Industrial Fine Subsoil				---	---	---	---	800	1000	5000	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-1				0.018	0.073	0.036	0.144	43.3	111.5	831.5	195.5	---	0.016	0.016	0.012	0.02	0.02	---	---	0.0158	0.0196	0.026	0.0196	0.0226	0.3224	0.0476
S-CAT-2				0.011	0.044	0.022	0.088	14.1	33.8	277	118	---	0.005	0.005	0.004	0.01	0.01	---	---	0.005	0.01	0.018	0.01	0.0117	0.0289	0.0134
S-CAT-3				0.015	0.02	0.016	0.081	18.3	83.7	536.5	209.5	---	0.006	0.006	0.004	0.006	0.009	---	---	0.006	0.011	0.013	0.01	0.018	0.045	0.02
S-CAT-4				0.0775	0.4	0.96	6.08	96.8	825.5	1265	288	---	0.034	0.023	0.004	0.23	0.0065	---	---	0.007	0.014	0.236	0.005	0.048	0.771	0.08
MLS-14-8-C	12-Mar-2014	Surface	**S-CAT-2**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	49	300	86	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	0.012	< 0.0050	0.014	0.089	0.0057
MLS-14-9	02-Mar-2014	1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	66	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02-Mar-2014	2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Mar-2014	3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	410	730	150	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	03-Mar-2014	3.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	370	770	160	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-15-TP1	18-Mar-2015	1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	110	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.018	0.0070
	18-Mar-2015	2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	15	73	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.026	0.0055
	18-Mar-2015	2.5m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	36	150	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0087	0.057	0.0083
MLS-15-TP2	18-Mar-2015	1.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	100	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	0.0050	< 0.0050	< 0.0050	< 0.0050	0.018	0.0072
	18-Mar-2015	2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	15	77	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.019	< 0.0050
(Duplicate)	18-Mar-2015	2.0m	**S-CAT-3**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	55	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S2-15-1	22-Aug-2015	Surface	**S-CAT-2**	1.1	4.7	3.5	23	330	5100	11000	2800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SUMP 5-15-1	17-Sep-2015	Surface	**S-CAT-2**	0.64	1.5	4.2	33	980	11000	6500	960	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
- (CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Subsurface Soils, excluding protection of potable groundwater, 2001 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
- (CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canadian Soil Quality Guidelines for Industrial Land Use, Fine-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Industrial Land Use, Fine-grained Subsurface Soils, excluding protection of potable groundwater, 2001 and updates)

6. Background 95th Percentile Statistical Category:
- S-CAT-1: Mainland - Organic Surface Soil - 95th Percentile Background
- S-CAT-2: Mainland - Mineral Surface Soil - 95th Percentile Background
- S-CAT-3: Mainland - Mineral Subsurface Soil - 95th Percentile Background
- S-CAT-4: Mainland - Bedrock Siltstone - 95th Percentile Background

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-5			**11**	**7.7**	**0.2**	**0.06**	**63**	**0.03**	**0.016**	**0.09**	**0.0013**	**0.007**	**0.008**	**14**	**0.051**	**0.00005**	**0.006**	**0.02**	**0.002**	**0.0001**	**0.0008**	**0.506**	**0.022**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS 02-10-8	22-Aug-2002	**W-CAT-3**	263	8.4	< 0.02	< 0.005	6	0.081	0.002	1.67	< 0.00010	0.006	0.0105	0.157	< 0.0005	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.0001	0.00088	0.006
	25-Aug-2003		417	7.3	< 0.2	< 0.06	---	---	< 0.005	1.782	< 0.002	< 0.007	< 0.009	0.029	**< 0.10**	< 0.00005	---	---	0.002	---	---	**< 1.0**	< 0.005
	24-Aug-2004		584	6.9	< 0.2	< 0.06	---	< 0.025	< 0.025	1.762	< 0.000085	< 0.005	0.034	0.065	< 0.005	< 0.00005	< 0.005	< 0.008	**< 0.005**	**< 0.0005**	< 0.0040	< 0.005	< 0.005
(Duplicate)	24-Aug-2004		---	---	---	---	---	< 0.015	< 0.015	1.754	< 0.000051	< 0.005	0.025	0.143	< 0.003	< 0.00005	< 0.005	< 0.008	< 0.003	**< 0.0003**	< 0.0024	< 0.003	< 0.005
	27-Aug-2005		343	8.0	< 0.2	< 0.06	17	< 0.005	< 0.005	1.57	0.00002	< 0.007	0.007	0.031	< 0.001	< 0.00005	< 0.006	< 0.008	0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	22-Aug-2006		401	8.0	< 0.2	< 0.06	15	< 0.005	< 0.005	1.76	< 0.00001	< 0.007	0.004	0.029	0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	22-Aug-2007		500	7.9	< 0.2	< 0.06	28	0.003	0.007	1.40	< 0.00001	0.004	0.0023	0.30	0.0003	---	0.0009	0.0025	0.004	< 0.0001	< 0.0002	0.0007	0.011
	19-Aug-2008		470	7.8	< 0.02	< 0.02	6	0.004	0.001	---	0.00001	< 0.001	0.0065	< 0.06	< 0.0002	---	< 0.0002	0.0016	< 0.001	< 0.0001	< 0.0002	0.0002	0.048
	19-Aug-2009		480	8.40	0.005	< 0.003	13	0.001	0.0018	1.4	0.000025	< 0.001	0.0037	< 0.06	< 0.0002	---	0.0005	0.0029	< 0.0002	< 0.0001	< 0.0002	0.0004	0.010
	19-Aug-2010		580	8.47	< 0.003	< 0.003	4	< 0.001	0.0016	1.5	0.000014	< 0.001	0.0022	< 0.06	< 0.0002	---	0.0003	0.0010	0.0004	< 0.0001	< 0.0002	0.0002	0.013
	19-Aug-2011		650	---	0.004	< 0.003	28	0.001	0.0018	1.3	0.000080	< 0.001	0.0023	< 0.06	0.0002	---	0.0002	0.0013	0.0005	< 0.0001	< 0.0002	0.0002	0.015
(Duplicate)	19-Aug-2011		---	---	---	---	41	0.032	0.0022	1.3	0.000025	< 0.001	0.0016	< 0.06	< 0.0002	---	0.0009	0.0007	0.0021	< 0.0001	< 0.0002	0.0003	0.008
	17-Aug-2012		670	---	< 0.0030	< 0.0030	< 2.0	0.0017	0.0017	1.5	< 0.000025	< 0.0010	0.0013	< 0.060	< 0.00020	---	0.00050	0.0013	0.00032	< 0.00010	< 0.00020	0.00020	0.0081
(Duplicate)	17-Aug-2012		---	---	---	---	2.1	< 0.0010	0.0015	1.5	< 0.000025	< 0.0010	0.0014	< 0.060	< 0.00020	---	0.00043	0.00096	0.00035	< 0.00010	< 0.00020	0.00019	0.0076
	23-Aug-2013		630	---	0.015	< 0.0030	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Aug-2013		630	---	0.061	< 0.015	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2014		840	---	< 0.010	< 0.010	---	0.0047	0.0024	1.6	< 0.000025	< 0.0010	0.0020	0.47	< 0.00020	---	0.00072	0.0014	< 0.00020	0.00039	< 0.00020	0.00013	0.0077
(Duplicate)	29-Jul-2014		790	---	< 0.010	< 0.010	---	0.0043	0.0024	1.6	< 0.000025	< 0.0010	0.0039	0.47	< 0.00020	---	0.00068	0.0011	< 0.00020	< 0.00010	< 0.00020	0.00012	0.0064
	07-Aug-2015		590	---	0.015	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	07-Aug-2015		590	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		540	---	< 0.010	< 0.010	---	0.0040	0.0035	1.9	< 0.000020	< 0.0010	0.0012	0.79	< 0.00020	---	0.00050	0.0040	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0080
	16-Aug-2017		670	---	< 0.10	**< 0.10**	---	< 0.0030	0.0037	1.8	< 0.000020	< 0.0010	0.00088	2.3	< 0.00020	---	0.00058	0.00096	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0078
	19-Jul-2018		520	---	< 0.10	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS 02-5-8	22-Aug-2002	**W-CAT-3**	507	7.8	< 0.02	< 0.005	19	0.289	0.001	1.47	< 0.00010	< 0.001	0.0117	0.831	0.0006	< 0.00005	< 0.005	< 0.008	0.001	< 0.0001	< 0.0001	0.00038	0.017
	25-Aug-2003		487	7.2	< 0.2	< 0.06	---	---	< 0.005	1.469	< 0.002	< 0.007	< 0.009	0.286	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
	24-Aug-2004		784	7.7	< 0.2	< 0.06	---	< 0.025	< 0.025	1.686	< 0.000085	< 0.005	0.036	3.477	< 0.005	< 0.00005	< 0.005	< 0.008	**< 0.005**	**< 0.0005**	< 0.0040	< 0.005	< 0.005
	27-Aug-2005		742	8.1	< 0.2	< 0.06	35	< 0.005	< 0.005	1.48	0.00001	< 0.007	< 0.002	0.104	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	22-Aug-2006		875	8.0	< 0.2	< 0.06	22	< 0.005	< 0.005	1.44	< 0.00001	< 0.007	0.002	0.346	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	0.008
	22-Aug-2007		1310	7.6	< 0.2	< 0.06	13	0.003	0.013	1.37	< 0.00001	0.005	0.0043	2.25	< 0.0002	---	0.0051	0.0091	0.003	< 0.0001	< 0.0002	0.0005	0.014
	19-Aug-2008		770	7.6	0.004	0.003	26	< 0.001	0.003	---	0.00002	< 0.001	0.0017	1.2	< 0.0002	---	0.0004	0.0022	< 0.001	< 0.0001	< 0.0002	0.0001	0.041
(Duplicate)	19-Aug-2008		---	---	---	---	13	0.005	0.002	1.4	< 0.00001	< 0.001	0.0026	1.2	< 0.0002	---	< 0.0002	0.0019	< 0.001	< 0.0001	< 0.0002	< 0.0001	0.095
	19-Aug-2009		800	7.88	0.009	< 0.003	8	0.012	0.0025	1.3	0.000015	< 0.001	0.0023	0.14	0.0002	---	0.0014	0.0029	< 0.0002	< 0.0001	< 0.0002	0.0004	0.010
	19-Aug-2010		660	8.17	< 0.003	0.008	2	0.005	0.0025	1.5	0.000014	< 0.001	0.0018	0.28	< 0.0002	---	0.0016	0.0035	< 0.0002	< 0.0001	< 0.0002	0.0008	0.012
	19-Aug-2011		580	---	0.12	< 0.03	68	< 0.01	0.005	1.5	< 0.00005	**< 0.01**	0.004	0.80	< 0.002	---	0.003	< 0.005	< 0.002	**< 0.001**	< 0.002	< 0.001	< 0.03
	17-Aug-2012		740	---	< 0.030	0.044	< 2.0	0.0034	0.0027	1.3	0.000027	< 0.0010	0.0011	3.1	< 0.00020	---	0.0015	0.0023	0.00030	< 0.00010	< 0.00020	0.00041	0.0079
	23-Aug-2013		870	---	0.017	< 0.0030	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2014		920	---	2.1	< 0.010	---	< 0.030	0.0022	1.2	< 0.00020	**< 0.010**	0.0022	0.44	< 0.0020	---	0.0029	< 0.0050	0.0038	**< 0.0010**	< 0.0020	0.0026	< 0.030
	08-Aug-2015		830	---	0.013	< 0.010	---	< 0.0030	0.0016	1.4	< 0.000020	< 0.0010	0.0011	0.95	0.00029	---	0.00057	0.0022	0.00073	< 0.00010	< 0.00020	0.0025	0.0083
	03-Aug-2016		1100	---	0.062	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2017		990	---	< 0.10	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Jul-2018		970	---	< 0.10	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols: Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Dissolved Metals: Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-5			**11**	**7.7**	**0.2**	**0.06**	**63**	**0.03**	**0.016**	**0.09**	**0.0013**	**0.007**	**0.008**	**14**	**0.051**	**0.00005**	**0.006**	**0.02**	**0.002**	**0.0001**	**0.0008**	**0.506**	**0.022**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS 02-6-9	22-Aug-2002	**W-CAT-3**	613	8.2	< 0.02	0.012	16	0.002	0.003	1.19	< 0.00010	0.002	0.0085	0.019	< 0.0005	< 0.00005	< 0.005	< 0.008	0.001	< 0.0001	< 0.0001	0.00236	0.011
	25-Aug-2003		1080	7.3	< 0.2	< 0.06	---	---	< 0.005	1.375	< 0.002	< 0.007	< 0.009	0.030	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
	24-Aug-2004		1220	7.9	< 0.2	< 0.06	---	< 0.050	< 0.050	1.493	< 0.000170	< 0.005	0.054	0.438	< 0.010	< 0.00005	< 0.005	< 0.008	**< 0.010**	**< 0.0010**	< 0.0080	< 0.010	< 0.005
	27-Aug-2005		1130	8.0	< 0.2	< 0.06	20	< 0.005	< 0.005	1.23	0.00002	< 0.007	< 0.002	0.468	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	22-Aug-2006		1120	8.1	< 0.2	< 0.06	17	< 0.005	< 0.005	1.33	< 0.00001	< 0.007	0.004	0.482	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	22-Aug-2007		1330	7.8	< 0.2	< 0.06	33	< 0.001	0.006	1.20	< 0.00001	0.006	0.0037	< 0.06	0.0008	---	0.0032	0.0022	0.006	0.0006	< 0.0002	0.0005	0.024
MLS 02-7-7	22-Aug-2002	**W-CAT-3**	1990	7.8	< 0.02	< 0.005	41	< 0.001	0.002	1.15	< 0.00010	0.008	0.0092	2.58	< 0.0005	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.0001	0.00101	0.005
	25-Aug-2003		3330	6.6	< 0.2	< 0.06	---	---	< 0.005	1.265	< 0.002	< 0.007	< 0.009	17.81	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
	26-Aug-2003		---	---	---	---	---	---	---	---	0.0052	---	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2004		5930	7.2	< 0.2	< 0.06	---	**< 0.250**	**< 0.250**	1.418	< 0.000850	< 0.005	0.236	27.56	**< 0.050**	< 0.00005	< 0.005	0.009	**< 0.050**	**< 0.0050**	**< 0.0400**	< 0.050	< 0.005
	27-Aug-2005		4400	7.5	< 0.2	< 0.06	67	< 0.005	< 0.005	1.03	0.00003	< 0.007	0.009	21.9	< 0.001	< 0.00005	< 0.006	0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	22-Aug-2006		2600	7.6	< 0.2	< 0.06	36	< 0.005	< 0.005	1.11	< 0.00001	< 0.007	0.006	5.27	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	22-Aug-2007		5400	7.1	2.0	< 0.06	39	0.004	0.002	1.01	< 0.00001	0.003	0.0121	27.1	0.0036	---	0.0008	< 0.0005	< 0.001	0.0002	< 0.0002	< 0.0001	0.041
	19-Aug-2008		2500	7.2	0.02	< 0.02	69	< 0.001	0.004	---	0.00003	< 0.001	0.0075	2.7	< 0.0002	---	< 0.0002	0.0037	< 0.001	< 0.0001	< 0.0002	< 0.0001	0.048
	19-Aug-2010		950	8.09	0.014	< 0.003	5	0.001	0.0009	1.2	< 0.000005	< 0.001	0.0016	0.06	0.0002	---	0.0005	0.0017	< 0.0002	< 0.0001	< 0.0002	0.0040	0.018
	19-Aug-2011		1300	---	0.006	< 0.003	10	< 0.01	< 0.002	1.1	< 0.00005	**< 0.01**	< 0.002	< 0.06	< 0.002	---	< 0.002	< 0.005	< 0.002	**< 0.001**	< 0.002	0.004	< 0.03
	29-Jul-2014		190	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	07-Aug-2015		210	---	0.015	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		410	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2017		200	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Jul-2018		220	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS 02-8-8	22-Aug-2002	**W-CAT-3**	1960	8.0	0.09	0.012	18	0.059	0.003	1.51	< 0.00010	0.014	0.0136	0.105	< 0.0005	< 0.00005	< 0.005	< 0.008	0.003	< 0.0001	< 0.0001	0.00166	< 0.005
	25-Aug-2003		3030	6.7	< 0.2	< 0.06	---	---	< 0.005	1.614	< 0.002	< 0.007	< 0.009	2.426	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
	24-Aug-2004		5720	7.0	< 0.2	< 0.06	---	**< 0.250**	**< 0.250**	1.470	< 0.000850	< 0.005	0.254	35.50	**< 0.050**	< 0.00005	< 0.005	0.016	**< 0.050**	**< 0.0050**	**< 0.0400**	< 0.050	< 0.005
	27-Aug-2005		4250	7.7	< 0.2	< 0.06	96	< 0.005	< 0.005	1.28	0.00002	< 0.007	0.006	11.1	< 0.001	< 0.00005	< 0.006	0.011	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
(Duplicate)	27-Aug-2005		---	---	---	---	41	< 0.005	< 0.005	1.28	0.00004	< 0.007	0.006	12.6	< 0.001	< 0.00005	< 0.006	0.016	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	22-Aug-2006		3350	7.8	< 0.2	< 0.06	43	< 0.005	< 0.005	1.45	< 0.00001	< 0.007	0.007	1.92	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
(Duplicate)	22-Aug-2006		---	---	---	---	37	---	< 0.005	1.44	< 0.00001	< 0.007	0.006	3.49	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	---	< 0.001	< 0.005
	22-Aug-2007		3680	7.3	< 0.2	< 0.06	26	< 0.001	0.002	1.26	< 0.00001	0.004	0.0070	7.63	0.0005	---	0.0011	0.0040	< 0.001	< 0.0001	< 0.0002	0.0001	0.032
	19-Aug-2008		3000	7.3	< 0.02	< 0.02	71	< 0.001	0.004	---	0.00002	< 0.001	0.0067	4.2	< 0.0002	---	0.0005	0.0034	< 0.001	< 0.0001	< 0.0002	0.0001	0.050
	19-Aug-2009		2600	7.96	0.010	0.004	15	< 0.001	0.0032	1.3	0.000031	< 0.001	0.0045	0.76	< 0.0002	---	0.0013	0.0025	< 0.0002	< 0.0001	< 0.0002	0.0001	0.015
	19-Aug-2010		2500	7.93	0.050	< 0.003	9	< 0.001	0.0029	1.4	0.000006	< 0.001	0.0030	0.62	< 0.0002	---	0.0010	0.0022	0.0002	< 0.0001	< 0.0002	< 0.0001	0.010
	19-Aug-2011		2600	---	0.030	< 0.003	29	< 0.01	0.003	1.4	0.00011	**< 0.01**	0.005	0.09	< 0.002	---	< 0.002	< 0.005	< 0.002	**< 0.001**	< 0.002	< 0.001	< 0.03
(Duplicate)	19-Aug-2011		---	---	---	---	23	< 0.001	0.0035	1.4	0.000015	< 0.001	0.0030	0.50	< 0.0002	---	0.0008	0.0021	0.0031	< 0.0001	< 0.0002	< 0.0001	0.012
	17-Aug-2012		1900	---	< 0.030	0.041	9.6	0.0039	0.0022	1.4	0.000037	< 0.0010	0.0021	1.5	0.00027	---	0.00045	0.0029	0.00060	< 0.00010	< 0.00020	0.00010	0.019
(Duplicate)	17-Aug-2012		---	---	---	---	8.4	0.0027	0.0022	1.4	0.000027	< 0.0010	0.0018	1.6	< 0.00020	---	0.00039	0.0025	0.00058	< 0.00010	< 0.00020	< 0.00010	0.017
	23-Aug-2013		2500	---	0.092	< 0.0030	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Aug-2013		2500	---	0.018	< 0.0030	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2014		2000	---	< 0.010	< 0.010	---	0.0047	0.0018	1.4	< 0.000025	< 0.0010	0.0021	3.8	< 0.00020	---	< 0.00020	0.0012	0.0025	< 0.00010	< 0.00020	< 0.00010	0.0075
(Duplicate)	29-Jul-2014		1800	---	< 0.010	< 0.010	---	0.0046	0.0019	1.4	< 0.000025	< 0.0010	0.0020	3.7	< 0.00020	---	< 0.00020	0.0013	0.0020	< 0.00010	< 0.00020	< 0.00010	0.0066
	07-Aug-2015		2300	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		2200	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	04-Aug-2016		2300	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2017		2400	---	< 0.10	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Aug-2017		2200	---	0.12	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Jul-2018		2200	---	< 0.10	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-5			**11**	**7.7**	**0.2**	**0.06**	**63**	**0.03**	**0.016**	**0.09**	**0.0013**	**0.007**	**0.008**	**14**	**0.051**	**0.00005**	**0.006**	**0.02**	**0.002**	**0.0001**	**0.0008**	**0.506**	**0.022**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS 02-9-8	22-Aug-2002	**W-CAT-3**	2290	8.6	0.15	0.007	22	< 0.001	0.006	1.42	< 0.00010	0.018	0.0188	0.014	< 0.0005	< 0.00005	< 0.005	< 0.008	0.004	< 0.0001	< 0.0001	0.00458	0.009
	25-Aug-2003		2910	7.0	0.5	< 0.06	---	---	< 0.005	1.679	< 0.002	< 0.007	0.010	0.054	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
	24-Aug-2004		1680	7.6	< 0.2	< 0.06	---	< 0.050	< 0.050	1.867	< 0.000170	< 0.005	0.064	2.735	< 0.010	< 0.00005	< 0.005	< 0.008	**< 0.010**	**< 0.0010**	< 0.0080	< 0.010	< 0.005
	27-Aug-2005		2780	7.7	< 0.2	< 0.06	32	< 0.005	< 0.005	1.32	0.00005	< 0.007	0.004	1.52	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	22-Aug-2006		2960	7.7	< 0.2	< 0.06	47	< 0.005	< 0.005	1.45	< 0.00001	< 0.007	0.005	0.065	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	< 0.001	< 0.005
	22-Aug-2007		3850	7.4	< 0.2	< 0.06	25	0.003	0.008	1.27	< 0.00001	0.003	0.0051	0.25	0.0006	---	0.0007	0.0051	0.014	< 0.0001	< 0.0002	0.0004	0.025
	19-Aug-2008		2400	7.5	< 0.02	< 0.02	51	0.031	0.002	---	0.00004	< 0.001	0.0076	< 0.06	< 0.0002	---	< 0.0002	0.0023	< 0.001	< 0.0001	< 0.0002	0.0002	0.23
	19-Aug-2009		2200	7.90	0.004	< 0.003	3	< 0.001	0.0015	1.3	0.000083	< 0.001	0.0025	0.08	< 0.0002	---	0.0004	0.0021	0.0006	< 0.0001	< 0.0002	0.0002	0.014
(Duplicate)	19-Aug-2009		---	---	---	---	3	< 0.001	0.0015	1.3	0.000091	< 0.001	0.0030	0.15	< 0.0002	---	0.0004	0.0025	< 0.0002	< 0.0001	< 0.0002	0.0002	0.013
	19-Aug-2010		2000	8.27	0.015	0.003	4	< 0.001	0.0019	1.4	0.000011	< 0.001	0.0026	< 0.06	0.0002	---	0.0007	0.0018	< 0.0002	< 0.0001	< 0.0002	0.0003	0.023
(Duplicate)	19-Aug-2010		---	---	---	---	5	< 0.001	0.0021	1.4	0.000013	< 0.001	0.0035	< 0.06	< 0.0002	---	0.0005	0.0019	0.0003	< 0.0001	< 0.0002	0.0003	0.020
	19-Aug-2011		2000	---	0.010	< 0.003	7	< 0.01	0.003	1.4	< 0.00005	**< 0.01**	0.003	0.79	< 0.002	---	< 0.002	< 0.005	< 0.002	**< 0.001**	< 0.002	< 0.001	< 0.03
	17-Aug-2012		2000	---	< 0.030	0.038	5.1	0.0082	0.0029	1.3	0.000027	< 0.0010	0.0025	1.1	0.00028	---	0.00091	0.0028	0.00037	< 0.00010	< 0.00020	0.00040	0.011
	23-Aug-2013		1600	---	0.024	< 0.015	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2014		1700	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	07-Aug-2015		1500	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		1600	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2017		1500	---	< 0.10	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Jul-2018		1500	---	< 0.10	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Jul-2018		1500	---	< 0.10	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS 08-1-4	19-Aug-2008	**W-CAT-3**	290	7.8	0.048	0.008	3	< 0.001	0.002	---	0.00011	< 0.001	0.0048	< 0.06	< 0.0002	---	0.0019	0.011	< 0.001	< 0.0001	< 0.0002	0.0043	0.034
	19-Aug-2009		220	7.90	0.008	< 0.003	< 2	< 0.001	0.0006	1.2	0.00032	< 0.001	0.0025	0.07	< 0.0002	---	0.0010	0.021	0.0003	< 0.0001	< 0.0002	0.0043	0.025
	19-Aug-2010		200	8.14	0.006	0.004	< 2	< 0.001	0.0002	0.80	0.000067	< 0.001	0.0017	< 0.06	< 0.0002	---	0.0006	0.010	0.0002	< 0.0001	< 0.0002	0.0043	0.008
	19-Aug-2011		330	---	0.003	< 0.003	2	< 0.01	0.003	1.5	0.00011	**< 0.01**	0.003	0.70	< 0.002	---	< 0.002	0.028	< 0.002	**< 0.001**	< 0.002	0.004	< 0.03
	18-Aug-2012		240	---	< 0.0030	< 0.0030	< 2.0	0.011	0.0012	1.3	0.000070	< 0.0010	0.00079	0.16	< 0.00020	---	0.00074	0.027	< 0.00020	< 0.00010	< 0.00020	0.0027	0.015
	23-Aug-2013		480	---	0.0076	0.0042	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2014		450	---	0.060	0.017	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06-Aug-2015		310	---	0.082	0.014	---	< 0.030	< 0.0020	1.9	< 0.00020	**< 0.010**	< 0.0020	0.092	< 0.0020	---	< 0.0020	0.021	< 0.0020	**< 0.0010**	< 0.0020	0.0021	< 0.030
	04-Aug-2016		280	---	< 0.010	< 0.010	---	0.025	0.0010	1.8	0.000034	< 0.0010	0.00020	0.40	< 0.00020	---	0.00065	0.0093	< 0.00020	< 0.00010	< 0.00020	0.0011	0.014
	16-Aug-2017		500	---	0.032	0.010	---	< 0.0030	0.0020	1.9	< 0.000020	< 0.0010	< 0.00020	0.77	< 0.00020	---	0.00042	0.0027	0.00037	< 0.00010	< 0.00020	0.00044	0.0074
	21-Jul-2018		460	---	< 0.010	< 0.010	---	< 0.0030	0.0015	1.8	< 0.000020	< 0.0010	0.00042	0.47	< 0.00020	---	0.00044	0.0045	0.00020	< 0.00010	< 0.00020	0.00078	0.013
MLS 08-2-5	19-Aug-2008	**W-CAT-3**	2300	7.7	0.009	0.018	29	0.011	< 0.001	---	0.00001	< 0.001	0.0058	0.80	< 0.0002	---	< 0.0002	0.0046	< 0.001	< 0.0001	< 0.0002	0.0004	0.13
	19-Aug-2009		3200	7.65	0.009	< 0.003	3	< 0.001	0.0018	0.85	< 0.000005	< 0.001	0.0005	1.7	0.0002	---	0.0004	0.0036	0.0031	< 0.0001	< 0.0002	< 0.0001	0.004
	19-Aug-2010		2600	7.93	0.008	0.004	3	< 0.001	0.0013	0.93	< 0.000005	< 0.001	0.0012	2.1	< 0.0002	---	0.0005	0.0016	0.0013	< 0.0001	< 0.0002	< 0.0001	0.006
	19-Aug-2011		2200	---	< 0.003	< 0.003	< 2	< 0.01	< 0.002	0.91	< 0.00005	**< 0.01**	0.011	1.7	< 0.002	---	< 0.002	< 0.005	< 0.002	**< 0.001**	< 0.002	< 0.001	< 0.03
	18-Aug-2012		2100	---	< 0.030	0.039	< 2.0	0.0046	0.00090	0.98	0.000016	< 0.0010	0.00084	1.7	< 0.00020	---	< 0.00020	0.0012	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0067
	23-Aug-2013		2200	---	0.0072	< 0.0030	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2014		680	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06-Aug-2015		280	---	0.016	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		240	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2017		710	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Aug-2017		310	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Advisian

WorleyParsons Group

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols: Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Dissolved Metals: Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-5			**11**	**7.7**	**0.2**	**0.06**	**63**	**0.03**	**0.016**	**0.09**	**0.0013**	**0.007**	**0.008**	**14**	**0.051**	**0.00005**	**0.006**	**0.02**	**0.002**	**0.0001**	**0.0008**	**0.506**	**0.022**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS 08-3-4	19-Aug-2008	**W-CAT-3**	620	8.0	0.16	0.055	6	< 0.001	0.009	---	0.00003	< 0.001	0.0061	< 0.06	< 0.0002	---	0.0068	0.0024	< 0.001	< 0.0001	< 0.0002	0.0028	0.056
	19-Aug-2009		240	7.89	0.010	< 0.003	4	< 0.001	0.0007	0.58	0.000074	< 0.001	0.0037	< 0.06	< 0.0002	---	0.0011	0.0064	< 0.0002	< 0.0001	< 0.0002	0.0050	0.010
	19-Aug-2010		220	8.24	0.048	0.005	< 2	< 0.001	0.0012	0.81	0.000054	< 0.001	0.0018	< 0.06	< 0.0002	---	0.0023	0.0033	0.0003	< 0.0001	< 0.0002	0.0042	0.022
	19-Aug-2011		700	---	0.016	0.003	4	< 0.01	0.004	1.5	0.00011	**< 0.01**	0.007	< 0.06	< 0.002	---	0.004	0.008	< 0.002	**< 0.001**	< 0.002	0.002	< 0.03
	18-Aug-2012		380	---	< 0.0030	< 0.0030	2.5	0.0048	0.0025	1.2	0.000095	< 0.0010	0.0017	< 0.060	< 0.00020	---	0.0033	0.0031	0.00037	< 0.00010	< 0.00020	0.0047	0.0068
	23-Aug-2013		400	---	0.016	< 0.0030	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2014		370	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06-Aug-2015		510	---	0.014	< 0.010	---	< 0.030	< 0.0020	1.6	< 0.00020	**< 0.010**	0.0023	0.069	< 0.0020	---	0.0025	0.012	< 0.0020	**< 0.0010**	< 0.0020	0.0080	0.033
	04-Aug-2016		450	---	0.011	< 0.010	---	0.0045	0.00092	1.3	0.00015	< 0.0010	0.00084	< 0.060	< 0.00020	---	0.0018	0.0075	< 0.00020	< 0.00010	< 0.00020	0.0074	0.0049
(Duplicate)	04-Aug-2016		460	---	< 0.010	< 0.010	---	0.0048	0.00082	1.3	0.00017	< 0.0010	0.00083	< 0.060	< 0.00020	---	0.0019	0.0078	< 0.00020	< 0.00010	< 0.00020	0.0075	0.0035
	16-Aug-2017		870	---	0.022	0.019	---	0.0047	0.0020	2.2	0.000089	< 0.0010	0.00049	**< 0.60**	< 0.00020	---	0.0025	0.0037	0.00024	< 0.00010	< 0.00020	0.0022	0.0046
	19-Jul-2018		700	---	< 0.010	< 0.010	---	0.65	0.0024	1.7	0.00021	0.0011	0.0021	0.31	0.00051	---	0.00094	0.0059	< 0.00020	< 0.00010	< 0.00020	0.0020	0.0052
(Duplicate)	19-Jul-2018		680	---	< 0.10	**< 0.10**	---	1.1	0.0027	1.6	0.00026	0.0015	0.0049	0.76	0.0020	---	0.00034	0.0074	< 0.00020	< 0.00010	< 0.00020	0.0031	0.012
MLS 09-1-3	19-Aug-2009	**W-CAT-3**	1700	7.75	0.019	< 0.003	2	< 0.001	0.0007	0.20	0.00043	< 0.001	0.0033	0.10	< 0.0002	---	0.0013	0.012	< 0.0002	< 0.0001	< 0.0002	0.012	0.010
	19-Aug-2010		1600	7.76	0.23	0.008	< 2	< 0.001	0.0004	0.47	0.00023	< 0.001	0.0011	0.07	< 0.0002	---	0.0006	0.011	0.0003	< 0.0001	< 0.0002	0.0092	0.009
	19-Aug-2011		1300	7.67	0.14	0.005	< 2	< 0.01	< 0.002	0.55	0.00034	**< 0.01**	< 0.002	0.11	< 0.002	---	< 0.002	0.011	< 0.002	**< 0.001**	< 0.002	0.010	< 0.03
	17-Aug-2012		1200	7.38	0.062	< 0.0030	< 2.0	0.0022	0.00033	0.50	0.000069	< 0.0010	0.0011	< 0.060	< 0.00020	---	0.00078	0.0034	0.00026	< 0.00010	< 0.00020	0.0081	0.0040
	21-Aug-2013		1400	---	0.090	0.011	30	< 0.0030	0.00093	0.68	0.00017	< 0.0010	0.00093	< 0.060	< 0.00020	---	0.00062	0.0060	< 0.00020	< 0.00010	< 0.00020	0.0085	0.0032
	29-Jul-2014		1700	---	0.31	< 0.010	< 10	0.0061	0.00032	0.66	0.00011	< 0.0010	0.0020	< 0.060	< 0.00020	---	0.00036	0.0066	0.00026	< 0.00010	< 0.00020	0.0089	0.0095
	08-Aug-2015		1600	---	0.043	< 0.010	---	< 0.0030	0.00027	0.93	0.000091	< 0.0010	0.00090	< 0.060	< 0.00020	---	0.00023	0.0042	< 0.00020	< 0.00010	< 0.00020	0.0076	0.016
	03-Aug-2016		1700	---	0.041	< 0.010	---	0.0040	0.00020	0.70	0.00025	< 0.0010	0.00067	< 0.060	< 0.00020	---	0.00039	0.0086	< 0.00020	< 0.00010	< 0.00020	0.0088	0.013
	16-Aug-2017		1100	---	0.073	< 0.010	---	0.58	0.0015	0.42	0.00027	0.0012	0.0032	1.6	0.0021	---	0.00027	0.0082	0.00022	< 0.00010	< 0.00020	0.0089	0.016
(Duplicate)	16-Aug-2017		1000	---	0.078	< 0.010	---	0.51	0.0015	0.42	0.00026	0.0011	0.0023	1.4	0.0017	---	0.00034	0.0076	0.00021	< 0.00010	< 0.00020	0.0089	0.015
	19-Jul-2018		1500	---	< 0.10	**< 0.10**	---	1.5	0.0039	0.58	0.00036	0.0029	0.0084	4.0	0.0078	---	0.00023	0.012	< 0.00020	0.00016	< 0.00020	0.0096	0.035
(Duplicate)	19-Jul-2018		1500	---	< 0.10	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS 09-2-3	19-Aug-2009	**W-CAT-3**	550	7.95	0.018	< 0.003	< 2	0.002	0.0016	0.73	0.000032	< 0.001	0.0025	< 0.06	0.0002	---	0.0026	0.0060	0.0003	< 0.0001	< 0.0002	0.0094	0.008
	19-Aug-2010		460	7.92	0.060	0.004	< 2	0.003	0.0007	0.78	0.000093	< 0.001	0.0014	< 0.06	< 0.0002	---	0.0022	0.0065	0.0006	< 0.0001	< 0.0002	0.014	0.012
	19-Aug-2011		500	7.84	0.017	0.003	3	< 0.01	< 0.002	1.0	0.00010	**< 0.01**	< 0.002	< 0.06	< 0.002	---	< 0.002	0.008	< 0.002	**< 0.001**	< 0.002	0.011	< 0.03
	17-Aug-2012		530	7.46	< 0.0030	< 0.0030	< 2.0	0.0023	0.00060	0.78	0.00011	< 0.0010	0.0020	< 0.060	< 0.00020	---	0.0020	0.0056	< 0.00020	< 0.00010	< 0.00020	0.013	0.019
	21-Aug-2013		600	---	0.0083	< 0.0030	28	0.0038	0.00054	0.80	0.00012	< 0.0010	0.0019	< 0.060	< 0.00020	---	0.0018	0.010	< 0.00020	< 0.00010	< 0.00020	0.011	0.0077
	29-Jul-2014		640	---	0.048	< 0.010	7.7	0.0065	0.00041	0.65	0.00010	< 0.0010	0.0023	< 0.060	< 0.00020	---	0.0021	0.0047	< 0.00020	< 0.00010	< 0.00020	0.014	0.017
	09-Aug-2015		630	---	0.012	< 0.010	---	0.0037	0.00054	0.36	0.00015	< 0.0010	0.0041	< 0.060	< 0.00020	---	0.0030	0.0086	< 0.00020	< 0.00010	< 0.00020	0.018	0.018
	03-Aug-2016		950	---	0.013	< 0.010	---	0.0044	0.00053	0.69	0.000094	< 0.0010	0.0010	< 0.060	< 0.00020	---	0.0018	0.0075	< 0.00020	< 0.00010	< 0.00020	0.014	0.035
	16-Aug-2017		810	---	< 0.010	< 0.010	---	0.012	0.00051	0.51	0.000072	< 0.0010	0.0028	< 0.060	0.00023	---	0.0023	0.0038	0.00020	< 0.00010	< 0.00020	0.019	0.024
	19-Jul-2018		810	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS 09-3-3	19-Aug-2009	**W-CAT-3**	1800	7.95	0.003	< 0.003	11	0.002	0.0021	0.20	0.000040	< 0.001	0.0030	< 0.06	< 0.0002	---	0.016	0.0057	< 0.0002	< 0.0001	< 0.0002	0.0031	0.007
	19-Aug-2010		630	7.97	0.035	0.004	5	0.024	0.0056	0.66	0.000014	< 0.001	0.0012	0.12	< 0.0002	---	0.0058	0.0041	0.0004	< 0.0001	< 0.0002	0.0033	0.010
(Duplicate)	19-Aug-2010		---	---	---	---	5	0.003	0.0047	0.73	0.000010	0.001	0.0010	< 0.06	< 0.0002	---	0.0053	0.0044	0.0002	< 0.0001	< 0.0002	0.0039	0.007
	19-Aug-2011		1700	7.93	< 0.003	< 0.003	4	0.10	0.004	0.23	< 0.00005	**< 0.01**	< 0.002	0.20	< 0.002	---	0.019	< 0.005	< 0.002	**< 0.001**	< 0.002	0.001	< 0.03
	17-Aug-2012		810	7.61	0.013	0.0037	< 2.0	0.0099	0.0032	0.94	< 0.000025	< 0.0010	0.00082	0.22	< 0.00020	---	0.0026	0.0052	< 0.00020	< 0.00010	< 0.00020	0.0051	0.011
	21-Aug-2013		1100	---	0.016	0.0050	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Advisian

WorleyParsons Group

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-5			**11**	**7.7**	**0.2**	**0.06**	**63**	**0.03**	**0.016**	**0.09**	**0.0013**	**0.007**	**0.008**	**14**	**0.051**	**0.00005**	**0.006**	**0.02**	**0.002**	**0.0001**	**0.0008**	**0.506**	**0.022**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS 09-4-4	19-Aug-2009	**W-CAT-3**	1500	8.05	< 0.003	< 0.003	47	0.002	0.011	0.19	0.000008	0.017	< 0.0002	0.21	< 0.0002	---	0.0013	0.0071	0.0024	< 0.0001	< 0.0002	0.0017	0.006
	17-Aug-2012		330	8.14	< 0.0030	< 0.0030	7.8	0.0061	0.022	0.094	< 0.000025	0.0030	0.00047	0.89	< 0.00020	---	0.0066	0.0024	< 0.00020	< 0.00010	< 0.00020	0.0012	< 0.0030
	22-Aug-2013		520	7.58	0.0050	< 0.0030	27	0.0038	0.0076	0.34	< 0.000025	< 0.0010	0.00038	1.2	< 0.00020	---	0.0016	0.0067	< 0.00020	< 0.00010	< 0.00020	0.0087	< 0.0030
	29-Jul-2014		800	7.67	0.015	< 0.010	16	0.0045	0.0094	0.068	< 0.000020	< 0.0010	0.0011	5.2	< 0.00020	---	0.0016	0.0097	0.00022	< 0.00010	< 0.00020	0.0086	0.0056
MLS 09-5-3	19-Aug-2009	**W-CAT-3**	450	7.65	0.027	< 0.003	4	< 0.001	0.0011	0.41	0.00016	< 0.001	0.0047	< 0.06	< 0.0002	---	0.0027	0.023	0.0004	< 0.0001	< 0.0002	0.0078	0.021
	19-Aug-2010		450	7.83	0.031	0.004	< 2	0.002	0.0012	0.51	0.00014	< 0.001	0.0019	0.16	< 0.0002	---	0.0027	0.025	0.0003	< 0.0001	< 0.0002	0.0091	0.065
	19-Aug-2011		560	7.60	0.17	< 0.03	< 2	< 0.01	0.002	0.55	< 0.00005	**< 0.01**	< 0.002	1.0	< 0.002	---	< 0.002	0.023	< 0.002	**< 0.001**	< 0.002	0.008	< 0.03
	17-Aug-2012		810	7.40	0.0079	< 0.0030	< 2.0	0.0027	0.00096	0.51	0.000047	< 0.0010	0.0012	0.20	< 0.00020	---	0.0019	0.016	0.00023	< 0.00010	< 0.00020	0.0046	0.015
	22-Aug-2013		430	---	0.063	< 0.0030	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2014		560	---	0.023	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		220	---	0.059	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2016		310	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2017		320	---	0.044	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Jul-2018		290	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS 09-6-2	19-Aug-2009	**W-CAT-3**	5	8.08	0.046	0.003	3	< 0.001	0.0007	0.11	0.000069	< 0.001	0.0030	< 0.06	< 0.0002	---	0.0004	0.0040	0.0002	< 0.0001	< 0.0002	0.0020	0.008
	19-Aug-2011		9	7.92	0.091	< 0.003	---	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
MLS 09-7-2	19-Aug-2009	**W-CAT-3**	430	7.92	0.095	0.009	5	< 0.001	0.0007	0.33	0.00010	< 0.001	0.0035	< 0.06	< 0.0002	---	0.0025	0.0060	0.0006	< 0.0001	< 0.0002	0.011	0.008
	19-Aug-2010		450	7.97	0.31	0.006	< 2	0.002	< 0.0002	0.21	0.000041	< 0.001	0.0020	< 0.06	< 0.0002	---	0.0009	0.0025	0.0020	< 0.0001	< 0.0002	0.015	0.011
	19-Aug-2011		420	7.93	0.12	0.012	< 2	0.13	0.0004	0.27	0.00005	< 0.001	0.0013	0.17	< 0.0002	---	0.0007	0.0022	0.0005	< 0.0001	< 0.0002	0.015	0.008
	17-Aug-2012		350	7.97	< 0.0030	< 0.0030	< 2.0	0.0014	0.00052	0.18	0.000046	< 0.0010	0.0015	< 0.060	< 0.00020	---	0.0013	0.0013	0.00034	< 0.00010	< 0.00020	0.013	0.0034
	21-Aug-2013		290	---	0.19	0.0096	---	0.0046	0.00031	0.10	0.000071	< 0.0010	0.0015	< 0.060	< 0.00020	---	0.0010	0.0027	< 0.00020	< 0.00010	< 0.00020	0.0094	0.0038
	30-Jul-2014		200	---	0.086	< 0.010	5.3	0.052	0.00038	0.043	0.000043	< 0.0010	0.0033	0.16	< 0.00020	---	0.0028	0.0042	0.00040	< 0.00010	< 0.00020	0.0060	0.0091
MLS 09-8-2	19-Aug-2010	**W-CAT-3**	440	7.91	0.048	0.005	< 2	0.006	0.0006	0.21	0.00016	< 0.001	0.0023	< 0.06	< 0.0002	---	0.0006	0.0066	< 0.0002	< 0.0001	< 0.0002	0.0043	0.010
	19-Aug-2011		590	7.65	0.022	0.004	2	< 0.01	< 0.002	0.22	0.00024	**< 0.01**	< 0.002	< 0.06	< 0.002	---	< 0.002	0.006	< 0.002	**< 0.001**	< 0.002	0.005	< 0.03
MLS 09-9-2	19-Aug-2009	**W-CAT-3**	710	7.48	0.010	< 0.003	< 2	< 0.001	0.0004	0.11	0.000066	< 0.001	0.0020	0.07	< 0.0002	---	< 0.0002	0.0037	< 0.0002	< 0.0001	< 0.0002	0.0010	0.007
	19-Aug-2010		230	8.01	0.035	0.004	< 2	< 0.001	0.0006	0.24	0.000015	< 0.001	0.0008	0.83	< 0.0002	---	0.0002	0.0049	< 0.0002	< 0.0001	< 0.0002	0.0005	0.009
	19-Aug-2011		630	7.50	0.034	0.008	< 2	0.004	0.0006	0.28	0.00025	< 0.001	0.0015	0.07	< 0.0002	---	0.0003	0.0056	< 0.0002	< 0.0001	< 0.0002	0.0011	0.008
	17-Aug-2012		650	7.69	< 0.0030	< 0.0030	2.2	0.0019	0.0024	0.34	0.00011	< 0.0010	0.0013	0.44	< 0.00020	---	0.00044	0.0056	< 0.00020	< 0.00010	< 0.00020	0.0011	0.0043
	23-Aug-2013		1100	---	0.033	< 0.015	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2014		1300	---	0.73	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	07-Aug-2015		1500	---	0.018	< 0.010	---	0.0066	0.0011	0.28	0.00023	< 0.0010	0.0017	5.4	< 0.00020	---	< 0.00020	0.0065	0.00024	< 0.00010	< 0.00020	0.0030	0.024
	04-Aug-2016		1800	---	< 0.010	< 0.010	---	0.0038	0.0012	0.33	0.00018	< 0.0010	0.00066	3.5	< 0.00020	---	< 0.00020	0.0077	< 0.00020	< 0.00010	< 0.00020	0.0035	0.0049
	16-Aug-2017		1700	---	0.65	0.020	---	0.0031	0.00072	0.14	0.00029	< 0.0010	0.0023	0.32	< 0.00020	---	0.00033	0.0046	0.00025	< 0.00010	< 0.00020	0.0066	0.0091
	19-Jul-2018		1600	---	0.13	< 0.010	---	< 0.0030	0.00071	0.15	0.00030	< 0.0010	0.0017	1.0	< 0.00020	---	0.00052	0.0034	< 0.00020	< 0.00010	< 0.00020	0.0061	0.012

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-5			**11**	**7.7**	**0.2**	**0.06**	**63**	**0.03**	**0.016**	**0.09**	**0.0013**	**0.007**	**0.008**	**14**	**0.051**	**0.00005**	**0.006**	**0.02**	**0.002**	**0.0001**	**0.0008**	**0.506**	**0.022**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS 09-15-3	19-Aug-2010	**W-CAT-3**	850	7.79	0.024	0.004	< 2	0.014	0.0007	0.39	0.00066	< 0.001	0.0022	< 0.06	< 0.0002	---	0.0013	0.015	0.0009	< 0.0001	< 0.0002	0.0080	0.012
	19-Aug-2011		930	7.61	0.045	< 0.003	< 2	< 0.001	0.0007	0.35	0.00048	< 0.001	0.0021	0.06	< 0.0002	---	0.0006	0.011	0.0004	< 0.0001	< 0.0002	0.0079	0.015
	17-Aug-2012		880	7.71	< 0.0030	< 0.0030	< 2.0	0.0021	0.00050	0.31	0.00044	< 0.0010	0.0022	< 0.060	< 0.00020	---	0.00053	0.0098	0.00029	< 0.00010	< 0.00020	0.0089	0.030
	22-Aug-2013		800	---	0.16	0.0080	23	0.0031	0.0014	0.36	0.00029	< 0.0010	0.0015	< 0.060	< 0.00020	---	0.00053	0.0060	0.00026	< 0.00010	< 0.00020	0.0085	0.015
	29-Jul-2014		940	---	0.23	< 0.010	14	0.0074	0.00038	0.32	0.00031	< 0.0010	0.0033	< 0.060	< 0.00020	---	0.00040	0.0069	0.00035	< 0.00010	< 0.00020	0.0074	0.042
	09-Aug-2015		730	---	0.031	< 0.010	---	0.0037	0.00034	0.43	0.00018	< 0.0010	0.0032	< 0.060	< 0.00020	---	0.00040	0.0033	0.00020	< 0.00010	< 0.00020	0.0087	0.019
	03-Aug-2016		750	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2017		1600	---	0.090	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Jul-2018		1000	---	0.14	**< 0.10**	---	0.10	0.00035	0.30	0.00015	< 0.0010	0.0027	0.20	0.00051	---	0.00033	0.0032	0.00032	< 0.00010	< 0.00020	0.011	0.018
MLS 92-1-3	06-Sep-1997	**W-CAT-3**	78.1	7.9	0.31	0.014	2	30.1	0.0080	0.946	< 0.002	0.023	0.022	26.3	0.043	< 0.00005	< 0.004	0.026	< 0.0005	**< 0.01**	< 0.02	---	0.131
	07-Sep-1998		122	8.4	0.06	0.107	---	< 0.02	< 0.04	0.832	< 0.002	< 0.002	< 0.001	< 0.003	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	0.004
	20-Oct-1998		---	---	---	---	5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Sep-1999		180	7.9	0.65	0.023	---	0.06	0.002	0.442	< 0.0001	0.005	0.003	0.033	< 0.001	< 0.00005	< 0.004	< 0.008	< 0.001	< 0.0001	< 0.02	---	< 0.002
	19-Sep-2000		180	7.8	0.14	0.008	3	< 0.02	< 0.001	0.259	< 0.0001	< 0.005	< 0.005	0.030	< 0.001	0.00025	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.03	---	0.007
	28-Aug-2001		249	8.2	< 0.02	< 0.005	4	0.03	< 0.05	0.614	< 0.002	< 0.005	< 0.005	0.124	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	22-Aug-2002		203	8.1	< 0.02	0.005	2	< 0.001	0.001	0.516	< 0.00001	< 0.001	0.0038	0.006	< 0.0005	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.0001	0.00142	0.010
	25-Aug-2003		257	7.1	< 0.2	< 0.06	---	---	< 0.005	0.297	< 0.002	< 0.007	< 0.009	0.027	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.014
MLS 93-10-6	06-Sep-1997	**W-CAT-3**	485	8.1	< 0.02	< 0.005	23	0.16	0.0171	1.64	0.002	0.066	0.071	0.157	0.003	< 0.00005	< 0.004	0.110	< 0.0005	**< 0.01**	< 0.02	---	0.338
	07-Sep-1998		446	8.3	< 0.02	< 0.005	9	< 0.02	0.06	1.37	< 0.002	< 0.002	< 0.001	< 0.003	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	< 0.002
	18-Sep-1999		410	7.6	< 0.02	< 0.005	---	0.02	0.004	1.28	< 0.0001	0.002	< 0.001	0.398	< 0.001	< 0.00005	< 0.004	0.012	< 0.001	< 0.0001	< 0.02	---	< 0.002
	19-Sep-2000		620	7.9	< 0.02	< 0.005	16	< 0.02	0.003	1.09	< 0.0001	< 0.005	< 0.005	0.006	< 0.001	0.00007	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.03	---	0.007
	28-Aug-2001		537	7.9	< 0.02	< 0.005	7	0.63	< 0.05	1.12	< 0.002	< 0.005	< 0.005	1.28	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
MLS 93-13-7	06-Sep-1997	**W-CAT-3**	350	8.2	< 0.02	< 0.005	9	0.28	0.0211	1.42	0.004	0.108	0.051	0.198	0.003	< 0.00005	< 0.004	0.170	0.0007	**< 0.01**	< 0.02	---	0.438
	07-Sep-1998		390	8.4	< 0.02	0.018	---	< 0.02	0.06	1.14	< 0.002	< 0.002	< 0.001	0.017	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	< 0.002
	17-Sep-1999		400	7.9	< 0.02	< 0.005	---	0.08	0.002	0.984	< 0.0001	0.004	0.003	0.372	< 0.001	< 0.00005	0.005	0.012	< 0.001	< 0.0001	< 0.02	---	0.003
	19-Sep-2000		9.7	8.1	0.05	0.005	3	< 0.02	< 0.001	0.482	< 0.0001	< 0.005	< 0.005	0.007	< 0.001	0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.03	---	< 0.005
	22-Aug-2002		371	8.2	< 0.02	< 0.005	6	< 0.001	0.002	1.02	< 0.00010	0.003	0.0072	0.165	< 0.0005	< 0.00005	< 0.005	< 0.008	0.001	< 0.0001	< 0.0001	0.00214	< 0.005
(Duplicate)	22-Aug-2002		327	6.3	< 0.02	< 0.005	5	< 0.001	0.002	0.984	< 0.00010	0.003	0.0091	1.34	< 0.0005	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.0001	0.00208	0.124
	25-Aug-2003		525	7.1	< 0.2	< 0.06	---	---	< 0.005	1.183	< 0.002	< 0.007	< 0.009	0.024	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
MLS 93-3-6	17-Sep-1999	**W-CAT-3**	200	8.3	0.11	**< 0.110**	---	0.11	0.002	0.830	< 0.0001	0.003	0.002	0.210	< 0.001	< 0.00005	< 0.004	< 0.008	< 0.001	< 0.0001	< 0.02	---	< 0.002
	19-Sep-2000		160	8.1	< 0.02	< 0.005	---	0.03	0.001	0.794	< 0.0001	< 0.005	< 0.005	0.061	< 0.001	0.00018	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.03	---	< 0.005
	28-Aug-2001		168	8.6	< 0.02	< 0.005	3	< 0.02	< 0.05	0.789	< 0.002	< 0.005	< 0.005	0.007	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
MLS 93-4-3	28-Aug-2001	**W-CAT-3**	18.1	8.4	< 0.02	0.015	---	0.12	< 0.05	0.106	< 0.002	< 0.005	< 0.005	0.201	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
MLS 93-5-4	07-Sep-1998	**W-CAT-3**	760	8.3	< 0.02	< 0.005	---	< 0.02	0.09	1.24	< 0.002	< 0.002	< 0.001	0.007	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	0.002
	17-Sep-1999		660	7.9	0.03	0.014	---	0.18	0.004	1.42	< 0.0001	0.004	0.002	0.146	< 0.001	< 0.00005	< 0.004	0.009	< 0.001	< 0.0001	< 0.02	---	< 0.002
	19-Sep-2000		690	7.8	< 0.02	< 0.005	6	0.02	< 0.001	1.45	< 0.0001	< 0.005	< 0.005	0.064	< 0.001	0.00009	< 0.005	< 0.008	< 0.001	0.0001	< 0.03	---	< 0.005
	28-Aug-2001		674	8.5	< 0.02	< 0.005	7	< 0.02	< 0.05	1.56	< 0.002	< 0.005	< 0.005	< 0.005	< 0.03	---	< 0.005	< 0.008	0.03	**< 0.01**	< 0.03	---	< 0.005
(Duplicate)	28-Aug-2001		689	8.3	< 0.02	< 0.005	5	< 0.02	< 0.05	1.60	< 0.002	< 0.005	< 0.005	< 0.005	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
MLS 93-6-6	06-Sep-1997	**W-CAT-3**	323	8.1	< 0.02	< 0.005	8	1.92	0.0027	0.703	< 0.002	0.006	0.015	5.25	0.017	0.00016	< 0.004	< 0.008	< 0.0005	**< 0.01**	< 0.02	---	0.057
	07-Sep-1998		828	8.3	< 0.02	0.005	---	< 0.02	0.12	0.841	< 0.002	< 0.002	< 0.001	< 0.003	< 0.02	---	< 0.004	< 0.008	0.03	**< 0.01**	< 0.02	---	< 0.002
	18-Sep-1999		610	7.2	< 0.02	0.019	---	0.07	0.003	0.556	< 0.0001	0.004	0.004	0.085	< 0.001	< 0.00005	< 0.004	0.012	< 0.001	< 0.0001	< 0.02	---	0.068
	19-Sep-2000		260	7.5	< 0.02	< 0.005	8	< 0.02	0.002	0.367	< 0.0001	< 0.005	< 0.005	0.094	< 0.001	0.00009	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.03	---	< 0.005
	28-Aug-2001		249	8.2	< 0.02	< 0.005	2	0.05	< 0.05	0.398	< 0.002	< 0.005	< 0.005	0.077	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-5			**11**	**7.7**	**0.2**	**0.06**	**63**	**0.03**	**0.016**	**0.09**	**0.0013**	**0.007**	**0.008**	**14**	**0.051**	**0.00005**	**0.006**	**0.02**	**0.002**	**0.0001**	**0.0008**	**0.506**	**0.022**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS 93-7-4	06-Sep-1997	**W-CAT-3**	378	7.6	< 0.02	< 0.005	9	3.55	0.0049	0.608	< 0.002	0.007	0.019	9.50	0.010	< 0.00005	< 0.004	0.012	< 0.0005	**< 0.01**	< 0.02	---	0.051
	07-Sep-1998		863	8.1	< 0.02	< 0.005	14	< 0.02	0.05	0.681	< 0.002	< 0.002	< 0.001	< 0.003	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	< 0.002
	18-Sep-1999		400	7.4	0.02	0.006	---	0.04	0.002	0.285	< 0.0001	0.007	0.003	0.020	< 0.001	< 0.00005	< 0.004	0.015	< 0.001	< 0.0001	< 0.02	---	< 0.002
	19-Sep-2000		320	7.7	< 0.02	< 0.005	7	< 0.02	0.006	0.719	< 0.0001	< 0.005	< 0.005	0.009	< 0.001	0.00023	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.03	---	0.006
	28-Aug-2001		469	7.9	< 0.02	< 0.005	2	0.02	< 0.05	0.450	< 0.002	< 0.005	< 0.005	0.050	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
MLS 93-8-7	06-Sep-1997	**W-CAT-3**	2610	7.4	< 0.02	< 0.005	50	0.02	0.0031	1.01	< 0.002	< 0.002	< 0.001	0.139	< 0.001	< 0.00005	< 0.004	0.014	< 0.0005	**< 0.01**	< 0.02	---	< 0.002
	07-Sep-1998		2290	7.9	< 0.02	< 0.005	---	< 0.02	< 0.04	1.23	< 0.0010	0.004	< 0.001	0.088	0.02	< 0.00005	< 0.004	< 0.008	< 0.001	< 0.0001	< 0.002	---	< 0.002
	20-Oct-1998		---	---	---	---	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-1999		2100	7.3	0.02	< 0.005	---	0.04	0.004	0.812	< 0.0001	0.005	< 0.001	0.612	< 0.001	< 0.00005	< 0.004	0.016	< 0.001	< 0.0001	< 0.02	---	< 0.002
	19-Sep-2000		2400	7.4	< 0.02	< 0.005	25	< 0.02	< 0.001	0.842	< 0.0001	< 0.005	< 0.005	0.457	< 0.001	0.00009	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.03	---	< 0.005
	28-Aug-2001		2550	7.5	0.03	< 0.005	32	< 0.02	< 0.05	0.786	< 0.002	< 0.005	< 0.005	0.007	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
MLS 93-9-6	06-Sep-1997	**W-CAT-3**	1490	7.9	< 0.02	< 0.005	28	0.29	0.0056	1.49	< 0.002	< 0.002	0.013	0.600	0.002	0.00006	< 0.004	< 0.008	< 0.0005	**< 0.01**	< 0.02	---	0.020
	07-Sep-1998		1880	8.3	0.02	< 0.005	---	< 0.02	< 0.04	1.54	< 0.0010	< 0.002	< 0.001	0.054	< 0.02	< 0.00005	< 0.004	< 0.008	< 0.001	< 0.0001	< 0.002	---	< 0.002
	20-Oct-1998		---	---	---	---	25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-1999		2000	7.4	< 0.02	< 0.005	---	0.11	0.013	1.30	0.0004	0.005	0.002	1.65	0.001	< 0.00005	< 0.004	0.010	< 0.001	0.0004	< 0.02	---	0.002
(Duplicate)	18-Sep-1999		1900	7.5	< 0.02	< 0.005	---	0.10	0.013	1.32	< 0.0001	0.004	0.002	1.64	< 0.001	< 0.00005	< 0.004	< 0.008	< 0.001	< 0.0001	< 0.02	---	< 0.002
	19-Sep-2000		2100	7.8	< 0.02	< 0.005	28	< 0.02	0.001	1.27	< 0.0001	< 0.005	< 0.005	0.640	< 0.001	0.00016	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.03	---	0.009
	28-Aug-2001		2110	8.0	< 0.02	< 0.005	44	0.07	< 0.05	1.35	< 0.002	< 0.005	< 0.005	0.178	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
MLS 97-12-4	15-Jul-1997	**W-CAT-3**	26.7	8.0	---	---	---	0.12	< 0.04	0.140	< 0.002	0.004	0.001	0.254	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	0.006
	07-Sep-1998		6.9	8.4	0.27	0.013	---	< 0.02	< 0.04	0.399	< 0.002	< 0.002	< 0.001	< 0.003	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	< 0.002
	17-Sep-1999		12	7.9	0.17	0.014	< 1	0.05	< 0.001	0.612	< 0.0001	0.003	0.001	0.030	< 0.001	< 0.00005	< 0.004	0.010	< 0.001	< 0.0001	< 0.02	---	< 0.002
	19-Sep-2000		180	7.8	< 0.02	< 0.005	7	0.05	0.005	0.336	< 0.0001	< 0.005	< 0.005	0.079	0.002	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.03	---	< 0.005
	28-Aug-2001		43.3	7.9	0.25	0.008	38	< 0.02	< 0.05	0.373	< 0.002	< 0.005	< 0.005	< 0.005	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	25-Aug-2003		78	6.7	0.3	< 0.06	---	---	< 0.005	0.120	< 0.002	< 0.007	< 0.009	0.022	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	< 0.005
	27-Aug-2005		91.8	7.6	0.7	< 0.06	16	< 0.005	< 0.005	0.14	0.00010	< 0.007	0.008	< 0.006	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	0.0103	< 0.005
	22-Aug-2006		83	7.8	< 0.2	< 0.06	13	< 0.005	< 0.005	0.14	< 0.00001	< 0.007	0.003	0.078	< 0.001	< 0.00005	< 0.006	< 0.008	< 0.001	< 0.0001	< 0.0008	0.009	< 0.005
	19-Aug-2008		69	7.8	0.12	< 0.003	3	0.004	< 0.001	---	0.00005	< 0.001	0.0059	< 0.06	< 0.0002	---	0.0002	0.0030	< 0.001	< 0.0001	< 0.0002	0.010	0.086
	19-Aug-2009		97	7.88	0.15	< 0.003	7	< 0.001	< 0.0002	0.11	0.00019	< 0.001	0.0050	< 0.06	< 0.0002	---	0.0011	0.0024	0.0002	< 0.0001	< 0.0002	0.011	0.011
	19-Aug-2011		87	---	0.05	< 0.03	2	< 0.01	< 0.002	0.15	0.00016	**< 0.01**	< 0.002	< 0.06	< 0.002	---	< 0.002	< 0.005	< 0.002	**< 0.001**	< 0.002	0.016	< 0.03
	31-Jul-2014		---	---	---	---	---	0.015	0.00059	0.12	0.000067	< 0.0010	0.0023	< 0.060	< 0.00020	---	0.0017	0.0031	0.00076	< 0.00010	< 0.00020	0.016	0.0087
	06-Aug-2015		---	---	---	---	---	< 0.0030	0.00043	0.13	0.00019	< 0.0010	0.0021	< 0.060	< 0.00020	---	0.0013	0.0036	0.00025	< 0.00010	< 0.00020	0.014	0.0050
MLS 98-11-2	07-Sep-1998	**W-CAT-3**	10.5	7.1	< 0.02	< 0.005	---	< 0.02	< 0.04	0.175	< 0.002	< 0.002	< 0.001	< 0.003	< 0.02	---	< 0.004	< 0.008	**< 0.03**	**< 0.01**	< 0.02	---	< 0.002
	17-Sep-1999		150	7.4	0.05	< 0.005	2	0.03	< 0.001	0.120	< 0.0001	0.007	0.003	0.004	< 0.001	< 0.00005	< 0.004	0.010	< 0.001	< 0.0001	< 0.02	---	< 0.002
(Duplicate)	17-Sep-1999		140	7.5	0.04	< 0.005	2	0.03	0.001	0.118	< 0.0001	0.006	0.002	0.008	< 0.001	< 0.00005	< 0.004	0.010	< 0.001	< 0.0001	< 0.02	---	< 0.002
	19-Sep-2000		210	7.4	0.24	0.008	5	0.02	< 0.001	0.118	< 0.0001	< 0.005	< 0.005	0.007	< 0.001	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.03	---	< 0.005
	28-Aug-2001		328	7.7	0.02	< 0.005	7	0.03	< 0.05	0.070	< 0.002	< 0.005	< 0.005	0.007	< 0.03	---	< 0.005	< 0.008	**< 0.03**	**< 0.01**	< 0.03	---	< 0.005
	23-Aug-2002		343	8.2	0.06	< 0.005	7	0.083	< 0.001	0.046	0.00005	< 0.001	0.0085	0.216	0.0007	< 0.00005	< 0.005	< 0.008	< 0.001	< 0.0001	< 0.0001	0.00267	0.017
	25-Aug-2003		442	6.4	< 0.2	< 0.06	---	---	< 0.005	< 0.050	< 0.002	< 0.007	< 0.009	0.298	**< 0.10**	< 0.00005	---	---	< 0.001	---	---	**< 1.0**	0.009
	24-Aug-2004		361	---	< 0.2	< 0.06	---	0.012	< 0.010	0.010	0.000110	< 0.005	0.015	0.014	< 0.002	< 0.00005	< 0.005	< 0.008	**< 0.002**	< 0.0002	< 0.0016	< 0.002	< 0.005
	27-Aug-2005		328	7.8	< 0.2	< 0.06	11	< 0.005	< 0.005	< 0.05	0.00007	< 0.007	0.009	0.046	< 0.001	< 0.00005	< 0.006	< 0.008	0.001	< 0.0001	< 0.0008	< 0.001	0.093
MLS SW01	19-Aug-2009	**W-CAT-6**	610	8.15	0.006	< 0.003	< 2	0.033	0.0011	0.19	< 0.000005	< 0.001	0.0005	0.21	< 0.0002	---	0.0006	0.0009	< 0.0002	< 0.0001	< 0.0002	0.0008	< 0.003
	19-Aug-2010		650	7.92	0.016	< 0.003	< 2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	19-Aug-2011		510	8.15	0.004	< 0.003	< 2	---	---	---	---	---	---	0.07	---	---	---	---	---	---	---	---	---
	17-Aug-2012		420	8.02	< 0.0030	< 0.0030	< 2.0	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
	23-Aug-2013		380	---	0.011	< 0.0030	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2014		350	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		180	---	0.031	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Jun-2016		530	7.86	---	---	7.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		110	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-5			**11**	**7.7**	**0.2**	**0.06**	**63**	**0.03**	**0.016**	**0.09**	**0.0013**	**0.007**	**0.008**	**14**	**0.051**	**0.00005**	**0.006**	**0.02**	**0.002**	**0.0001**	**0.0008**	**0.506**	**0.022**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS SW02	19-Aug-2009	**W-CAT-6**	**2400**	8.16	0.003	< 0.003	< 2	0.096	0.0019	0.14	0.000008	< 0.001	0.0010	**0.34**	0.0003	---	0.0016	0.0025	0.0003	< 0.0001	< 0.0002	0.0022	< 0.003
	19-Aug-2010		53	6.96	0.025	< 0.003	4	---	---	---	---	---	---	**0.52**	---	---	---	---	---	---	---	---	---
	19-Aug-2011		120	7.51	0.06	< 0.03	**10**	---	---	---	---	---	---	**0.61**	---	---	---	---	---	---	---	---	---
	17-Aug-2012		37	7.45	< 0.0030	< 0.0030	< 2.0	---	---	---	---	---	---	**2.3**	---	---	---	---	---	---	---	---	---
	21-Aug-2013		30	---	0.0075	< 0.0030	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Jul-2014		7.5	---	0.029	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Jun-2016		36	7.90	---	---	**11**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS SW03	20-Aug-2009	**W-CAT-6**	19	8.18	0.26	**0.073**	< 2	---	---	---	---	---	---	0.24	---	---	---	---	---	---	---	---	---
	19-Aug-2010		48	7.98	< 0.003	< 0.003	< 2	---	---	---	---	---	---	0.21	---	---	---	---	---	---	---	---	---
	19-Aug-2011		3	6.82	0.04	< 0.03	< 2	---	---	---	---	---	---	0.21	---	---	---	---	---	---	---	---	---
	17-Aug-2012		2.6	7.61	< 0.0030	< 0.0030	< 2.0	---	---	---	---	---	---	0.10	---	---	---	---	---	---	---	---	---
	09-Jun-2016		**1200**	7.90	---	---	**19**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS SW04	09-Sep-2010	**W-CAT-6**	**450**	7.44	0.011	< 0.003	< 2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	19-Aug-2011		**460**	7.88	0.07	< 0.03	< 2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	17-Aug-2012		**500**	8.05	< 0.0030	< 0.0030	< 2.0	---	---	---	---	---	---	0.078	---	---	---	---	---	---	---	---	---
	22-Aug-2013		**390**	---	0.0077	< 0.0030	**19**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2014		**320**	---	0.028	< 0.010	**17**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		**380**	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS SW05	09-Sep-2010	**W-CAT-6**	**1100**	7.79	0.005	< 0.003	< 2	---	---	---	---	---	---	0.06	---	---	---	---	---	---	---	---	---
	19-Aug-2011		**850**	8.00	< 0.003	< 0.003	< 2	---	---	---	---	---	---	0.06	---	---	---	---	---	---	---	---	---
	17-Aug-2012		**1200**	8.22	< 0.0030	< 0.0030	< 2.0	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
	22-Aug-2013		**750**	---	< 0.0030	< 0.0030	**25**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2014		**840**	---	< 0.010	< 0.010	**22**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		88	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Jun-2016		75	8.21	---	---	5.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		140	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2017		73	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS SW06	09-Sep-2010	**W-CAT-6**	160	7.97	0.006	< 0.003	< 2	---	---	---	---	---	---	0.06	---	---	---	---	---	---	---	---	---
	19-Aug-2011		120	7.91	0.021	< 0.003	< 2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	17-Aug-2012		280	8.04	< 0.0030	< 0.0030	< 2.0	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
	23-Aug-2013		210	---	0.0032	< 0.0030	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Jul-2014		91	---	< 0.010	< 0.010	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	07-Aug-2015		120	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2016		190	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS SW07	19-Aug-2011	**W-CAT-6**	**1800**	8.40	0.04	< 0.03	< 2	---	---	---	---	---	---	0.10	---	---	---	---	---	---	---	---	---
	17-Aug-2012		**1600**	8.10	< 0.0030	< 0.0030	< 2.0	---	---	---	---	---	---	0.072	---	---	---	---	---	---	---	---	---
	22-Aug-2013		**1300**	8.00	0.043	< 0.0030	**31**	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
MLS-10-1-7	28-Sep-2010	**W-CAT-3**	**310**	7.74	0.005	< 0.003	3	0.005	0.0025	0.89	< 0.00003	< 0.001	0.0007	< 0.06	< 0.0002	---	< 0.0002	0.0034	0.0018	< 0.0001	< 0.0002	0.0005	< 0.003
(Duplicate)	28-Sep-2010		---	---	---	---	5	0.004	0.0025	0.89	< 0.00003	< 0.001	0.0009	< 0.06	< 0.0002	---	< 0.0002	0.0048	0.0018	< 0.0001	< 0.0002	0.0004	0.004
	19-Aug-2011		**490**	8.24	0.020	< 0.003	< 2	0.010	0.0013	0.99	< 0.00003	< 0.001	0.0016	< 0.06	< 0.0002	---	0.0007	0.0014	< 0.0002	< 0.0001	< 0.0002	0.0002	0.013
(Duplicate)	19-Aug-2011		---	---	---	---	13	< 0.001	0.0018	0.99	0.000008	< 0.001	0.0012	< 0.06	< 0.0002	---	0.0013	0.0010	0.0003	< 0.0001	< 0.0002	< 0.0001	0.004
	17-Aug-2012		**520**	8.23	< 0.0030	< 0.0030	4.8	0.017	0.0013	1.2	< 0.000025	< 0.0010	0.00092	0.71	< 0.00020	---	0.00051	0.00082	< 0.00020	< 0.00010	< 0.00020	0.00010	0.0061
(Duplicate)	17-Aug-2012		---	---	---	---	2.2	0.0061	0.0012	1.2	< 0.000025	< 0.0010	0.0010	0.72	< 0.00020	---	0.00060	0.00085	< 0.00020	< 0.00010	< 0.00020	0.00023	0.0055
	22-Aug-2013		**500**	---	0.061	< 0.015	**23**	< 0.0030	0.0020	1.2	0.000030	< 0.0010	0.0010	0.51	< 0.00020	---	< 0.00020	0.00092	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0031
(Duplicate)	22-Aug-2013		**500**	---	0.035	< 0.015	**24**	< 0.0030	0.0022	1.2	0.000035	< 0.0010	0.00094	0.44	< 0.00020	---	< 0.00020	0.00090	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0030
	29-Jul-2014		**570**	---	< 0.010	< 0.010	9.8	0.0080	0.00061	1.3	< 0.000025	< 0.0010	0.0013	0.44	< 0.00020	---	< 0.00020	0.0010	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0038
(Duplicate)	29-Jul-2014		**550**	---	0.013	< 0.010	13	0.0061	0.00053	1.3	< 0.000020	< 0.0010	0.00084	0.41	< 0.00020	---	< 0.00020	0.00075	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0037

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-5			**11**	**7.7**	**0.2**	**0.06**	**63**	**0.03**	**0.016**	**0.09**	**0.0013**	**0.007**	**0.008**	**14**	**0.051**	**0.00005**	**0.006**	**0.02**	**0.002**	**0.0001**	**0.0008**	**0.506**	**0.022**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS-10-1-7 (cont.)	09-Aug-2015		630	---	< 0.010	< 0.010	---	< 0.0030	0.0011	1.3	< 0.000020	< 0.0010	0.0022	0.82	< 0.00020	---	0.00021	< 0.00050	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0049
(Duplicate)	09-Aug-2015		---	---	---	---	---	< 0.0030	0.0011	1.3	< 0.000020	< 0.0010	0.0022	0.73	< 0.00020	---	0.00024	0.00068	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0090
	04-Aug-2016		630	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	04-Aug-2016		620	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2017		620	---	< 0.10	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Aug-2017		640	---	0.22	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	19-Jul-2018		640	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Jul-2018		640	---	< 0.10	**< 0.10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MLS-10-2-3	29-Sep-2010	**W-CAT-3**	240	7.57	0.005	< 0.003	4	0.006	0.060	1.7	0.00007	0.002	0.0006	< 0.06	< 0.0002	---	< 0.0002	0.0070	0.0004	< 0.0001	< 0.0002	0.0036	0.010
	19-Aug-2011		210	7.98	0.061	0.020	12	0.003	0.0068	2.0	0.00008	< 0.001	0.0022	< 0.06	< 0.0002	---	0.0014	0.011	0.0006	< 0.0001	< 0.0002	0.013	0.004
(Duplicate)	19-Aug-2011		---	---	---	---	8	0.002	0.012	2.1	0.000090	< 0.001	0.0031	< 0.06	< 0.0002	---	0.0017	0.011	0.0008	< 0.0001	< 0.0002	0.014	0.014
	17-Aug-2012		230	7.98	0.077	< 0.0030	< 2.0	0.020	0.011	1.8	< 0.000025	< 0.0010	0.00053	0.77	< 0.00020	---	0.0011	0.0065	< 0.00020	< 0.00010	< 0.00020	0.0077	0.0084
(Duplicate)	17-Aug-2012		---	---	---	---	2.0	0.0029	0.0072	1.9	0.000048	< 0.0010	0.0012	0.26	< 0.00020	---	0.0010	0.0065	0.00024	< 0.00010	< 0.00020	0.0073	0.0099
	23-Aug-2013		200	---	0.13	0.0090	17	0.0054	0.0072	2.0	0.000034	< 0.0010	0.00025	0.49	< 0.00020	---	0.00065	0.0096	0.00028	< 0.00010	< 0.00020	0.0068	0.0035
(Duplicate)	23-Aug-2013		200	---	0.14	0.012	< 10	0.0046	0.0069	2.0	0.000026	< 0.0010	< 0.00020	0.49	< 0.00020	---	0.00041	0.0075	0.00030	< 0.00010	< 0.00020	0.0067	< 0.0030
	29-Jul-2014		180	---	0.043	< 0.010	8.2	0.0045	0.0036	1.9	< 0.000025	< 0.0010	0.00058	0.54	< 0.00020	---	0.00032	0.0054	0.00040	< 0.00010	< 0.00020	0.0043	0.0037
(Duplicate)	29-Jul-2014		180	---	0.043	< 0.010	8.9	0.0050	0.0034	1.9	< 0.000025	< 0.0010	0.0017	0.54	< 0.00020	---	0.00031	0.0065	0.00026	< 0.00010	< 0.00020	0.0042	0.0056
	07-Aug-2015		180	---	0.16	0.011	---	< 0.0030	0.0019	1.5	< 0.000020	< 0.0010	< 0.00020	0.070	< 0.00020	---	0.00022	0.0031	0.00071	< 0.00010	< 0.00020	0.0042	0.0073
(Duplicate)	07-Aug-2015		---	---	---	---	---	< 0.0030	0.0016	1.5	< 0.000020	< 0.0010	< 0.00020	< 0.060	< 0.00020	---	0.00025	0.0032	0.00053	< 0.00010	< 0.00020	0.0041	0.014
	04-Aug-2016		190	---	< 0.010	< 0.010	---	0.0042	0.0019	1.7	< 0.000020	< 0.0010	0.00043	0.25	< 0.00020	---	0.00052	0.0062	0.00027	< 0.00010	< 0.00020	0.0066	0.0067
	16-Aug-2017		240	---	< 0.10	**< 0.10**	---	0.0033	0.0019	2.0	< 0.000020	< 0.0010	< 0.00020	0.74	< 0.00020	---	0.00029	0.0085	0.0013	< 0.00010	< 0.00020	0.0075	0.0058
	19-Jul-2018		260	---	< 0.10	**< 0.10**	8.2	< 0.0030	0.0017	2.0	< 0.000020	< 0.0010	0.00040	1.5	< 0.00020	---	< 0.00020	0.011	0.00058	< 0.00010	< 0.00020	0.0074	0.0038
MLS-12-1	06-Aug-2012	**W-CAT-6**	1600	8.10	0.023	< 0.0030	< 2.0	< 0.010	0.0027	0.15	0.000069	**< 0.010**	< 0.0020	0.076	< 0.0020	---	< 0.0020	< 0.0050	**< 0.0020**	**< 0.0010**	**< 0.0020**	0.0012	< 0.030
MLS-13-1-3	18-Sep-2013	**W-CAT-3**	140	7.41	0.050	0.011	10	< 0.0030	0.00068	0.27	0.00040	< 0.0010	0.0022	< 0.060	< 0.00020	---	0.0096	0.024	0.00042	< 0.00010	< 0.00020	0.024	0.011
	29-Jul-2014		160	7.52	< 0.010	0.016	3.9	0.0090	0.00068	0.23	0.00044	< 0.0010	0.0024	0.082	< 0.00020	---	0.0058	0.022	0.00032	< 0.00010	< 0.00020	0.024	0.011
	06-Aug-2015		150	7.36	0.049	0.018	5.3	0.0092	0.00045	0.37	0.00032	< 0.0010	0.0052	< 0.060	< 0.00020	---	0.0065	0.012	0.00095	< 0.00010	< 0.00020	0.025	0.015
	04-Aug-2016		190	7.94	0.024	0.018	6.0	0.0056	0.00049	0.22	0.00023	< 0.0010	0.0022	0.19	< 0.00020	---	0.010	0.015	0.00036	< 0.00010	< 0.00020	0.014	0.0083
	16-Aug-2017		170	---	0.15	< 0.010	5.2	0.0068	0.00050	0.23	0.00024	0.0010	0.0064	< 0.060	< 0.00020	---	0.0063	0.012	0.00035	< 0.00010	< 0.00020	0.027	0.011
	19-Jul-2018		190	---	0.11	< 0.010	---	0.0033	0.00039	0.29	0.00019	0.0011	0.0058	< 0.060	< 0.00020	---	0.0050	0.014	0.00051	< 0.00010	< 0.00020	0.027	0.0075
MLS-13-2-3	08-Aug-2015	**W-CAT-3**	130	7.63	< 0.010	< 0.010	< 2.0	0.0073	0.0019	0.52	0.00012	< 0.0010	0.0029	0.28	< 0.00020	---	0.0070	0.013	0.00048	< 0.00010	< 0.00020	0.016	0.0074
	03-Aug-2016		160	7.96	0.19	0.032	7.3	0.0083	0.0011	0.38	0.000077	< 0.0010	0.0041	< 0.060	< 0.00020	---	0.0052	0.0075	0.00044	< 0.00010	< 0.00020	0.015	0.011
	16-Aug-2017		170	---	0.17	< 0.010	3.2	0.0086	0.00074	0.41	0.00011	< 0.0010	0.0089	< 0.060	< 0.00020	---	0.0043	0.0060	0.00028	< 0.00010	< 0.00020	0.011	0.0095
	19-Jul-2018		68	---	0.25	< 0.010	6.0	0.0057	0.00059	0.25	< 0.000020	< 0.0010	0.0062	< 0.060	< 0.00020	---	0.0036	0.0037	0.00076	< 0.00010	< 0.00020	0.0089	0.0088
MLS-13-3-3	18-Sep-2013	**W-CAT-3**	46	7.60	0.40	0.011	< 2.0	< 0.0030	0.00032	0.46	0.000042	< 0.0010	0.0020	< 0.060	< 0.00020	---	0.00049	0.0038	0.0014	< 0.00010	< 0.00020	0.0024	0.0091
	29-Jul-2014		220	7.54	0.018	< 0.010	4.9	0.0039	0.00035	0.23	0.000047	< 0.0010	0.0017	< 0.060	< 0.00020	---	0.00048	0.0020	0.00033	< 0.00010	< 0.00020	0.0043	0.0072
	07-Aug-2015		290	7.37	0.012	< 0.010	< 2.0	0.0040	0.00036	0.28	0.000081	< 0.0010	0.0017	< 0.060	< 0.00020	---	0.0016	0.017	0.00024	< 0.00010	< 0.00020	0.0047	0.014
	05-Aug-2016		280	7.48	< 0.010	< 0.010	< 2.0	0.0034	< 0.00020	0.17	0.000073	< 0.0010	0.00056	< 0.060	< 0.00020	---	0.00050	0.033	< 0.00020	< 0.00010	< 0.00020	0.0039	0.0072
	16-Aug-2017		370	---	0.018	< 0.010	4.1	< 0.0030	0.00034	0.19	0.000054	< 0.0010	0.00085	< 0.060	< 0.00020	---	0.00054	0.0056	< 0.00020	< 0.00010	< 0.00020	0.0041	0.0072
	19-Jul-2018		410	---	< 0.010	< 0.010	6.2	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---	---
MLS-13-4-3	18-Sep-2013	**W-CAT-1**	12	7.17	< 0.0030	< 0.0030	13	0.027	0.0020	0.37	< 0.000025	< 0.0010	0.00047	4.3	< 0.00020	---	0.0020	0.029	< 0.00020	< 0.00010	< 0.00020	0.0049	0.0089
	29-Jul-2014		5.7	7.31	< 0.010	< 0.010	8.5	0.0088	0.0023	0.26	< 0.000025	< 0.0010	0.0021	1.7	< 0.00020	---	0.00065	0.012	0.00034	< 0.00010	< 0.00020	0.0025	0.0056
	07-Aug-2015		4.8	7.23	< 0.010	< 0.010	< 2.0	0.040	0.0049	0.23	0.000025	< 0.0010	0.00051	7.8	< 0.00020	---	0.00038	0.0089	0.0012	< 0.00010	< 0.00020	0.0031	0.0099
	05-Aug-2016		3.9	7.36	< 0.010	< 0.010	2.5	0.0072	0.0034	0.15	< 0.000020	< 0.0010	0.00040	3.0	< 0.00020	---	0.00052	0.0083	< 0.00020	< 0.00010	< 0.00020	0.0021	0.0067
	16-Aug-2017		3.4	---	< 0.010	< 0.010	4.4	0.0082	0.0065	0.23	< 0.000020	< 0.0010	0.00068	8.1	< 0.00020	---	0.00034	0.0096	< 0.00020	< 0.00010	< 0.00020	0.0034	0.0071
	19-Jul-2018		4.9	---	< 0.10	**< 0.10**	5.3	0.0037	0.0047	0.25	< 0.000020	< 0.0010	0.0018	5.1	< 0.00020	---	0.00025	0.0039	< 0.00020	< 0.00010	< 0.00020	0.0012	0.0080

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-1			**18**	**8.1**	**5.4**	**0.03**	**13**	**0.05**	**0.006**	**0.29**	**0.0020**	**0.007**	**0.012**	**5**	**0.020**	**0.00037**	**0.005**	**0.03**	**0.003**	**0.0100**	**0.020**	**0.040**	**0.030**
W-CAT-3			**314**	**8.5**	**1.8**	**0.06**	**19**	**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.00025**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-5			**11**	**7.7**	**0.2**	**0.06**	**63**	**0.03**	**0.016**	**0.09**	**0.0013**	**0.007**	**0.008**	**14**	**0.051**	**0.00005**	**0.006**	**0.02**	**0.002**	**0.0001**	**0.0008**	**0.506**	**0.022**
W-CAT-6			**49**	**8.3**	**---**	**---**	**9.9**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS-13-9-3	09-Aug-2015	**W-CAT-1**	2.4	7.58	0.081	0.015	< 2.0	0.0030	0.00027	0.021	0.000051	< 0.0010	0.0036	< 0.060	< 0.00020	---	0.0025	0.0091	< 0.00020	< 0.00010	< 0.00020	0.0023	0.0098
	03-Aug-2016		< 1.0	8.00	0.072	< 0.010	< 2.0	0.0053	0.00024	0.024	< 0.000020	< 0.0010	0.0014	< 0.060	< 0.00020	---	0.0028	0.0060	< 0.00020	< 0.00010	< 0.00020	0.0027	0.0059
	16-Aug-2017		1.4	---	0.43	< 0.010	5.5	0.0086	0.00040	< 0.020	0.000020	< 0.0010	0.0046	< 0.060	< 0.00020	---	0.0017	0.0026	< 0.00020	< 0.00010	< 0.00020	0.0023	0.0037
	19-Jul-2018		2.2	---	0.14	< 0.010	---	**3.7**	0.0020	< 0.020	0.00053	0.0065	**0.024**	**11**	0.012	---	0.00025	**0.023**	< 0.00020	< 0.00010	< 0.00020	0.0024	**0.090**
MLS-14-2-3	30-Jul-2014	**W-CAT-5**	3.9	7.22	< 0.010	< 0.010	**64**	0.0084	0.0015	0.045	0.00013	< 0.0010	0.0016	1.6	< 0.00020	---	0.00037	0.0054	0.00062	< 0.00010	< 0.00020	0.00095	0.0067
	08-Aug-2015		3.6	7.41	< 0.010	0.025	28	< 0.0030	0.0021	0.070	< 0.000020	< 0.0010	< 0.00020	0.86	< 0.00020	---	0.00047	0.0040	**0.0023**	< 0.00010	< 0.00020	0.0013	< 0.0030
	03-Aug-2016		6.7	7.46	0.016	< 0.010	27	0.016	**0.019**	**0.12**	< 0.000020	< 0.0010	0.00038	8.9	0.00032	---	0.0011	0.020	0.00032	< 0.00010	< 0.00020	0.00086	0.0075
	16-Aug-2017		2.0	---	< 0.010	< 0.010	35	0.019	0.0098	0.032	< 0.000020	< 0.0010	0.00062	**19**	< 0.00020	---	0.00051	0.011	0.00021	< 0.00010	< 0.00020	0.00040	0.0073
	19-Jul-2018		1.6	---	< 0.010	< 0.010	---	0.029	**0.017**	0.038	< 0.000020	< 0.0010	0.00067	10	< 0.00020	---	0.00027	0.010	0.00021	< 0.00010	< 0.00020	0.00096	0.0086
MLS-14-3-3	30-Jul-2014	**W-CAT-1**	18	7.87	< 0.010	< 0.010	13	0.021	0.00074	0.098	0.000024	< 0.0010	0.0013	0.22	< 0.00020	---	0.0013	0.0044	0.00041	< 0.00010	< 0.00020	0.0017	< 0.0030
	08-Aug-2015		15	7.66	0.039	< 0.010	< 2.0	< 0.0030	0.0016	0.12	< 0.000020	< 0.0010	< 0.00020	0.70	< 0.00020	---	0.00072	0.0027	0.00037	< 0.00010	< 0.00020	0.0015	0.0066
	03-Aug-2016		17	7.89	0.16	< 0.010	3.7	0.0039	0.00044	0.17	0.000034	< 0.0010	0.0010	< 0.060	< 0.00020	---	0.00045	0.0020	< 0.00020	< 0.00010	< 0.00020	0.0016	0.0064
MLS-14-3-SW	16-Aug-2017	**W-CAT-6**	2.9	---	0.010	< 0.010	**19**	0.038	0.0011	< 0.020	0.000036	< 0.0010	0.0034	0.11	< 0.00020	---	0.00047	0.0024	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0063
MLS-14-4-3	30-Jul-2014	**W-CAT-1**	13	8.06	0.014	< 0.010	3.8	0.012	0.00040	0.079	< 0.000020	< 0.0010	0.0037	< 0.060	< 0.00020	---	0.0019	0.0010	0.00042	< 0.00010	< 0.00020	0.0024	< 0.0030
	08-Aug-2015		**19**	7.79	0.012	< 0.010	< 2.0	< 0.0030	0.00045	0.17	< 0.000020	< 0.0010	< 0.00020	< 0.060	< 0.00020	---	0.0017	0.0052	0.00034	< 0.00010	< 0.00020	0.0022	< 0.0030
	03-Aug-2016		**24**	**8.11**	0.12	< 0.010	5.8	0.0053	0.00058	0.21	< 0.000020	< 0.0010	0.00053	< 0.060	< 0.00020	---	0.00074	0.0017	< 0.00020	< 0.00010	< 0.00020	0.0019	0.0036
(Duplicate)	03-Aug-2016		**26**	8.09	0.087	< 0.010	2.8	0.0038	0.00050	0.20	< 0.000020	< 0.0010	0.00062	< 0.060	< 0.00020	---	0.00073	0.0018	< 0.00020	< 0.00010	< 0.00020	0.0019	0.0055
MLS-14-4-SW	16-Aug-2017	**W-CAT-6**	2.2	---	< 0.010	< 0.010	**16**	0.023	0.0015	< 0.020	0.000033	< 0.0010	0.0015	0.15	0.00022	---	0.00027	0.0019	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0066
(Duplicate)	16-Aug-2017		2.2	---	< 0.010	< 0.010	**17**	0.021	0.0015	< 0.020	0.000021	**0.026**	0.00094	0.24	< 0.00020	---	0.00056	0.0098	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0053
MLS-14-5-4	30-Jul-2014	**W-CAT-3**	130	7.85	0.59	< 0.010	3.0	0.0061	0.00038	0.22	0.00014	0.0011	**0.045**	< 0.060	< 0.00020	---	0.0016	0.0041	0.0018	< 0.00010	< 0.00020	0.0038	0.011
	08-Aug-2015		110	7.73	0.025	< 0.010	< 2.0	< 0.0030	0.00052	0.24	< 0.000020	< 0.0010	0.00022	0.099	< 0.00020	---	0.00076	0.0025	< 0.00020	< 0.00010	< 0.00020	0.0031	0.0068
	03-Aug-2016		100	7.83	0.085	< 0.010	3.2	0.0042	0.00060	0.25	< 0.000020	< 0.0010	< 0.00020	0.16	< 0.00020	---	0.00070	0.0026	< 0.00020	< 0.00010	< 0.00020	0.0034	0.0083
	16-Aug-2017		110	---	0.010	< 0.010	3.5	0.0036	0.00061	0.25	< 0.000020	< 0.0010	0.0013	0.82	< 0.00020	---	0.00063	0.0036	< 0.00020	< 0.00010	< 0.00020	0.0034	**0.039**
	19-Jul-2018		120	---	0.17	< 0.010	---	< 0.0030	0.00072	0.28	< 0.000020	< 0.0010	0.00056	1.0	< 0.00020	---	0.00083	0.0043	< 0.00020	< 0.00010	< 0.00020	0.0044	0.0080
MLS-14-8-3	29-Jul-2014	**W-CAT-1**	2.8	7.94	0.017	< 0.010	5.7	0.0055	0.00083	0.11	0.000063	< 0.0010	0.0020	0.21	< 0.00020	---	0.0011	0.0022	< 0.00020	< 0.00010	< 0.00020	0.0016	0.0039
	04-Aug-2016		8.7	7.65	0.021	0.012	7.8	0.0051	0.0044	0.20	0.000058	< 0.0010	0.00064	< 0.060	0.00023	---	0.00082	0.0055	< 0.00020	< 0.00010	< 0.00020	0.0028	0.0066
MLS-14-8-SW	21-Aug-2017	**W-CAT-6**	4.5	---	< 0.010	< 0.010	**13**	---	---	---	---	---	---	0.45	---	---	---	---	---	---	---	---	---
MLS-14-9-3	04-Aug-2016	**W-CAT-1**	**23**	**8.27**	0.32	< 0.010	3.3	0.0051	0.0032	0.28	< 0.000020	< 0.0010	0.00029	0.88	< 0.00020	---	0.00098	0.0029	0.00073	< 0.00010	< 0.00020	0.0019	0.0044
MLS-14-9-SW	16-Aug-2017	**W-CAT-6**	1.9	---	< 0.010	< 0.010	**21**	0.0092	0.0026	0.027	< 0.000020	< 0.0010	0.0011	0.48	< 0.00020	---	0.0016	0.0025	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0048

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-1: Mainland Locations - Surficial Sediments - 95th Percentile Background
W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background
W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background
W-CAT-5: Surficial Sediments - Natural Gas & Non-Saline Water Seepage - 95th Percentile Background
W-CAT-6: Mainland Surface Water - 95th Percentile Background

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Table 4
Water Analytical Results: Total Metals

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Total Metals														
			Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-6			**0.85**	**0.007**	**0.04**	**0.00013**	**0.010**	**0.005**	**31.4**	**0.002**	**0.011**	**0.007**	**0.002**	**---**	**0.002**	**0.005**	**0.04**
MLS 97-12-4	15-Jul-1997	**W-CAT-3**	0.38	**< 0.04**	0.15	< 0.002	0.008	< 0.002	0.61	< 0.03	< 0.004	< 0.01	**< 0.03**	**< 0.03**	< 0.03	---	< 0.01
MLS SW01	19-Aug-2010	**W-CAT-6**	0.005	0.0009	0.24	< 0.000005	< 0.001	0.0005	0.09	< 0.0002	0.0003	0.0006	< 0.0002	< 0.0001	< 0.0002	0.0002	< 0.003
	19-Aug-2011		0.58	0.003	0.18	< 0.00005	< 0.01	< 0.002	1.4	< 0.002	< 0.002	< 0.005	< 0.002	**< 0.001**	< 0.002	< 0.001	< 0.03
	17-Aug-2012		0.0084	0.0016	0.16	< 0.000025	< 0.0010	0.00042	0.093	< 0.00020	0.00061	0.00054	< 0.00020	< 0.00010	< 0.00020	0.00041	0.0058
	23-Aug-2013		0.0087	0.0015	0.16	< 0.000025	< 0.0010	0.00034	0.077	< 0.00020	0.00029	< 0.00050	0.00023	< 0.00010	< 0.00020	0.00023	< 0.0030
	29-Jul-2014		0.090	0.0024	0.16	0.000025	< 0.0010	0.00075	0.45	< 0.00020	0.00041	0.0012	< 0.00020	< 0.00010	< 0.00020	0.00022	0.018
	09-Aug-2015		8.1	0.012	0.16	0.00026	0.016	0.023	22	0.0095	0.0019	0.030	0.00063	< 0.00010	< 0.00020	0.0029	0.097
	04-Aug-2016		0.049	0.0095	0.059	0.000022	< 0.0010	0.00057	1.0	< 0.00020	0.00074	0.0022	0.00026	< 0.00010	< 0.00020	0.00032	0.0041
MLS SW02	19-Aug-2010	**W-CAT-6**	0.025	0.0019	< 0.02	< 0.000005	< 0.001	0.0008	3.5	< 0.0002	< 0.0002	0.0017	< 0.0002	< 0.0001	< 0.0002	< 0.0001	0.003
	19-Aug-2011		0.79	0.005	0.11	0.00016	< 0.01	0.005	11	< 0.002	< 0.002	0.008	< 0.002	**< 0.001**	< 0.002	0.001	0.04
	17-Aug-2012		0.15	0.0048	< 0.020	< 0.000025	< 0.0010	0.0017	33	0.00028	0.00031	0.0043	< 0.00020	< 0.00010	< 0.00020	0.00011	0.015
	21-Aug-2013		0.15	0.0066	< 0.020	< 0.000025	< 0.0010	0.0019	13	0.00040	0.00098	0.0059	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0093
	30-Jul-2014		0.069	0.0013	< 0.020	< 0.000020	< 0.0010	0.00075	1.5	< 0.00020	0.00031	0.0025	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.015
	09-Aug-2015		0.071	0.0017	< 0.020	< 0.000020	< 0.0010	0.00040	5.4	< 0.00020	< 0.00020	0.0018	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0035
MLS SW03	20-Aug-2009	**W-CAT-6**	0.10	0.001	0.06	< 0.00003	< 0.005	< 0.001	0.38	< 0.001	< 0.001	< 0.003	< 0.001	**< 0.0005**	< 0.001	< 0.0005	< 0.02
	19-Aug-2010		0.020	0.0028	< 0.02	< 0.000005	< 0.001	0.0007	0.67	< 0.0002	< 0.0002	0.0021	< 0.0002	< 0.0001	< 0.0002	0.0003	< 0.003
	19-Aug-2011		0.08	< 0.002	< 0.02	0.00009	< 0.01	< 0.002	0.84	< 0.002	< 0.002	< 0.005	< 0.002	**< 0.001**	< 0.002	< 0.001	0.04
	17-Aug-2012		0.012	0.00059	< 0.020	< 0.000025	< 0.0010	0.00047	0.96	< 0.00020	< 0.00020	0.00068	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.012
MLS SW04	09-Sep-2010	**W-CAT-6**	0.085	0.0005	0.04	0.00006	0.001	0.0015	0.44	< 0.0002	0.0013	0.0080	0.0009	< 0.0001	< 0.0002	0.0067	0.006
	19-Aug-2011		0.02	0.004	0.05	< 0.00005	< 0.01	< 0.002	1.4	< 0.002	< 0.002	< 0.005	< 0.002	**< 0.001**	< 0.002	0.004	< 0.03
	17-Aug-2012		0.019	0.0025	0.081	< 0.000025	< 0.0010	0.00056	1.1	< 0.00020	< 0.00020	0.0032	0.00054	< 0.00010	< 0.00020	0.0028	0.013
	22-Aug-2013		0.0049	0.0017	0.041	< 0.000025	< 0.0010	< 0.00020	0.55	< 0.00020	0.00034	0.0024	0.00042	< 0.00010	< 0.00020	0.0037	< 0.0030
	29-Jul-2014		0.079	0.0014	0.045	0.000034	< 0.0010	0.0012	1.1	< 0.00020	0.00063	0.0046	0.00059	< 0.00010	< 0.00020	0.0081	0.0093
	09-Aug-2015		0.027	0.00073	0.028	0.000053	< 0.0010	0.0016	0.63	< 0.00020	0.00090	0.0052	0.00099	< 0.00010	< 0.00020	0.0085	0.0095
MLS SW05	09-Sep-2010	**W-CAT-6**	0.72	0.0010	< 0.02	0.00019	0.003	0.0064	2.0	0.0008	0.0024	0.020	0.0010	< 0.0001	< 0.0002	0.020	0.032
	19-Aug-2011		0.01	< 0.002	< 0.02	< 0.00005	< 0.01	< 0.002	0.10	< 0.002	< 0.002	< 0.005	< 0.002	**< 0.001**	< 0.002	0.012	< 0.03
	17-Aug-2012		0.0072	0.0011	< 0.020	0.000041	< 0.0010	0.0022	0.093	< 0.00020	0.0013	0.0052	0.00063	< 0.00010	< 0.00020	0.0065	0.0056
	22-Aug-2013		0.015	0.00092	< 0.020	< 0.000025	< 0.0010	0.00099	0.078	< 0.00020	0.0010	0.0042	0.00047	< 0.00010	< 0.00020	0.0059	0.0033
	29-Jul-2014		3.5	0.0054	< 0.020	0.0010	0.0057	0.033	10	0.0035	0.0050	0.083	0.0028	< 0.00010	< 0.00020	0.016	0.20
	09-Aug-2015		0.013	0.0017	0.025	0.000033	< 0.0010	0.0010	0.64	< 0.00020	0.0059	0.0035	0.00062	< 0.00010	< 0.00020	0.0016	< 0.0030
	04-Aug-2016		0.079	0.0023	0.025	< 0.000020	< 0.0010	0.00048	1.4	< 0.00020	0.0035	0.0028	0.00063	< 0.00010	< 0.00020	0.0019	< 0.0030
	21-Aug-2017		0.089	0.0014	0.037	< 0.000020	< 0.0010	0.00053	0.54	< 0.00020	0.0052	0.0038	0.00040	< 0.00010	< 0.00020	0.0021	< 0.0030

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Table 4
Water Analytical Results: Total Metals

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Total Metals														
			Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-3			**0.12**	**0.050**	**1.34**	**0.0020**	**0.007**	**0.012**	**2**	**0.030**	**0.009**	**0.02**	**0.004**	**0.0002**	**0.030**	**0.076**	**0.018**
W-CAT-6			**0.85**	**0.007**	**0.04**	**0.00013**	**0.010**	**0.005**	**31.4**	**0.002**	**0.011**	**0.007**	**0.002**	**---**	**0.002**	**0.005**	**0.04**
MLS SW06	09-Sep-2010	**W-CAT-6**	0.21	0.0037	**0.08**	0.00005	0.002	0.0011	0.65	0.0004	0.0010	0.0029	0.0003	< 0.0001	< 0.0002	0.0013	0.006
	19-Aug-2011		< 0.01	0.003	**0.07**	< 0.00005	< 0.01	< 0.002	0.11	< 0.002	< 0.002	< 0.005	< 0.002	**< 0.001**	< 0.002	< 0.001	< 0.03
	17-Aug-2012		0.13	0.0013	**0.38**	0.000034	< 0.0010	0.0033	0.30	< 0.00020	0.0061	0.0028	0.00044	< 0.00010	< 0.00020	0.011	0.0045
	23-Aug-2013		0.081	0.0019	**0.30**	0.000028	< 0.0010	0.0025	0.11	0.00020	0.0058	0.0025	0.00047	< 0.00010	< 0.00020	**0.0075**	< 0.0030
	29-Jul-2014		0.047	0.0022	**0.045**	< 0.000020	< 0.0010	0.00035	0.15	< 0.00020	0.00057	0.00075	< 0.00020	< 0.00010	< 0.00020	0.00019	0.0070
MLS SW07	19-Aug-2011	**W-CAT-6**	0.01	0.003	**0.18**	< 0.00005	< 0.01	< 0.002	0.14	< 0.002	< 0.002	< 0.005	< 0.002	**< 0.001**	< 0.002	0.002	< 0.03
	17-Aug-2012		0.0099	0.0025	**0.14**	< 0.000025	< 0.0010	0.0010	0.10	< 0.00020	0.0014	0.0013	0.00030	< 0.00010	< 0.00020	0.0012	0.0049
	22-Aug-2013		0.083	0.0025	**0.13**	< 0.000025	< 0.0010	0.00095	0.27	< 0.00020	0.0017	0.0020	0.00029	< 0.00010	< 0.00020	0.0014	< 0.0030
MLS-12-1	06-Aug-2012	**W-CAT-6**	0.50	0.0043	**0.15**	0.000078	< 0.010	0.0023	1.5	< 0.0020	< 0.0020	< 0.0050	< 0.0020	**< 0.0010**	< 0.0020	0.0013	< 0.030
MLS-14-3-SW	16-Aug-2017	**W-CAT-6**	0.25	0.0013	< 0.020	0.000046	< 0.0010	0.0028	0.47	0.00021	0.00049	0.0029	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.039
MLS-14-4-SW	16-Aug-2017	**W-CAT-6**	0.034	0.0017	< 0.020	< 0.000020	< 0.0010	0.0010	0.26	< 0.00020	0.00036	0.0026	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0053
(Duplicate)	16-Aug-2017		0.038	0.0016	< 0.020	< 0.000020	< 0.0010	0.0016	0.24	< 0.00020	0.00028	0.0027	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0070
MLS-14-8-SW	21-Aug-2017	**W-CAT-6**	0.064	0.0027	0.021	< 0.000020	< 0.0010	0.0013	0.63	< 0.00020	0.00048	0.0024	0.00026	< 0.00010	< 0.00020	0.00011	< 0.0030
MLS-14-9-SW	16-Aug-2017	**W-CAT-6**	0.016	0.0028	0.023	< 0.000020	< 0.0010	0.00077	0.63	< 0.00020	0.0016	0.0023	0.00020	< 0.00010	< 0.00020	< 0.00010	< 0.0030

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background
W-CAT-6: Mainland Surface Water - 95th Percentile Background

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH								
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**	**0.00010**	**0.000010**	**0.000009**	**0.0000075**	**0.00004**	**0.00005**	**0.0001**	**0.00008**	**0.000036**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**	**0.00016**	**0.000049**	**0.000038**	**0.0000127**	**0.00030**	**0.0002**	**0.0035**	**0.00042**	**0.00022**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS 02-10-8	22-Aug-2002	**W-CAT-3**	< 0.0005	< 0.0005	< 0.0005	0.0022	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		< 0.0005	< 0.0005	< 0.0005	(0.0010-0.0015)	< 0.1	---	---	---	---	---	---	---	---	---	---
	24-Aug-2004		< 0.0005	< 0.0005	< 0.0005	(0.00060-0.0011)	< 0.1	0.3	---	---	---	---	---	---	---	---	---
(Duplicate)	24-Aug-2004		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	0.2	---	---	---	---	---	---	---	---	---
	27-Aug-2005		< 0.0005	< 0.0005	< 0.0005	< 0.0015	< 0.1	0.2	---	---	---	---	---	---	---	---	---
	22-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	0.108	0.2	---	---	---	---	---	---	---	---	---
	22-Aug-2007		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2008		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.3	---	---	---	---	---	---	---	---	---
	19-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.3	---	---	---	---	---	---	---	---	---
	19-Aug-2010		< 0.0004	< 0.0004	< 0.0004	0.0008	< 0.1	0.2	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
(Duplicate)	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
MLS 02-5-8	22-Aug-2002	**W-CAT-3**	0.0006	< 0.0005	< 0.0005	0.0060	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		0.0006	< 0.0005	< 0.0005	(0.0022-0.0027)	0.4	---	---	---	---	---	---	---	---	---	---
	24-Aug-2004		0.0005	< 0.0005	< 0.0005	< 0.001	0.5	1.9	---	---	---	---	---	---	---	---	---
	27-Aug-2005		0.0006	< 0.0005	< 0.0005	(0.0010-0.0015)	0.43	0.4	---	---	---	---	---	---	---	---	---
	22-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	0.243	0.4	---	---	---	---	---	---	---	---	---
	22-Aug-2007		0.0016	< 0.0004	< 0.0004	0.0034	0.379	0.2	---	---	---	---	---	---	---	---	---
	19-Aug-2008		< 0.0004	< 0.0004	< 0.0004	< 0.0008	0.27	0.4	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2008		< 0.0004	< 0.0004	< 0.0004	< 0.0008	0.26	0.3	---	---	---	---	---	---	---	---	---
	19-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.3	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.4	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	0.31	0.34	---	---	---	---	---	---	---	---	---
MLS 02-6-9	22-Aug-2002	**W-CAT-3**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	26-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2004		< 0.0005	< 0.0005	< 0.0005	< 0.001	0.2	0.2	---	---	---	---	---	---	---	---	---
	27-Aug-2005		< 0.0005	< 0.0005	< 0.0005	< 0.0015	0.21	0.2	---	---	---	---	---	---	---	---	---
	22-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	22-Aug-2007		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH								
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**	**0.00010**	**0.000010**	**0.000009**	**0.0000075**	**0.00004**	**0.00005**	**0.0001**	**0.00008**	**0.000036**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**	**0.00016**	**0.000049**	**0.000038**	**0.0000127**	**0.00030**	**0.0002**	**0.0035**	**0.00042**	**0.00022**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS 02-7-7	22-Aug-2002	**W-CAT-3**	0.28	0.043	< 0.0050	0.0054	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2004		0.193	0.0241	< 0.0050	< 0.01	0.2	0.3	---	---	---	---	---	---	---	---	---
	27-Aug-2005		0.26	0.0430	0.0022	0.0096	< 0.1	0.4	---	---	---	---	---	---	---	---	---
	22-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	0.205	0.4	---	---	---	---	---	---	---	---	---
	22-Aug-2007		0.322	0.0401	0.0031	0.0130	< 0.1	0.6	---	---	---	---	---	---	---	---	---
	19-Aug-2008		0.22	0.011	0.0016	0.0074	< 0.1	0.5	---	---	---	---	---	---	---	---	---
	19-Aug-2010		0.065	0.0026	0.0008	0.0031	< 0.1	0.4	---	---	---	---	---	---	---	---	---
	19-Aug-2011		0.042	0.0014	0.0004	0.0021	< 0.1	0.2	---	---	---	---	---	---	---	---	---
	29-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
MLS 02-8-8	22-Aug-2002	**W-CAT-3**	0.0069	0.0010	< 0.0005	0.0013	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		0.0864	0.0204	0.0010	0.0044	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2004		0.176	0.0256	< 0.0050	(0.0073-0.0123)	0.7	0.4	---	---	---	---	---	---	---	---	---
	27-Aug-2005		0.0779	0.0126	0.0006	0.004	0.17	0.4	---	---	---	---	---	---	---	---	---
(Duplicate)	27-Aug-2005		0.0742	0.0117	0.0006	0.0039	0.15	0.3	---	---	---	---	---	---	---	---	---
	22-Aug-2006		0.0121	0.0015	< 0.0005	< 0.001	0.133	0.3	---	---	---	---	---	---	---	---	---
(Duplicate)	22-Aug-2006		0.0195	0.0026	< 0.0005	< 0.001	0.156	0.3	---	---	---	---	---	---	---	---	---
	22-Aug-2007		0.184	0.0153	< 0.0004	0.0022	< 0.1	0.5	---	---	---	---	---	---	---	---	---
	19-Aug-2008		0.07	0.0038	< 0.0004	0.0014	0.12	0.7	---	---	---	---	---	---	---	---	---
	19-Aug-2009		0.074	0.0049	< 0.0004	0.0028	0.14	0.3	---	---	---	---	---	---	---	---	---
	19-Aug-2010		0.062	0.0030	< 0.0004	0.0023	< 0.1	0.3	---	---	---	---	---	---	---	---	---
	19-Aug-2011		0.024	0.0012	< 0.0004	< 0.0008	0.14	0.3	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2011		0.024	0.0013	< 0.0004	< 0.0008	< 0.1	0.2	---	---	---	---	---	---	---	---	---
	17-Aug-2012		0.05	0.0018	0.00072	0.0024	< 0.1	0.28	---	---	---	---	---	---	---	---	---
(Duplicate)	17-Aug-2012		0.048	0.0018	0.00068	0.0023	< 0.1	0.21	---	---	---	---	---	---	---	---	---
	07-Aug-2015		0.0069	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.38	---	---	---	---	---	---	---	---	---
(Duplicate)	07-Aug-2015		0.0065	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.40	---	---	---	---	---	---	---	---	---
	04-Aug-2016		0.058	0.0019	0.00054	0.0032	< 0.1	0.25	---	---	---	---	---	---	---	---	---
(Duplicate)	04-Aug-2016		0.06	0.0019	0.00058	0.0034	< 0.1	0.28	---	---	---	---	---	---	---	---	---
	16-Aug-2017		0.069	0.0016	< 0.00040	0.0027	0.23	0.34	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Aug-2017		0.064	0.0015	< 0.00040	0.0024	0.13	0.34	---	---	---	---	---	---	---	---	---
MLS 02-9-8	22-Aug-2002	**W-CAT-3**	0.022	0.0034	< 0.0005	0.0022	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		0.0116	0.0012	< 0.0005	(0.0010-0.0015)	< 0.1	---	---	---	---	---	---	---	---	---	---
	24-Aug-2004		0.0058	< 0.0005	< 0.0005	(0.0016-0.0021)	0.3	0.5	---	---	---	---	---	---	---	---	---
	27-Aug-2005		0.0611	0.0052	0.0005	(0.0020-0.0025)	0.31	0.4	---	---	---	---	---	---	---	---	---
	22-Aug-2006		0.0067	< 0.0005	< 0.0005	< 0.001	0.111	0.2	---	---	---	---	---	---	---	---	---
	22-Aug-2007		0.0595	0.0120	< 0.0004	0.0112	< 0.1	0.4	---	---	---	---	---	---	---	---	---
	19-Aug-2008		0.0037	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.2	---	---	---	---	---	---	---	---	---

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH								
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**	**0.00010**	**0.000010**	**0.000009**	**0.0000075**	**0.00004**	**0.00005**	**0.0001**	**0.00008**	**0.000036**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**	**0.00016**	**0.000049**	**0.000038**	**0.0000127**	**0.00030**	**0.0002**	**0.0035**	**0.00042**	**0.00022**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS 02-9-8 (cont.)	19-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2010		0.0018	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2010		0.0022	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		0.0027	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---
	17-Aug-2012		0.00058	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.14	---	---	---	---	---	---	---	---	---
MLS 08-1-4	19-Aug-2008	**W-CAT-3**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	18-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
MLS 08-2-5	19-Aug-2008	**W-CAT-3**	0.0037	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.7	---	---	---	---	---	---	---	---	---
	19-Aug-2009		0.0058	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.2	---	---	---	---	---	---	---	---	---
	19-Aug-2010		0.0045	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.2	---	---	---	---	---	---	---	---	---
	19-Aug-2011		0.0030	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---
	18-Aug-2012		0.0034	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.15	---	---	---	---	---	---	---	---	---
MLS 08-3-4	19-Aug-2008	**W-CAT-3**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	18-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
MLS 09-1-3	19-Aug-2009	**W-CAT-3**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.7	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	21-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	29-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
MLS 09-2-3	19-Aug-2009	**W-CAT-3**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	21-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	29-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH								
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**	**0.00010**	**0.000010**	**0.000009**	**0.0000075**	**0.00004**	**0.00005**	**0.0001**	**0.00008**	**0.000036**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**	**0.00016**	**0.000049**	**0.000038**	**0.0000127**	**0.00030**	**0.0002**	**0.0035**	**0.00042**	**0.00022**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS 09-3-3	19-Aug-2009	**W-CAT-3**	0.07	0.0081	0.0005	0.0041	0.15	0.5	---	---	---	---	---	---	---	---	---
	19-Aug-2010		0.027	0.011	0.0019	0.02	< 0.1	0.5	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2010		0.031	0.012	0.0023	0.021	< 0.1	0.4	---	---	---	---	---	---	---	---	---
	19-Aug-2011		0.092	0.0077	0.0094	0.019	0.23	0.4	---	---	---	---	---	---	---	---	---
	17-Aug-2012		0.0038	< 0.00040	0.00075	0.00087	< 0.1	0.80	---	---	---	---	---	---	---	---	---
	21-Aug-2013		0.089	0.0022	0.0089	0.0062	0.1	0.28	---	---	---	---	---	---	---	---	---
MLS 09-4-4	19-Aug-2009	**W-CAT-3**	0.51	0.51	0.06	0.26	< 0.1	2.5	---	---	---	---	---	---	---	---	---
	17-Aug-2012		0.1	0.042	0.02	0.065	< 0.1	6.9	---	---	---	---	---	---	---	---	---
	22-Aug-2013		0.0015	< 0.00040	0.00041	< 0.00080	< 0.1	0.61	---	---	---	---	---	---	---	---	---
	29-Jul-2014		0.026	0.00087	0.0087	0.0012	< 0.1	1.4	---	---	---	---	---	---	---	---	---
MLS 09-5-3	19-Aug-2009	**W-CAT-3**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.3	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
MLS 09-6-2	19-Aug-2009	**W-CAT-3**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	---	---	---	---	---	---	---	---	---	---
MLS 09-7-2	19-Aug-2009	**W-CAT-3**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	21-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	30-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
MLS 09-8-2	19-Aug-2010	**W-CAT-3**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
MLS 09-9-2	19-Aug-2009	**W-CAT-3**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
MLS 09-15-3	19-Aug-2010	**W-CAT-3**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	22-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	29-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH								
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**	**0.00010**	**0.000010**	**0.000009**	**0.0000075**	**0.00004**	**0.00005**	**0.0001**	**0.00008**	**0.000036**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**	**0.00016**	**0.000049**	**0.000038**	**0.0000127**	**0.00030**	**0.0002**	**0.0035**	**0.00042**	**0.00022**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS 92-1-3	20-Oct-1998	**W-CAT-3**	< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---
	28-Aug-2001		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2002		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	---	---	---	---	---	---	---	---	---	---
MLS 93-10-6	06-Sep-1997	**W-CAT-3**	< 0.0005	0.0016	< 0.0005	0.0053	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-1999		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2000		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
	28-Aug-2001		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---
MLS 93-13-7	22-Aug-2002	**W-CAT-3**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	22-Aug-2002		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		0.0025	< 0.0004	< 0.0004	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
MLS 93-3-6	28-Aug-2001	**W-CAT-3**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
MLS 93-5-4	28-Aug-2001	**W-CAT-3**	< 0.0005	0.0006	< 0.0005	0.0030	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	28-Aug-2001		0.0006	0.0007	< 0.0005	0.0043	---	---	---	---	---	---	---	---	---	---	---
MLS 93-6-6	18-Sep-1999	**W-CAT-3**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2000		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
	28-Aug-2001		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
MLS 93-7-4	19-Sep-2000	**W-CAT-3**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
	28-Aug-2001		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---
MLS 93-8-7	06-Sep-1997	**W-CAT-3**	0.012	0.0027	< 0.0005	0.005	---	---	---	---	---	---	---	---	---	---	---
	07-Sep-1998		0.0059	0.0009	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-1999		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2000		0.0013	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
	28-Aug-2001		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---
MLS 93-9-6	06-Sep-1997	**W-CAT-3**	< 0.0005	0.0018	< 0.0005	0.0056	---	---	---	---	---	---	---	---	---	---	---
	07-Sep-1998		0.0058	0.0015	< 0.0005	(0.0010-0.0015)	---	---	---	---	---	---	---	---	---	---	---
	18-Sep-1999		0.0021	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	18-Sep-1999		0.0020	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
	19-Sep-2000		0.0047	< 0.0005	< 0.0005	0.0006	---	---	---	---	---	---	---	---	---	---	---
	28-Aug-2001		0.0018	< 0.0005	< 0.0005	(0.00090-0.0014)	---	---	---	---	---	---	---	---	---	---	---

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH								
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**	**0.00010**	**0.000010**	**0.000009**	**0.0000075**	**0.00004**	**0.00005**	**0.0001**	**0.00008**	**0.000036**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**	**0.00016**	**0.000049**	**0.000038**	**0.0000127**	**0.00030**	**0.0002**	**0.0035**	**0.00042**	**0.00022**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS 97-12-4	28-Aug-2001	**W-CAT-3**	< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2005		< 0.0005	< 0.0005	< 0.0005	< 0.0015	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	22-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2008		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
MLS 98-11-2	28-Aug-2001	**W-CAT-3**	< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2002		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---
	26-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2004		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	27-Aug-2005		< 0.0005	< 0.0005	< 0.0005	(0.0020-0.0025)	0.15	< 0.1	---	---	---	---	---	---	---	---	---
MLS SW01	19-Aug-2009	**W-CAT-6**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	0.0005	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	09-Jun-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020
MLS SW02	19-Aug-2009	**W-CAT-6**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	**0.0046**	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	21-Aug-2013		< 0.00040	0.00051	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	30-Jul-2014		< 0.00040	0.00047	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	09-Jun-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020
MLS SW03	20-Aug-2009	**W-CAT-6**	< 0.0004	0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	0.0006	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	09-Jun-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020
MLS SW04	09-Sep-2010	**W-CAT-6**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	22-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	29-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH								
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**	**0.00010**	**0.000010**	**0.000009**	**0.0000075**	**0.00004**	**0.00005**	**0.0001**	**0.00008**	**0.000036**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**	**0.00016**	**0.000049**	**0.000038**	**0.0000127**	**0.00030**	**0.0002**	**0.0035**	**0.00042**	**0.00022**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS SW05	09-Sep-2010	**W-CAT-6**	0.0007	0.0036	0.0011	0.0048	< 0.1	0.2	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	0.0011	< 0.0004	0.0018	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	22-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	29-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	09-Jun-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	< 0.00010	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020
MLS SW06	09-Sep-2010	**W-CAT-6**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	0.0005	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	23-Aug-2013		0.0035	0.0066	0.0014	0.0060	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	29-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	07-Aug-2015		< 0.00040	0.00048	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	04-Aug-2016		< 0.00040	0.00047	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
MLS SW07	19-Aug-2011	**W-CAT-6**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	22-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
MLS-10-1-7	28-Sep-2010	**W-CAT-3**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.7	---	---	---	---	---	---	---	---	---
(Duplicate)	28-Sep-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.4	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.2	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.2	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.19	---	---	---	---	---	---	---	---	---
(Duplicate)	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.18	---	---	---	---	---	---	---	---	---
	22-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.32	---	---	---	---	---	---	---	---	---
(Duplicate)	22-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	0.12	0.25	---	---	---	---	---	---	---	---	---
	29-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.18	---	---	---	---	---	---	---	---	---
(Duplicate)	29-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.19	---	---	---	---	---	---	---	---	---
MLS-10-2-3	29-Sep-2010	**W-CAT-3**	0.0045	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
(Duplicate)	17-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	23-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	29-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
(Duplicate)	29-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH								
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**	**0.00010**	**0.000010**	**0.000009**	**0.0000075**	**0.00004**	**0.00005**	**0.0001**	**0.00008**	**0.000036**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**	**0.00016**	**0.000049**	**0.000038**	**0.0000127**	**0.00030**	**0.0002**	**0.0035**	**0.00042**	**0.00022**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS-13-1-3	18-Sep-2013	**W-CAT-3**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	29-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	06-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	04-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
MLS-13-2-3	08-Aug-2015	**W-CAT-3**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	03-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	16-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	19-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
MLS-13-3-3	18-Sep-2013	**W-CAT-3**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	29-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	07-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	05-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	16-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
MLS-13-4-3	18-Sep-2013	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	29-Jul-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	07-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	05-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	16-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
MLS-13-9-3	09-Aug-2015	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	03-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	16-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	19-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
MLS-14-2-3	30-Jul-2014	**W-CAT-5**	< 0.00040	0.00061	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	08-Aug-2015		< 0.00040	0.00047	< 0.00040	< 0.00080	< 0.1	0.26	---	---	---	---	---	---	---	---	---
	03-Aug-2016		< 0.00040	0.00087	< 0.00040	< 0.00080	< 0.1	0.29	---	---	---	---	---	---	---	---	---
	16-Aug-2017		< 0.00040	**0.024**	< 0.00040	< 0.00080	< 0.10	0.19	---	---	---	---	---	---	---	---	---
	19-Jul-2018		< 0.00040	0.00064	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
MLS-14-3-3	30-Jul-2014	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	08-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	03-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
MLS-14-3-SW	16-Aug-2017	**W-CAT-6**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH								
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-1			**0.0005**	**0.0005**	**0.0005**	**0.0010**	**0.1**	**0.1**	**0.00010**	**0.000010**	**0.000009**	**0.0000075**	**0.00004**	**0.00005**	**0.0001**	**0.00008**	**0.000036**
W-CAT-3			**0.06**	**0.003**	**0.002**	**0.010**	**0.89**	**35**	**0.00053**	**0.000012**	**0.000088**	**0.0000346**	**0.00007**	**0.0016**	**0.0054**	**0.00369**	**0.00026**
W-CAT-5			**0.97**	**0.016**	**0.007**	**0.22**	**0.28**	**2.1**	**0.00016**	**0.000049**	**0.000038**	**0.0000127**	**0.00030**	**0.0002**	**0.0035**	**0.00042**	**0.00022**
W-CAT-6			**0.0004**	**0.00053**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
MLS-14-4-3	30-Jul-2014	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	08-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	03-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
(Duplicate)	03-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
MLS-14-4-SW	16-Aug-2017	**W-CAT-6**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
MLS-14-5-4	30-Jul-2014	**W-CAT-3**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	08-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	03-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	16-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
MLS-14-8-3	29-Jul-2014	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	04-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	**0.15**	---	---	---	---	---	---	---	---	---
MLS-14-8-SW	21-Aug-2017	**W-CAT-6**	< 0.00040	0.00070	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
MLS-14-9-3	04-Aug-2016	**W-CAT-1**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
MLS-14-9-SW	16-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

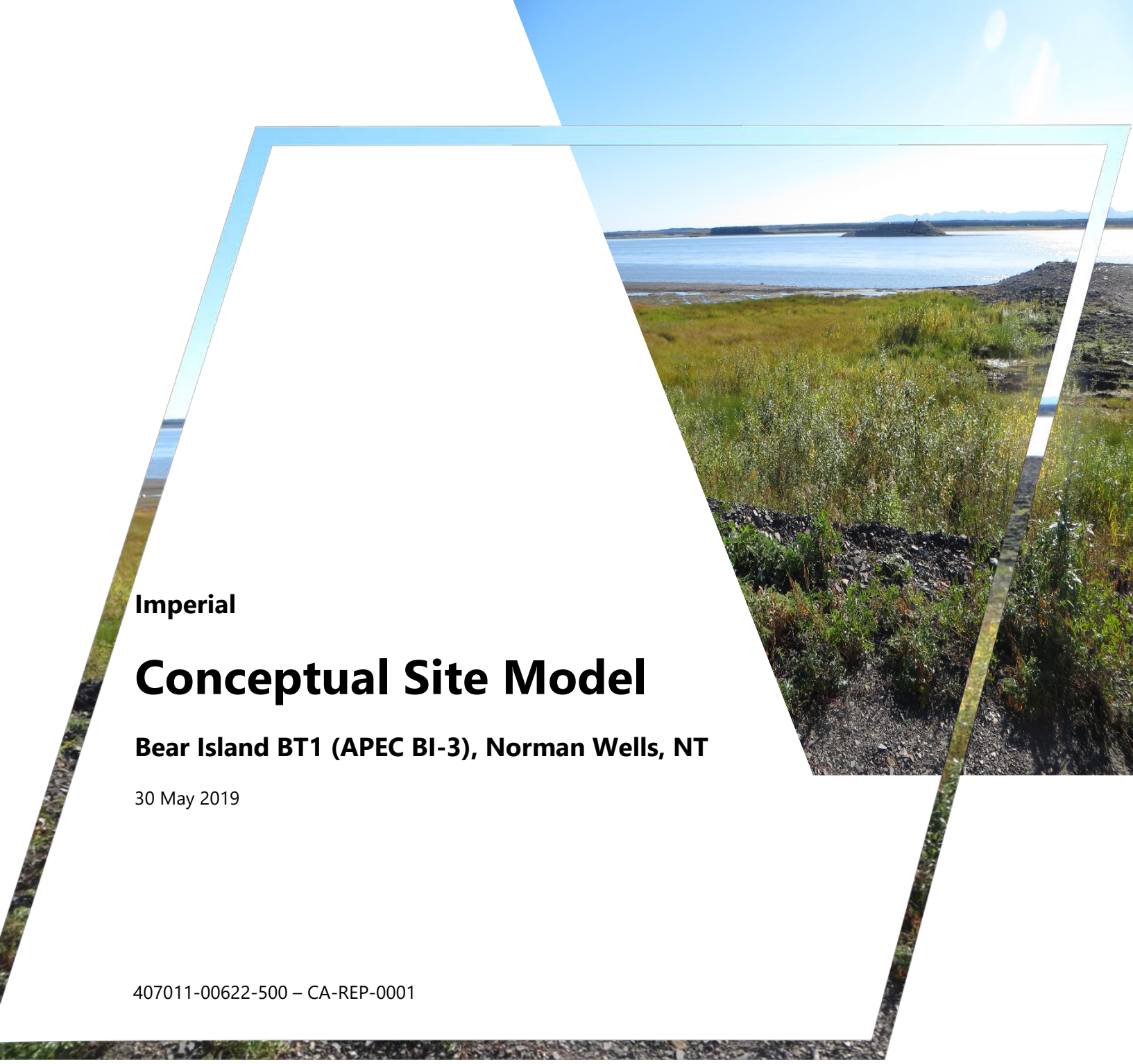
Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-1: Mainland Locations - Surficial Sediments - 95th Percentile Background
W-CAT-3: Shallow Bedrock - Natural Saline Water & Oil Seepage - 95th Percentile Background
W-CAT-4: Surficial Sediments - Natural Saline Water & Oil Seepage - 95th Percentile Background
W-CAT-5: Surficial Sediments - Natural Gas & Non-Saline Water Seepage - 95th Percentile Background
W-CAT-6: Mainland Surface Water - 95th Percentile Background

Appendix 9
Conceptual Site Model: Bear Island BT1



Imperial

Conceptual Site Model

Bear Island BT1 (APEC BI-3), Norman Wells, NT

30 May 2019

407011-00622-500 – CA-REP-0001

Advisian
Suite 500, 151 Canada Olympic Rd SW
Calgary, AB T3B 6B7 CANADA
Phone: +1 403 247 0200
Facsimile: +1 403 247 4811
www.advisian.com

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THIS REPORT CONTAINS PROVISIONS LIMITING LIABILITY, THE SCOPE OF THE REPORT AND THIRD PARTY RELIANCE

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Project No. 407011-00622-500-CA-REP-0001 - Conceptual Site Model: Bear Island BT1 (APEC BI-3), Norman Wells, NT

Rev	Description	Originator Approval	Reviewer Approval	Project Manager Approval	Date
0	Issued as final	L. Glatiotis / A. Haigh	M. Brown	S. Gibb	30-May-19

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1. Conceptual Site Model Summary 1

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Figure 5A Site Plan 3-D Visualization

Figure 5B Cross Section A-A' (North to South)

Figure 5C Cross Section A-A' Soil Exceedances, Organic Parameters

Figure 6A Soil Analytical Results: Inorganic Parameters

Figure 6B Soil Analytical Results: Inorganic Parameters (Former BIBT1 Excavation)

Figure 6C Soil Analytical Results: Organic Parameters

Figure 6D Soil Analytical Results: Organic Parameters (Former BIBT1 Excavation)

Figure 7A Groundwater Analytical Results: Inorganic Parameters

Figure 7B Groundwater Analytical Results: Organic Parameters

Figure 8 Conceptual Site Model

Figure 9 Conceptual Exposure Model, Current Land Use and Site Conditions

Tables

Table 1 Soil Analytical Results: Inorganic Parameters

Table 2 Soil Analytical Results: Organic Parameters

Table 3 Water Analytical Results: Inorganic Parameters

Table 4 Water Analytical Results: Organic Parameters

1. Conceptual Site Model Summary

Site Description

LAND USE	
Site Description:	Access road through site, with cathodic bed north of the road. Above-ground pipeline (utilidor) bounding southern portion of the site (Figure 1).
Current Land Use:	CCME Industrial land use
Future Land Use:	CCME Parkland land use
HISTORICAL LAND USE	
Infrastructure type:	Tank Farm (Figure 2)
Notes:	Crude Oil Storage
Years Active:	From air photos, interpreted to be pre-1971 to approximately 1981 (Figure 2).
SITE SETTING	
Topography and Drainage:	Site slopes to the North/Northwest. Drainage is toward the Mackenzie River flood plain. See Figures 3 and 5A.
Nearby Surface Water Bodies (Distance and Direction):	Mackenzie River (250 m to the North) Bear Island Sump #2 (75 m to the South)
SOIL AND GROUNDWATER CONDITIONS	
Surficial Materials:	Silt, silty clay, silty sand (Figures 5B and 5C)
Depth to Permafrost:	~ 2 to 4 mbgs
Depth to Bedrock:	not encountered to a depth of 7.0 mbgs investigated.
Bedrock Lithology:	not encountered
Number of Groundwater-Bearing Zones:	1
Number of Piezometers:	13 current, 5 historical now destroyed / decommissioned.
Free Product in Upper GW-Bearing Zone:	not encountered
Free Product in Second GW-Bearing Zone:	NA
First Groundwater-Bearing Zone	
Primary Soil Type/Lithology:	Unconsolidated silty sand and silty clay
Dominant Grain Size:	Coarse (assumed porosity n=0.2)

Depth to Groundwater Surface:	~ 1 to 3.5 mbgs
Hydraulic Conductivity (Minimum):	3.7 x 10^{-7} m /s
Hydraulic Conductivity (Maximum):	1.6 x 10^{-6} m/s
Hydraulic Conductivity (Geometric Mean K):	7.7 x 10^{-7} m/s
Vertical Hydraulic Gradient:	Not assessed (underlain by discontinuous permafrost; wells have only been installed in uppermost water-bearing zone).
Lateral Hydraulic Gradient (I):	Typically, I = 0.024, (estimated from fluid level in near-source well BIBT1-10-1-3 of 47.197 m, to unvegetated beach line 240 m away at elevation 41.5 m contour, see top left Figure 3). When river is at mean high water elevation of 42.0 m, this lateral gradient increases to 0.087 (5.2 m over 60 m distance).
Groundwater Flow Direction and Velocity:	Northwest towards Mackenzie River; velocity of a non-reactive tracer estimated at 2.9 m/year (based on v = KI/n) and dissolved PHC velocity 1.3 m/year or less. This estimate is based on the "typical" lateral gradient listed above. The higher gradient noted during river flood stage would only be applicable about 1-2 months per year.

HISTORICAL ENVIRONMENTAL ACTIVITIES

Soil and groundwater characterization (2008 to present; Figure 4).

Remedial excavation - partially complete (2014-2015) with physical limitations due to utilidor south of excavation, active road bed north of excavation, and groundwater seepage in base of excavation. Estimated 4,079 m^3 of impacted soil removed. Backfilled with sand sourced from Island 6 sand bar. Refer to Figures 6A and 6B for excavation outline. The excavated soil is stored on BIT5 located about 500 m to the southwest (Figure 1).

CURRENT STATUS

Remaining soil and groundwater impacts (Figures 6A-D and 7A-B)

Sources and Impacts

SOURCES

Historical Sources:	Tank Farm - Leaks/Spills (APEC # BI-3; Appendix 4).
Current Sources:	Impacted soil (secondary source).

KNOWN ENVIRONMENTAL CONCERNS

a. Soil

Potential Contaminants of Concern:	Petroleum hydrocarbons (PHCs), salinity, metals, PAHs.
Proven Contaminants of Concern:	PHCs - BTEX, PHC F1 to F4G.

	Limited Salinity - at or close to background. Polycyclic Aromatic Hydrocarbons (PAHs).
Lateral Delineation:	PHC issues sufficiently delineated laterally for remedial strategy and risk planning purposes (Figure 6D). Potential gaps to the northwest and southwest not fully delineated. Physical barriers (utilidor, wet ground) and separate APEC (Sump #2) limit delineation to south.
Vertical Delineation:	Vertical delineation of PHC issues has been limited by saturated ground in remedial excavation and limited soil sampling options available locally for saturated sands.
b. Groundwater	
Potential Contaminants of Concern:	Petroleum hydrocarbons, metals, phenols, PAHs, chloride.
Proven Contaminants of Concern:	PHCs - BTEX, PHC F1 to F2. Metals – at or close to background concentrations. Phenols.
Presence of Free Product:	No free phase identified during recent events.
Lateral Delineation:	Delineation is achieved for PHCs in a downgradient direction to the north and northwest (Figure 7B). Lateral delineation for metals or phenols is incomplete, but relates in part to elevated background concentrations particularly for certain metals. Elevated phenols values in groundwater close to the source decrease downgradient and drop below the applied FAL guideline approximately 50 m north of the former tank farm (Figures 7A/B).
Vertical Delineation:	Only the upper groundwater-bearing zone to approximately 4-5 mbgs is currently instrumented. Discontinuous permafrost has been noted in a few local boreholes between 2 and 4 mbgs, and may provide a hydraulic barrier at depth.

Migration Pathways and Receptors

MIGRATION PATHWAYS

Summarized in Figures 8 and 9.

Potential pathways include leaching from soil to groundwater, lateral migration in groundwater, discharge to surface water, shallow vapour migration in soil, water and wind erosion.

RECEPTORS

Summarized in Figures 8 and 9.

Main receptor of interest is the Mackenzie River, in relation to human, wildlife and freshwater aquatic life receptors. Plants and soil invertebrates may also be receptors in the rooting zone of shallow soils.

EXPOSURE PATHWAYS

Summarized in Figures 8 and 9

Synopsis of Conceptual Risk

In terms of soil related exposure pathways, the remedial excavations completed to date have removed most PHC impacted soils underlying the former tank farm footprint to a depth of approximately 2.5 m (Figure 6D). Due to physical obstacles to further excavation including the utilidor, the road bed and the high water table, some residual soil impacts exceeding PHC guidelines remain in place. Risks related to potential exposure pathways for human, ecological, microbial and wildlife contact or ingestion have been reduced by the excavations but not eliminated. The pathway for leaching from soil to groundwater is active, but measured PHC values in groundwater north of the road do not exceed applied parkland guidelines.

In terms of groundwater related exposure pathways, Figure 7B indicates that PHCs exceeding the applied guideline persist under the footprint of the former tank farm, however the PHCs in groundwater have not reached the closest surface water body (Mackenzie River) and associated receptors. The exposure scenario related to groundwater use for drinking water or wildlife watering is considered inactive. The PHC plume is delineated in groundwater approximately 220 m from the typical river shore (excluding the high water mark in flood stage). Typical river shore is assumed to be at approximately the 41.5 m elevation contour, as illustrated in Figures 1 and 5A. Figure 2 is more indicative of near-flood stage conditions, with the river shore in this case being about 40 to 50 m north of the PHC plume as delineated in groundwater.

Limitation of Liability, Scope of Report, and Third Party Reliance

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The investigation undertaken by WorleyParsons with respect to this report and any conclusions or recommendations made in this report reflect WorleyParsons' judgment based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. This report has been prepared for the specific application to this site and it is based, in part, upon visual observation of the site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site, substances addressed by the investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions, and recommendations in this report may be necessary.

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Figures

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-SITEAIRPHOTO2017.DWG

AIR PHOTO SOURCE: PLANET LABS GEOMATICS CORP.,
DATE: APRIL 6 AND 30, 2017

3TM NAD27

m 0 100 200 400 m

1:8000

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BATTERY #1, NORMAN WELLS, NT

SITE LOCATION MAP

Date:	29-MAY-19	Drawn by:	BMF	Edited by:	-	App'd by:	

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FIG No 1

REV B

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SAVE DATE & TIME: 17/5/2019 2:17:59 PM ISSUING OFFICE: eCAD

m 0 50 100 150 m

1:2500

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BT1, NORMAN WELLS, NT

HISTORICAL AIR PHOTO 1979

Date: 06-MAY-19	Drawn by: BMF	Edited by: -	App'd by:

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FIG No 2 | REV A

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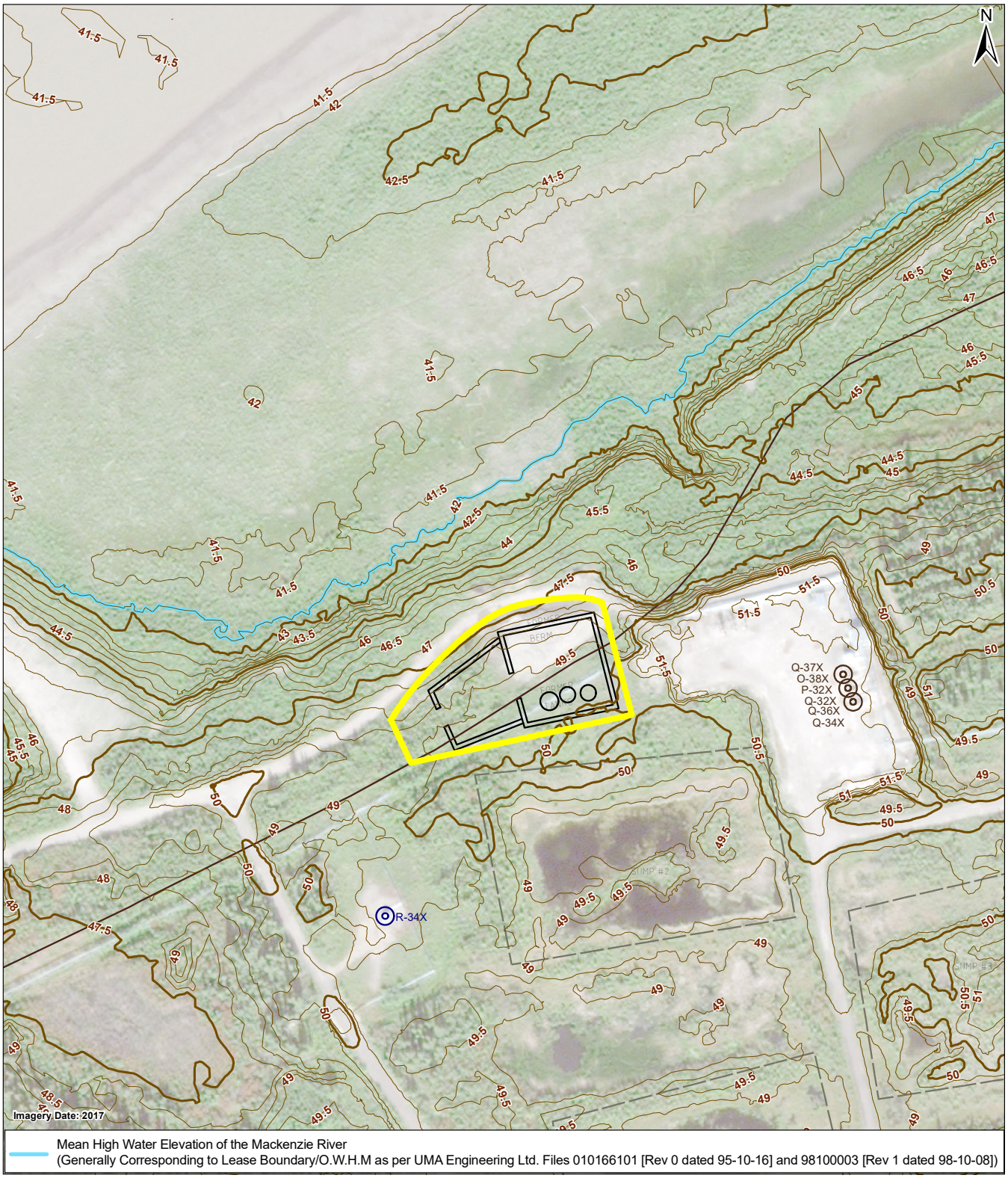

Site Boundary

Elevation Contour (2.5m interval)

Elevation Contour (0.5m interval)

Source:
Airborne Imaging; 2012

0 50 100
Metres
1:2,500

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BT1, NORMAN WELLS, NT

SITE PLAN SHOWING TOPOGRAPHY

Date:	03-MAY-19	Drawn by:	T.G.	Edited by:	T.G.	App'd by:	. .

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FIG No 3

REV A

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SAVE DATE & TIME: 2019-05-03 1:20:15 PM
USER NAME: Tom Graham
ISSUING OFFICE: CALGARY GIS

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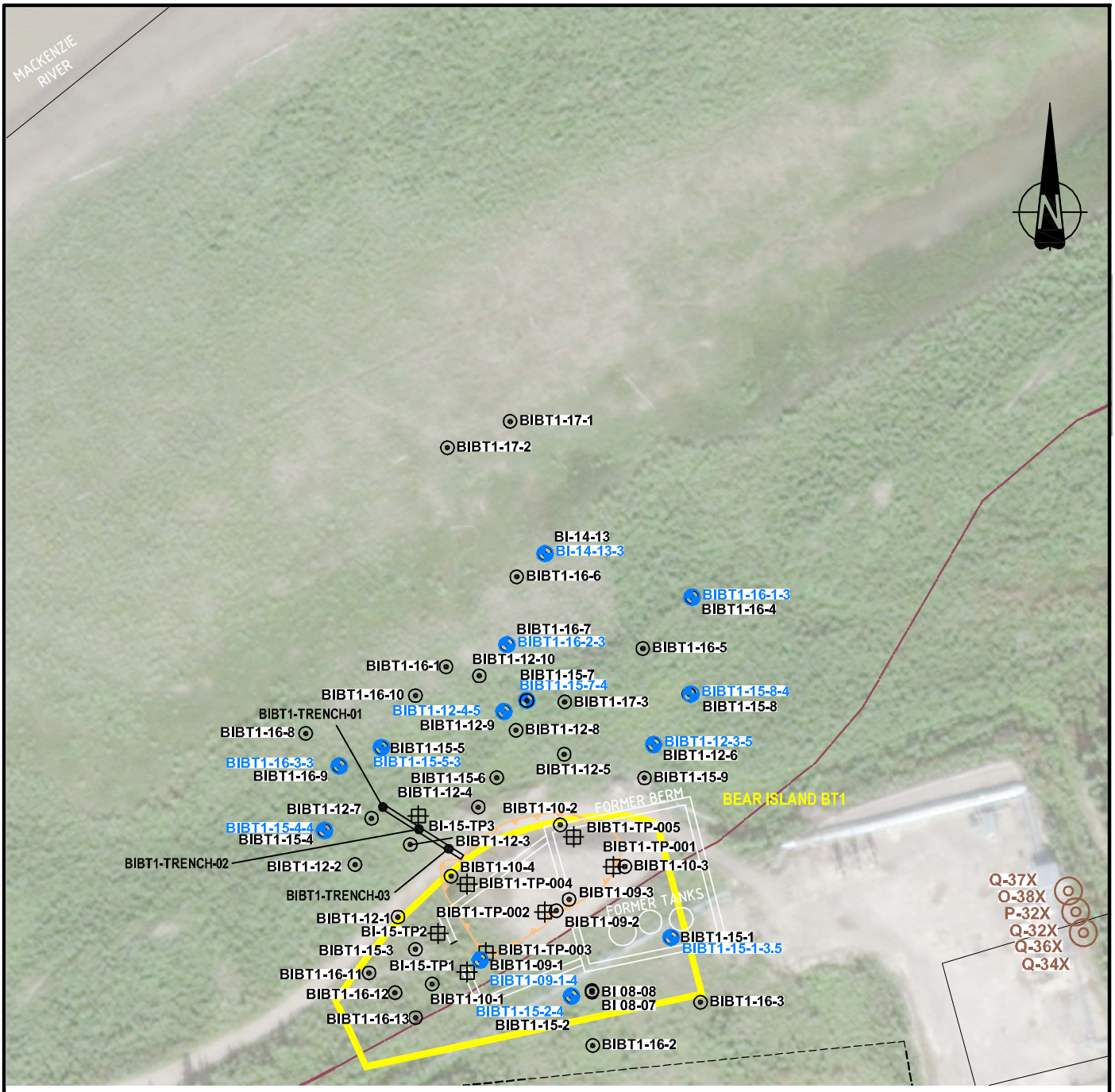

LEGEND

- PRODUCTION WELL LOCATION
- PIPELINE
- MONITORING WELL LOCATION
- SOIL SAMPLING LOCATION
- TEST PIT LOCATION
- 2015 TRENCH
- APPROXIMATE PERIMETER OF FORMER EXCAVATION

SOURCES:

1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 25 50 75 m

1:1750

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BT1, NORMAN WELLS, NT

SITE PLAN SHOWING SAMPLING LOCATIONS

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FIG No: 4

REV: A

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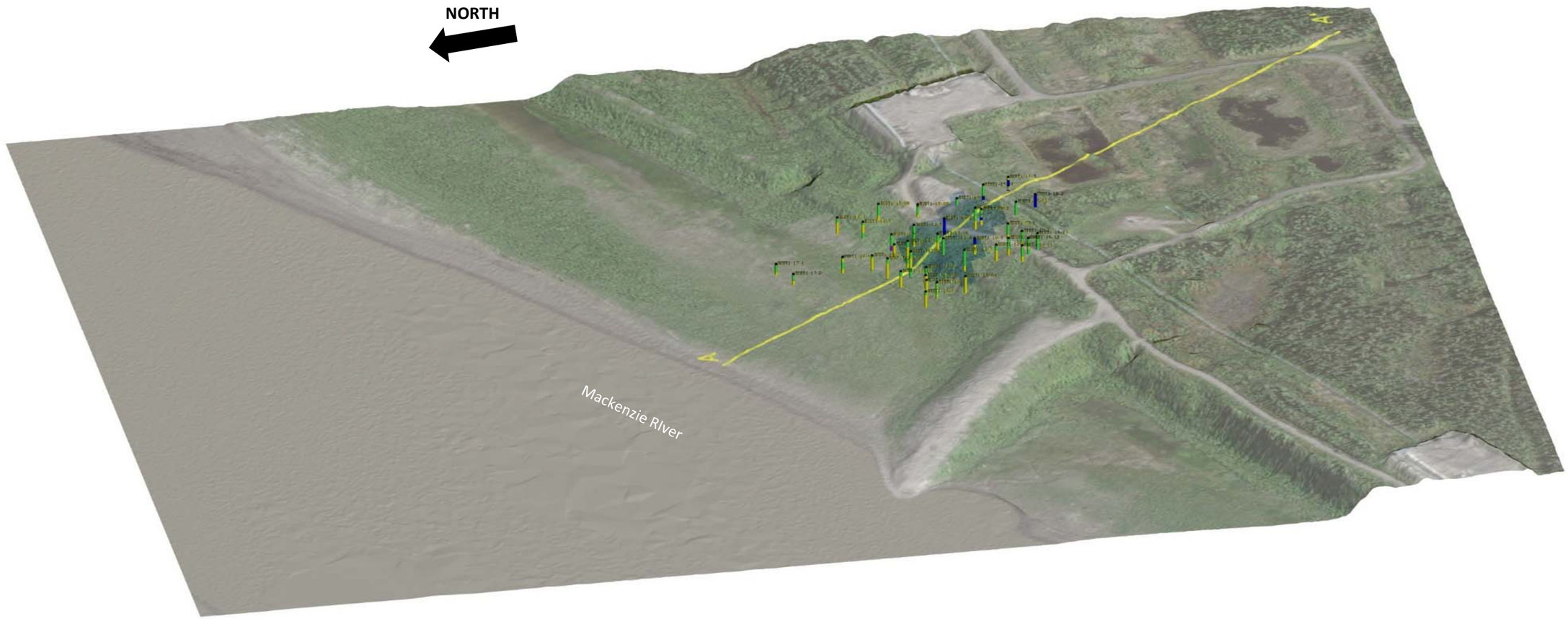

Unit
CLAY
FILL/ORGANICS
NO RECOVERY
PERMAFROST
SAND
SILT

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BT1, NORMAN WELLS, NT

SITE PLAN 3-D VISUALIZATION

Date:	Drawn by:	Edited by:	App'd by:
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FIG No. 5A

REV A

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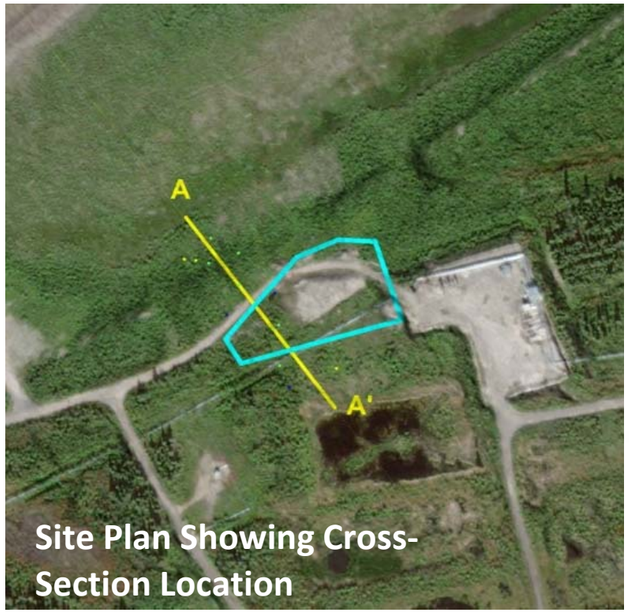
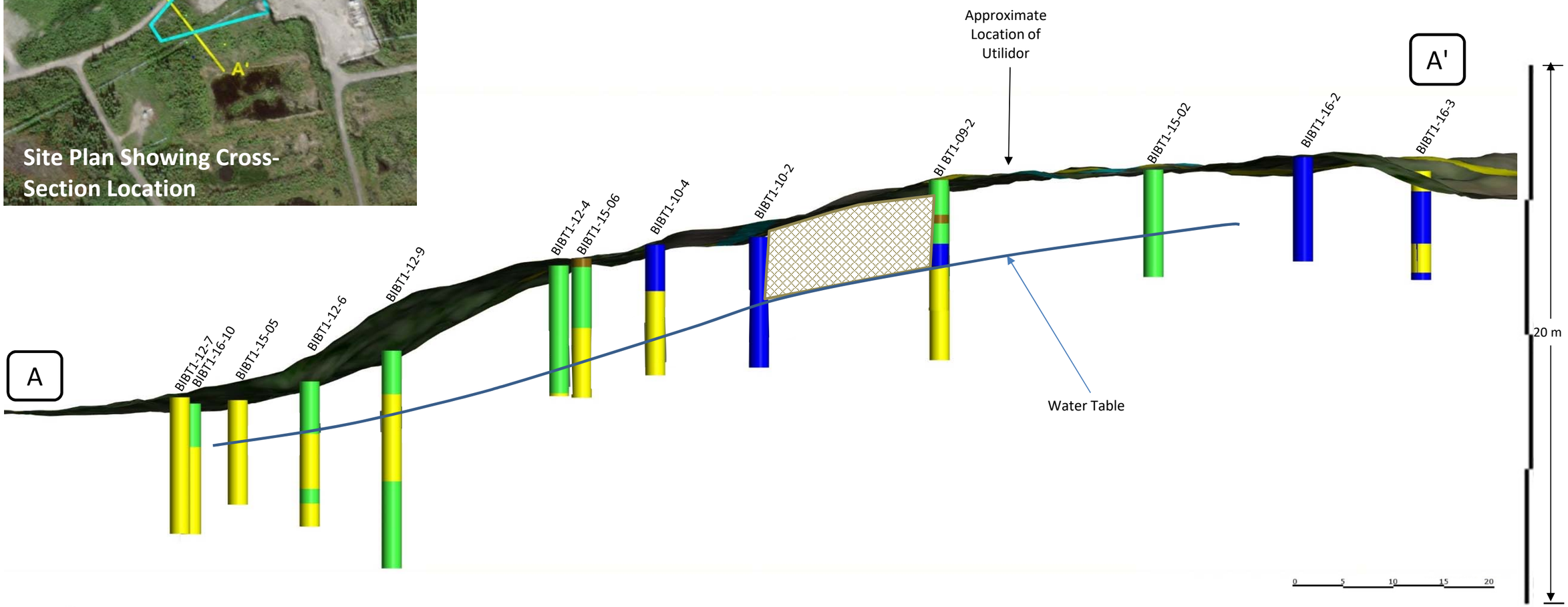


Site Plan Showing Cross-Section Location

NORTH



Unit

- CLAY
- FILL/ORGANICS
- NO RECOVERY
- PERMAFROST
- SAND
- SILT
- APPROXIMATE EXTENT OF EXCAVATED SOURCE MATERIAL

Notes: 1) 3x Vertical Exaggeration.
2) Cross-Section width is 40 m.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BT1, NORMAN WELLS, NT

CROSS-SECTION A-A' (NORTH TO SOUTH)

Date:	Drawn by:	Edited by:	App'd by:
10-May-19	AM	LG	MB

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FIG No. 5B

REV B

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Site Plan Showing
Cross-Section Location

NORTH

A

A'

Approximate
Location of
Utilidor

BIBT1-12-7
BIBT1-16-10
BIBT1-15-05
BIBT1-12-6
BIBT1-12-9
BIBT1-12-4
BIBT1-15-06
BIBT1-10-4
BIBT1-10-2
BI BT1-09-2
BIBT1-15-02
BIBT1-16-2
BIBT1-16-3

Water Table

20 m

0 5 10 15 20

Unit

- CLAY
- FILL/ORGANICS
- NO RECOVERY
- PERMAFROST
- SAND
- SILT
- APPROXIMATE EXTENT OF EXCAVATED SOURCE MATERIAL

LOCATION WHERE ORGANIC PARAMETERS MET GUIDELINES, SHOWN IN GREEN

LOCATION WHERE ORGANIC PARAMETERS EXCEEDED GUIDELINES, SHOWN IN RED

Notes: 1) 3x Vertical Exaggeration.
2) Cross-Section width is 40 m.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BT1, NORMAN WELLS, NT

CROSS-SECTION A-A' SOIL EXCEEDANCES ORGANIC PARAMETERS

Date:	Drawn by:	Edited by:	App'd by:
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FIG No. 5C

REV B

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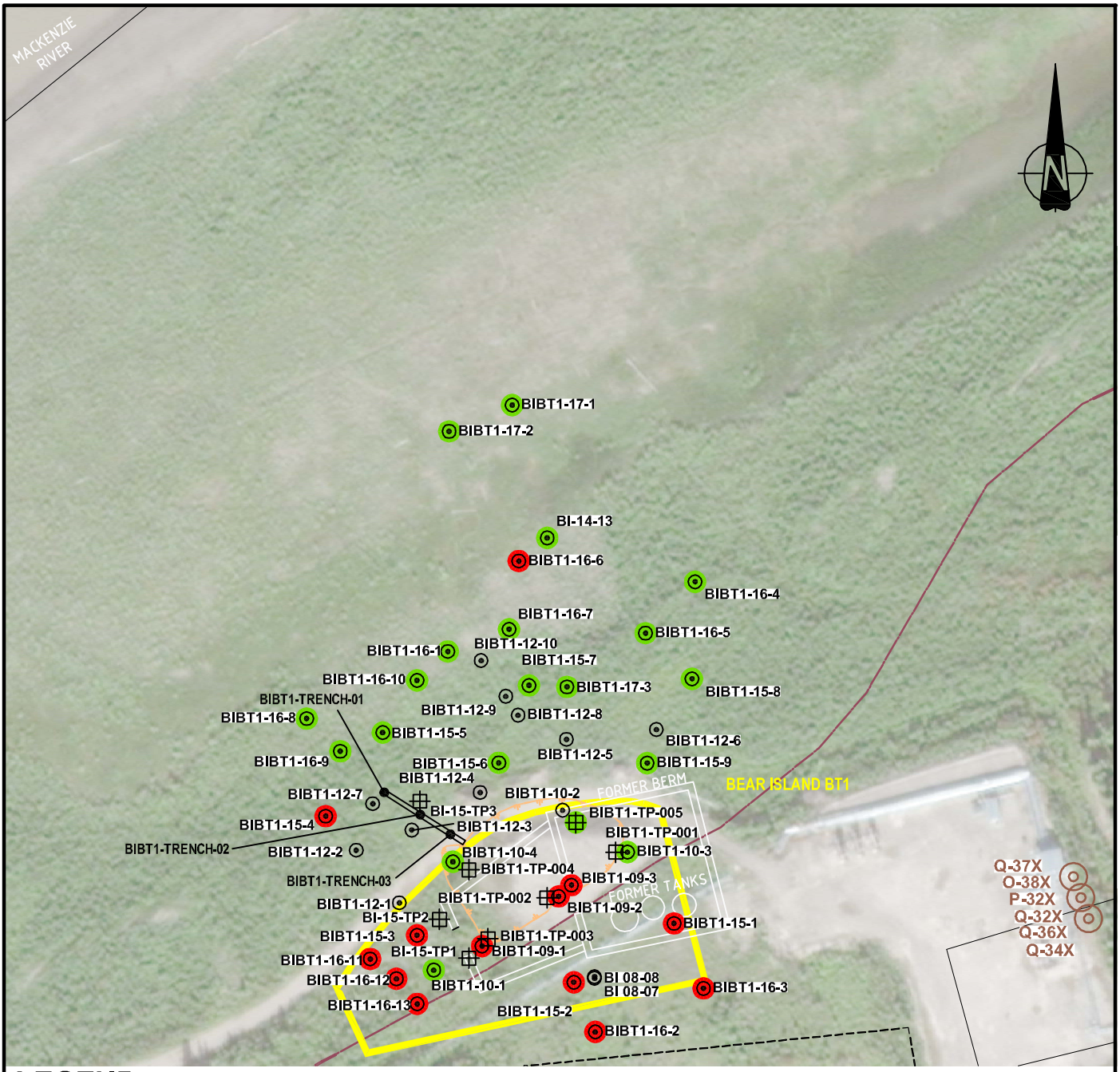

LEGEND

- PRODUCTION WELL LOCATION
- PIPELINE
- SOIL SAMPLING LOCATION
- TEST PIT LOCATION
- 2015 TRENCH
- APPROXIMATE PERIMETER OF FORMER EXCAVATION

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLICABLE ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLICABLE ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED, SHOWN IN RED

m 0 25 50 75 m

1:1750

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BT1, NORMAN WELLS, NT

SOIL ANALYTICAL RESULTS: INORGANIC PARAMETERS

Date:	Drawn by:	Edited by:	App'd by:
08-MAY-19	OTHERS	BMF	

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FIG No 6A | REV B

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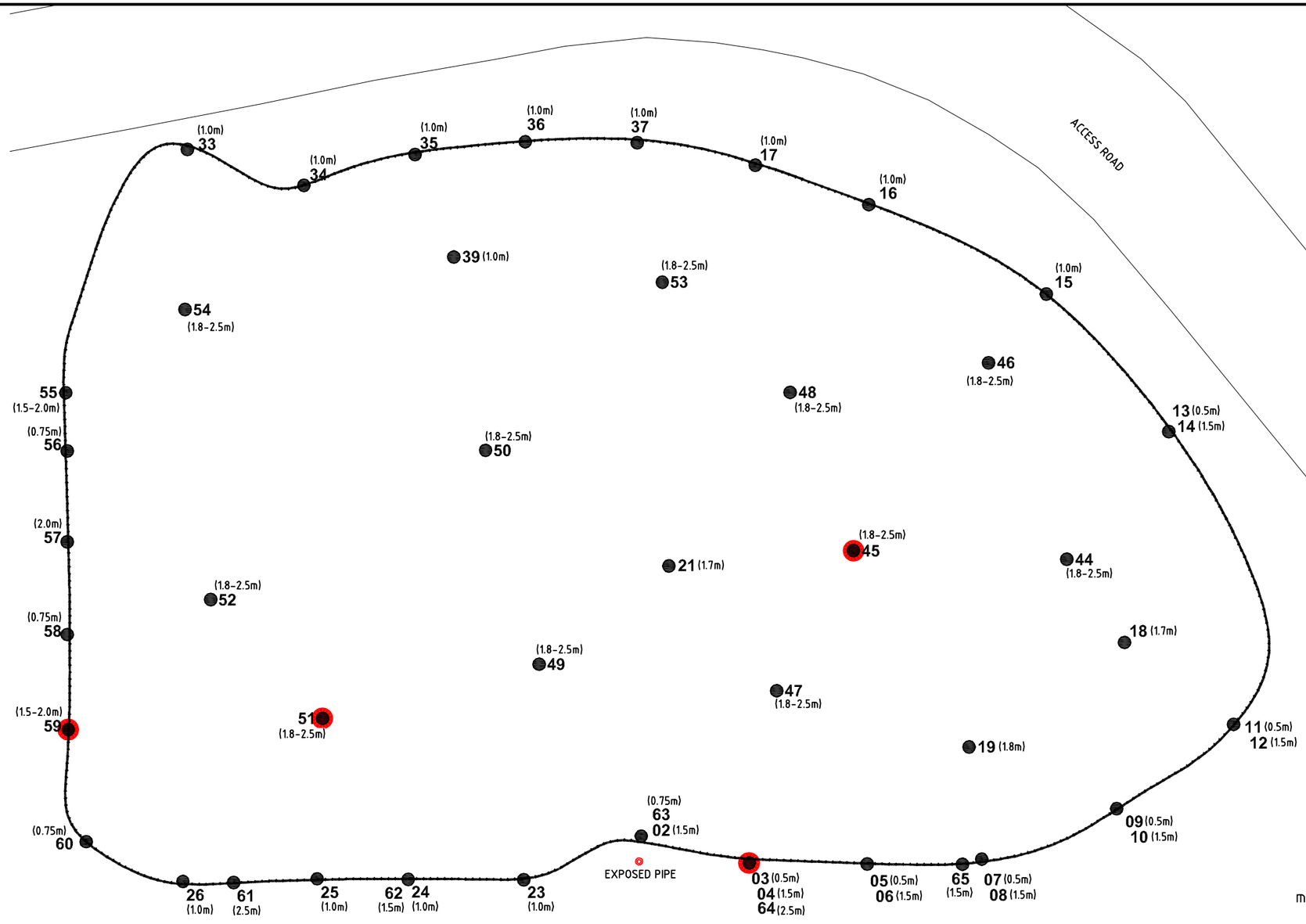

APPROX. SCALE: 1:200

LEGEND

- PERIMETER OF EXCAVATION
- (1.0m) DEPTH OF SAMPLE
- 01 SAMPLE LOCATION (APPROXIMATE)
- PIPELINE RIGHT-OF-WAY

NOTE: ALL SAMPLE LOCATIONS CONTAIN PREFIX "BIBT1-15-"

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLICABLE ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLICABLE ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED, SHOWN IN RED
- LOCATION NOT SAMPLED

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BT1, NORMAN WELLS, NT

SOIL ANALYTICAL RESULTS:
INORGANIC PARAMETERS (FORMER BIBT1 EXCAVATION)

Date:	Drawn by:	Edited by:	App'd by:
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FIG No 6B | REV B

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SAVE DATE & TIME: 7/5/2019 3:42:37 PM
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ISSUING OFFICE: eCAD

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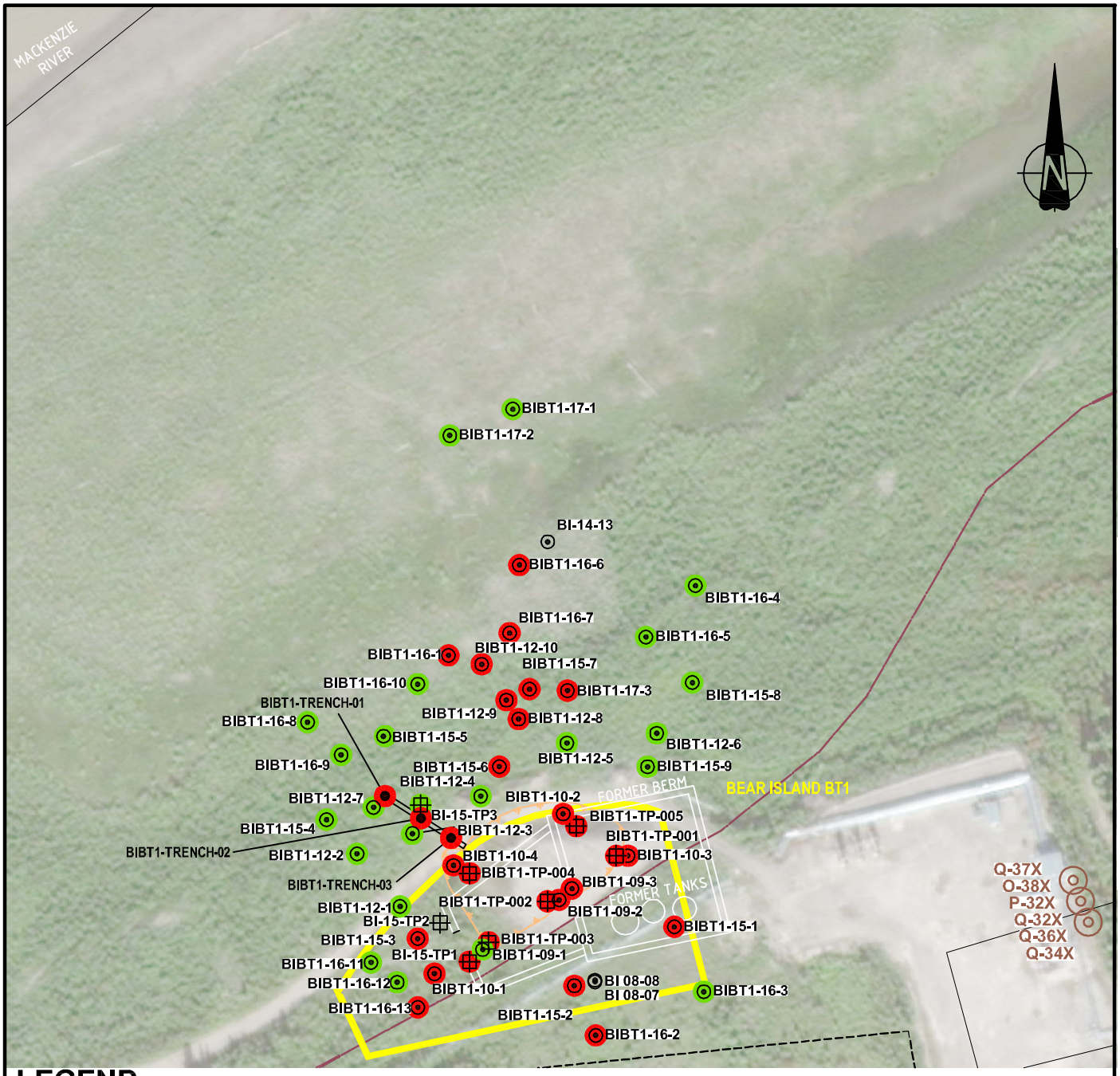

LEGEND

- PRODUCTION WELL LOCATION
- PIPELINE
- SOIL SAMPLING LOCATION
- TEST PIT LOCATION
- 2015 TRENCH
- APPROXIMATE PERIMETER OF FORMER EXCAVATION

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLICABLE ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLICABLE ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED, SHOWN IN RED

m 0 25 50 75 m

1:1750

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BT1, NORMAN WELLS, NT

SOIL ANALYTICAL RESULTS: ORGANIC PARAMETERS

Date:	Drawn by:	Edited by:	App'd by:
08-MAY-19	OTHERS	BMF	

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WorleyParsons Project No. 407011-00622-500

FIG No 6C

REV B

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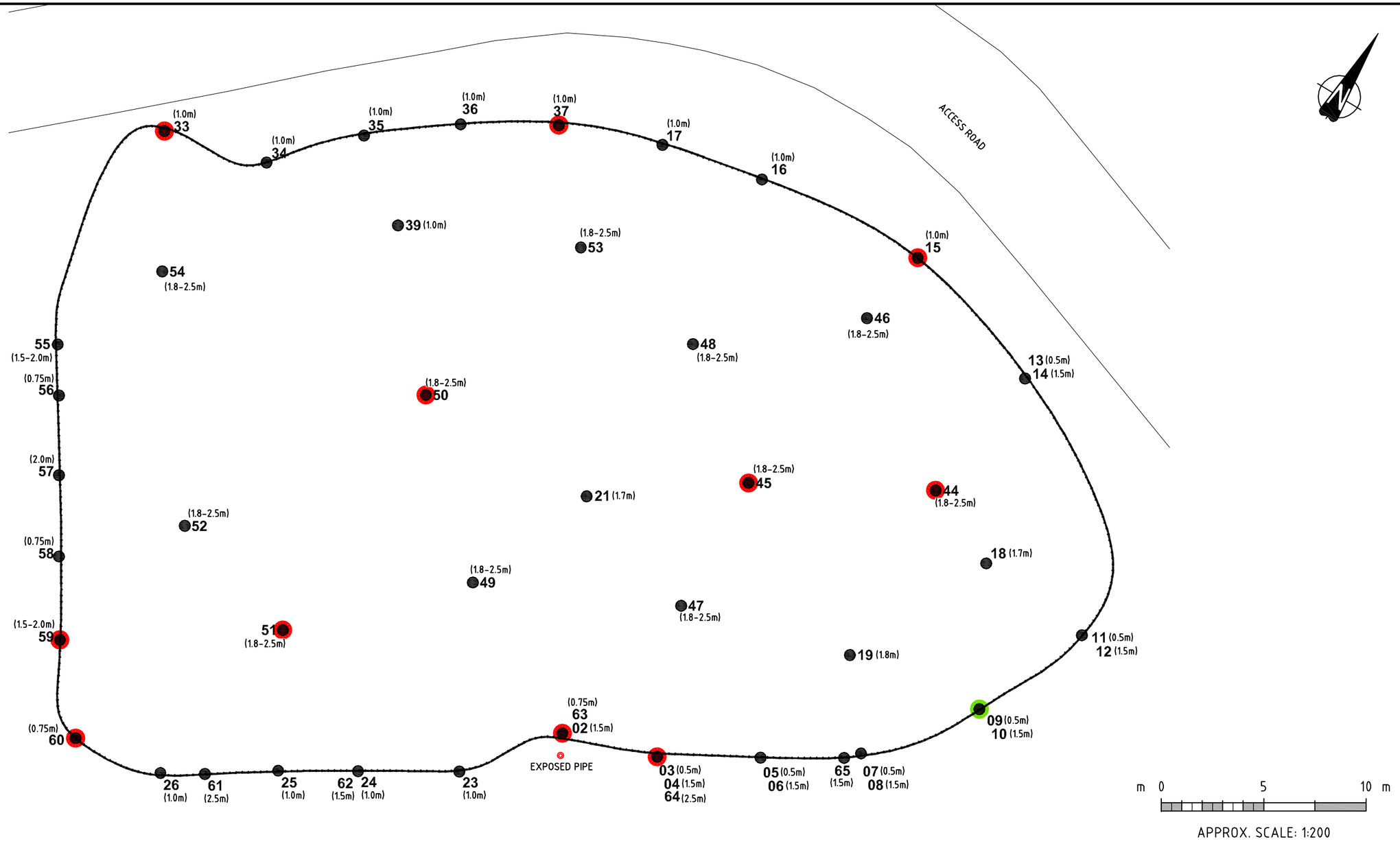
PLOT DATE & TIME: 10/5/2019 9:38:12 AM
SAVE DATE & TIME: 8/5/2019 4:33:11 PM
USER NAME: blan.tink
ISSUING OFFICE: eCAD

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018-BEARISLAND_CSM.DWG



LEGEND

- PERIMETER OF EXCAVATION
- (1.0m) DEPTH OF SAMPLE
- 01 SAMPLE LOCATION (APPROXIMATE)
- PIPELINE RIGHT-OF-WAY

NOTE: ALL SAMPLE LOCATIONS CONTAIN PREFIX "BIBT1-15-"

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLICABLE ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLICABLE ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED, SHOWN IN RED
- LOCATION NOT SAMPLED

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BT1, NORMAN WELLS, NT

SOIL ANALYTICAL RESULTS:
ORGANIC PARAMETERS (FORMER BIBT1 EXCAVATION)

Date:	Drawn by:	Edited by:	App'd by:
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FIG No 6D | REV B

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USER NAME: bfairfax
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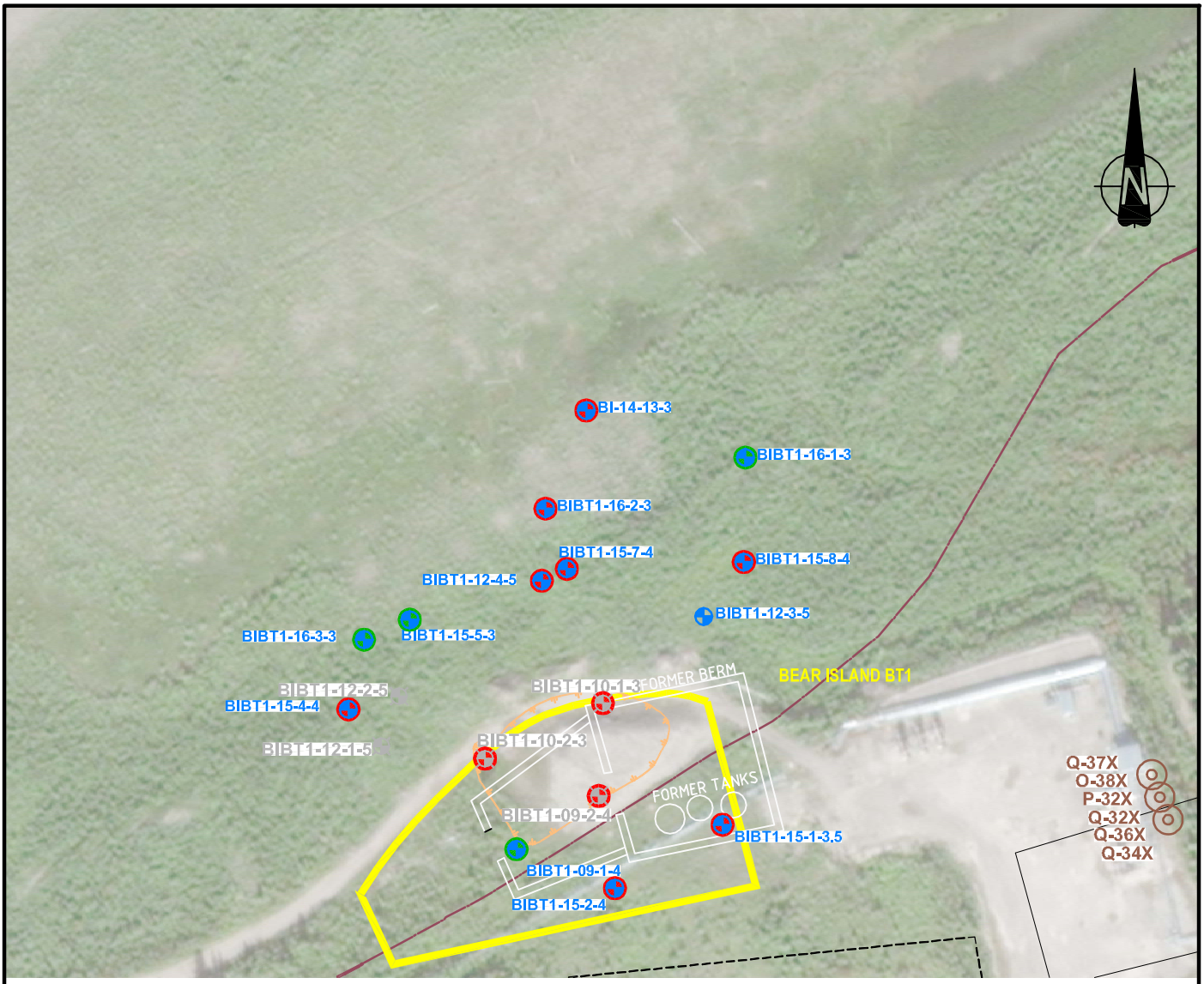

LEGEND

- PRODUCTION WELL LOCATION
- PIPELINE
- MONITORING WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- APPROXIMATE PERIMETER OF FORMER EXCAVATION

ANALYTICAL RESULTS

- LOCATION WHERE GROUNDWATER SAMPLE MET APPLIED ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN GREEN.
- LOCATION WHERE GROUNDWATER SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN RED
- LOCATION NOT SAMPLED IN MOST RECENT SAMPLING EVENT

m 0 25 50 75 m

1:1750

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BT1, NORMAN WELLS, NT

GROUNDWATER ANALYTICAL RESULTS: INORGANIC PARAMETERS

Date:	Drawn by:	Edited by:	App'd by:
03-MAY-19	OTHERS	BMF	

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WorleyParsons Project No.
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FIG No: 7A
REV: A

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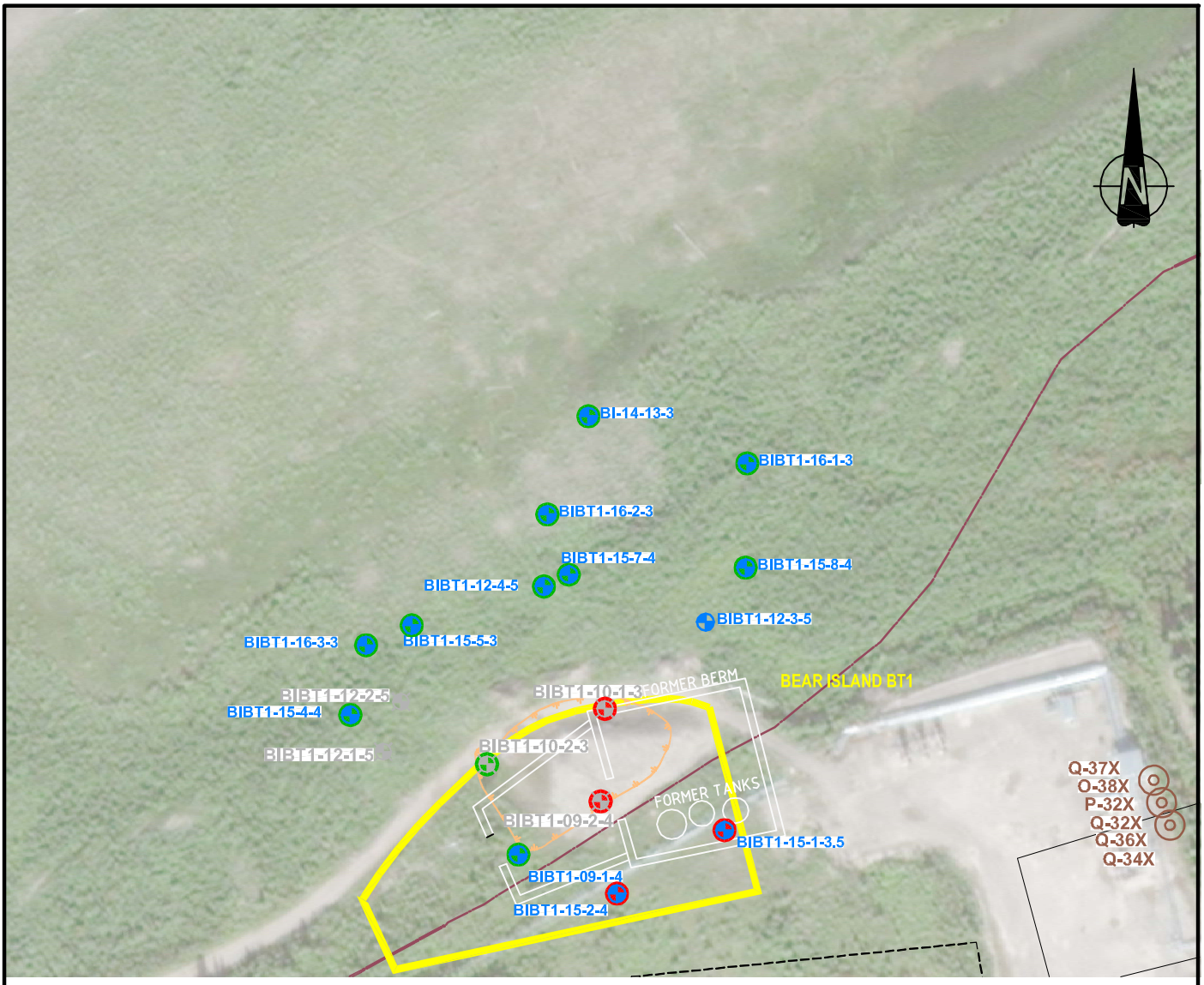
USER NAME: blan.tink
ISSUING OFFICE: eCAD

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018-BEARISLAND_CSM.DWG



LEGEND

- PRODUCTION WELL LOCATION
- PIPELINE
- MONITORING WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- APPROXIMATE PERIMETER OF FORMER EXCAVATION

ANALYTICAL RESULTS

- LOCATION WHERE GROUNDWATER SAMPLE MET APPLIED ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN GREEN.
- LOCATION WHERE GROUNDWATER SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN RED
- LOCATION NOT SAMPLED IN MOST RECENT SAMPLING EVENT

m 0 25 50 75 m

1:1750

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BT1, NORMAN WELLS, NT

GROUNDWATER ANALYTICAL RESULTS: ORGANIC PARAMETERS

Date:	Drawn by:	Edited by:	App'd by:
08-MAY-19	OTHERS	BMF	

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WorleyParsons Project No.
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FIG No: 7B
REV: B

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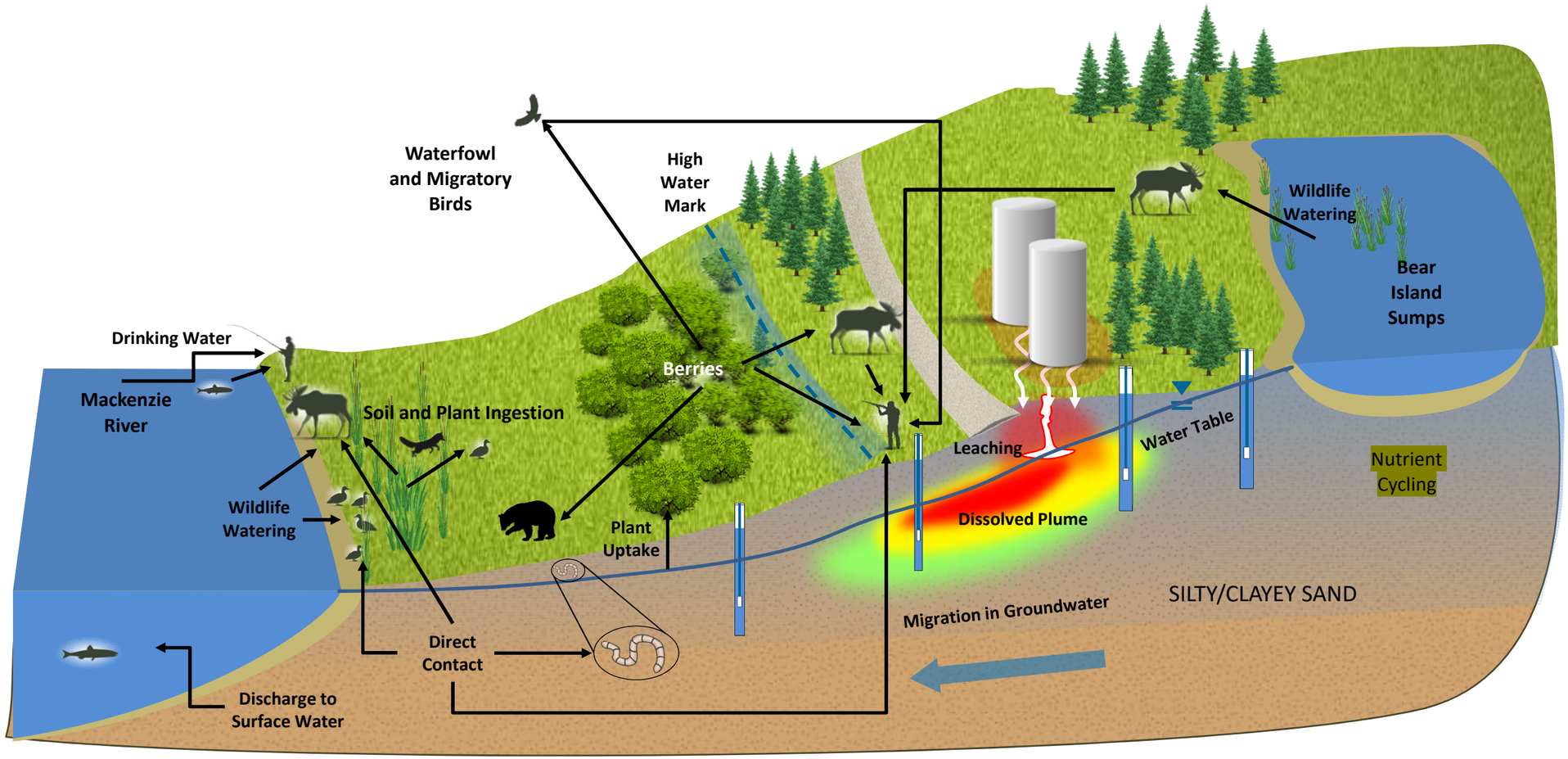
FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018-BEARISLAND_CSM.DWG



Health Canada, 2015. Conceptual Site Model Builder, Version 1.0. Developed by eSolutions Group Ltd. 2015.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BT1, NORMAN WELLS, NT

CONCEPTUAL SITE MODEL

Date:	Drawn by:	Edited by:	App'd by:
10-May-19	AH	LG	MB

OneWay to zero harm

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WorleyParsons Project No.
407011-00622-500

FIG No. 8 | REV A

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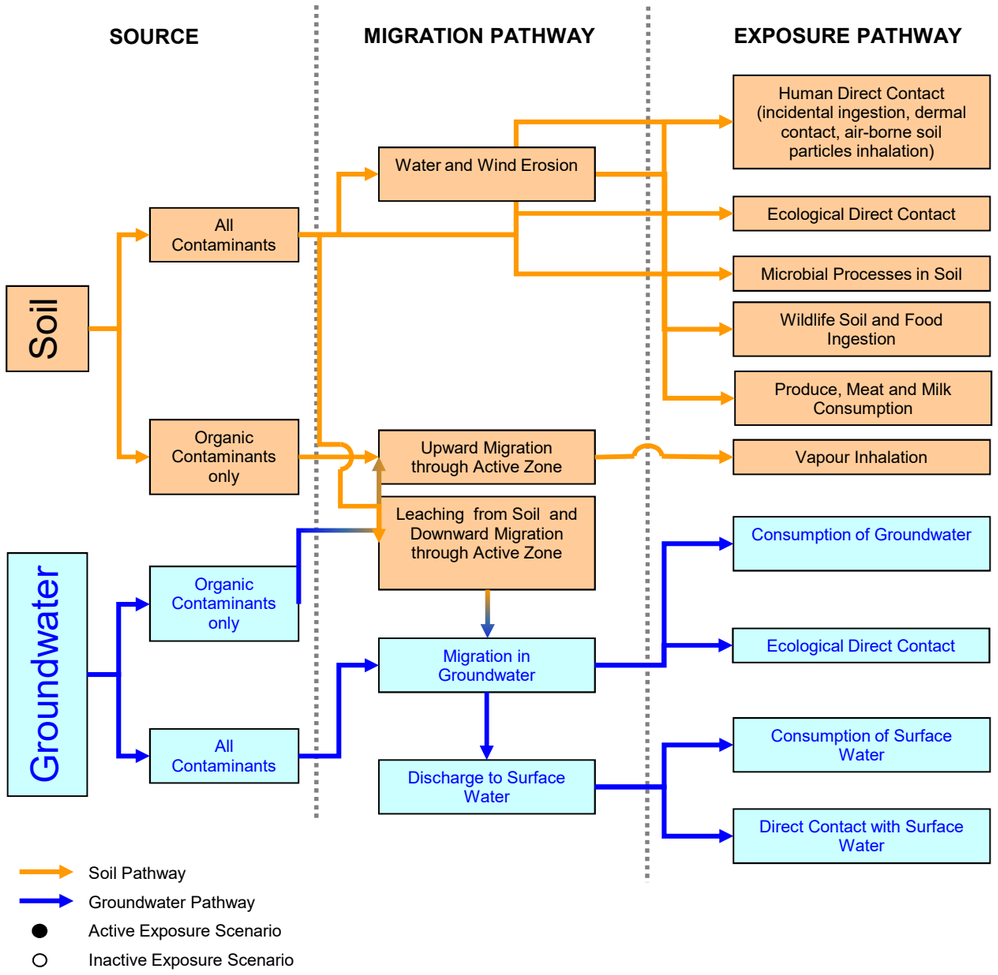
FILE LOCATION: CALGARY

FILE DIRECTORY: U:\CAL\GIS\407011-00622\0400-CONCEPTUAL SITE MODEL\11.0_FIGURES_&_MAPS\11.5_PDF_FINAL_FIGURES\BIS

Bear Island BT1 - Conceptual Exposure Model Flow Chart (Current Land Use and Site Conditions)



	RECEPTORS			
	Humans	Wildlife	Plant and Soil Invertebrates	Freshwater Aquatic Life
Human Direct Contact (incidental ingestion, dermal contact, air-borne soil particles inhalation)	●			
Ecological Direct Contact			●	
Microbial Processes in Soil			●	
Wildlife Soil and Food Ingestion		●		
Produce, Meat and Milk Consumption	●[1]			
Vapour Inhalation	○			
Consumption of Groundwater				
Ecological Direct Contact			●	
Consumption of Surface Water	○	●		
Direct Contact with Surface Water				●

Notes: 1) Although the current land use is industrial, it is recognized that due to the size of the site and the geographical features of the area (i.e. river, creek, etc.) animals may move on and off of the site, and hunters are able to hunt in close proximity to the site. As such, meat consumption through hunting should be considered as an active exposure pathway.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND BT1, NORMAN WELLS, NT

CONCEPTUAL EXPOSURE MODEL
CURRENT LAND USE AND SITE CONDITIONS

Date:	Drawn by:	Edited by:	App'd by:
10-May-19	AH	LG	MB

OneWay to zero harm

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407011-00622-500

FIG No. 9 REV A

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FILE LOCATION: CALGARY

FILE DIRECTORY: U:\CAL\GBS\407011-00622\0400-CONCEPTUAL SITE MODEL\11.0_FIGURES_&_MAPS\11.5_PDF_FINAL_FIGURES\BIBT1

Tables

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Residential/Parkland Coarse Surface				2	5	(6 - 8)	20	12	500	4	10	64	0.4	50	63	140	6.6	10	45	1	20	1	50	23	130	250
CCME Residential/Parkland Coarse Sub-Surface				2	5	(6 - 8)	20	12	500	4	10	64	0.4	50	63	140	6.6	10	45	1	20	1	50	23	130	250
S-CAT-10				2.9	0.7	7.83	1	9.7	356	0.8	0.94	16.4	0.14	8.9	20.6	10.6	0.1	2.1	28.2	1	---	0.36	---	0.8	26.2	116
S-CAT-11				2.9	1.04	7.76	1	8.8	353	0.62	0.9	21.5	0.15	9.54	21.8	12.6	0.07	3.2	29.6	0.88	---	0.3	---	1	29.4	108.5
S-CAT-12				2.5	0.64	7.76	1	9.25	368	0.6	0.7	18	0.15	9.4	22.9	11	0.06	2.4	29.9	0.8	---	0.3	---	1	30	99.9
BI BT1-09-1	14-Aug-2009	0.0 - 0.3m	**S-CAT-11**	3.4	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	1.0 - 1.3m	**S-CAT-12**	2.4	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	3.3 - 3.6m	**S-CAT-12**	3	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI BT1-09-2	14-Aug-2009	0.0 - 0.3m	**S-CAT-11**	5.5	3.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	1.6 - 1.9m	**S-CAT-12**	4.1	1.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	3.0 - 3.3m	**S-CAT-12**	2.5	0.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI BT1-09-3	14-Aug-2009	0.0 - 0.3m	**S-CAT-11**	3.2	4.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	2.4 - 2.7m	**S-CAT-12**	2.3	1.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-10-1	27-Aug-2010	5.7 - 6.0m	**S-CAT-12**	1.4	0.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-10-3	27-Aug-2010	5.7 - 6.0m	**S-CAT-12**	1.3	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-10-4/10-2-3	27-Aug-2010	0.0 - 0.5m	**S-CAT-11**	1.8	0.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI-14-13	23-Feb-2014	1.0m	**S-CAT-12**	0.58	0.48	6.72	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Feb-2014	2.0m	**S-CAT-12**	0.67	0.48	6.73	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Feb-2014	3.0m	**S-CAT-12**	0.36	0.56	6.81	< 1.0	5.7	180	< 0.40	0.32	9.9	< 0.15	5.7	11	5.7	< 0.050	1.4	17	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	19	59
	23-Feb-2014	4.0m	**S-CAT-12**	0.36	0.41	6.50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-TP-005	20-Jul-2014	0.95 - 1.05m	**S-CAT-12**	0.74	1.3	6.45	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-1-3.5	29-Sep-2015	1.8m	**S-CAT-12**	0.61	0.64	6.69	0.57	8.7	340	0.49	0.54	15	< 0.080	9.3	20	11	< 0.050	2.3	28	0.66	< 0.20	0.14	< 1.0	0.97	26	88
	29-Sep-2015	2.4m	**S-CAT-12**	0.58	0.57	6.74	0.50	8.7	290	0.51	0.58	16	< 0.080	9.2	20	11	< 0.050	2.1	28	0.70	< 0.20	0.14	< 1.0	0.99	25	92
	29-Sep-2015	3.6m	**S-CAT-12**	2.7	0.30	6.87	0.53	7.8	280	0.43	0.51	15	< 0.080	7.8	18	8.5	< 0.050	2.0	23	0.61	< 0.20	0.13	< 1.0	0.89	23	79
	29-Sep-2015	4.2m	**S-CAT-12**	3.0	0.55	7.49	< 0.50	5.2	120	< 0.40	0.28	8.5	< 0.080	6.2	8.2	5.0	< 0.050	1.4	16	< 0.50	< 0.20	< 0.10	< 1.0	0.67	16	48
BIBT1-15-2-4	29-Sep-2015	1.2m	**S-CAT-12**	0.48	0.97	6.84	0.56	8.5	340	0.47	0.51	15	< 0.080	8.6	18	13	< 0.050	2.1	26	0.61	< 0.20	0.16	< 1.0	0.87	26	81
	29-Sep-2015	2.4m	**S-CAT-12**	0.38	0.88	6.81	0.58	8.7	320	0.49	0.59	16	< 0.080	8.7	19	9.7	< 0.050	2.1	26	0.73	< 0.20	0.15	< 1.0	0.87	26	88
	29-Sep-2015	3.6m	**S-CAT-12**	2.8	0.42	6.89	0.59	8.2	240	0.42	0.53	15	< 0.080	8.1	17	8.8	< 0.050	2.0	25	0.64	< 0.20	0.13	< 1.0	0.95	23	82
BIBT1-15-03	01-Oct-2015	1.2m	**S-CAT-12**	2.5	0.54	6.67	0.58	9.2	340	0.51	0.48	18	< 0.080	9.9	20	10	< 0.050	2.0	29	0.71	< 0.20	0.17	< 1.0	0.90	30	88
	01-Oct-2015	3.0m	**S-CAT-12**	3.2	1.4	6.98	0.58	7.9	250	< 0.40	0.55	14	< 0.080	8.1	16	8.0	< 0.050	2.0	24	0.60	< 0.20	0.12	< 1.0	0.97	23	78
	01-Oct-2015	4.8m	**S-CAT-12**	2.9	1.8	6.90	0.59	6.4	200	< 0.40	0.49	12	< 0.080	7.6	15	7.3	< 0.050	1.7	21	0.51	< 0.20	0.12	< 1.0	1.2	21	75
BIBT1-15-4	25-Feb-2015	1.5m	**S-CAT-12**	2.2	5.8	7.11	< 1.0	7.9	270	< 0.40	0.48	14	< 0.15	7.8	17	8.8	< 0.050	1.9	24	0.62	< 1.0	< 0.30	< 1.0	< 1.0	24	76
BIBT1-15-4-4	01-Oct-2015	2.4m	**S-CAT-12**	2.8	0.29	7.44	0.51	6.3	190	< 0.40	0.39	10	< 0.080	6.4	10	5.7	< 0.050	1.4	18	< 0.50	< 0.20	< 0.10	< 1.0	0.72	20	58
	01-Oct-2015	3.6m	**S-CAT-12**	2.2	0.74	7.42	< 0.50	4.8	110	< 0.40	0.23	7.5	< 0.080	5.5	6.5	4.5	< 0.050	1.1	14	< 0.50	< 0.20	< 0.10	< 1.0	0.58	14	46
	01-Oct-2015	4.8m	**S-CAT-12**	2.4	0.77	7.13	< 0.50	5.6	120	< 0.40	0.35	7.9	< 0.080	6.0	12	5.9	< 0.050	1.3	16	< 0.50	< 0.20	< 0.10	< 1.0	0.71	14	56
BIBT1-15-5-3	01-Oct-2015	1.8m	**S-CAT-12**	0.34	0.80	7.31	< 0.50	4.6	100	< 0.40	0.26	6.4	< 0.080	4.9	7.2	4.5	< 0.050	0.99	13	< 0.50	< 0.20	< 0.10	< 1.0	0.68	12	44
	01-Oct-2015	3.6m	**S-CAT-12**	0.68	0.46	6.80	0.51	6.2	160	< 0.40	0.44	8.5	< 0.080	6.5	14	6.8	< 0.050	1.5	18	< 0.50	< 0.20	< 0.10	< 1.0	0.90	16	64

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Residential/Parkland Coarse Surface				**2**	**5**	**(6 - 8)**	**20**	**12**	**500**	**4**	**10**	**64**	**0.4**	**50**	**63**	**140**	**6.6**	**10**	**45**	**1**	**20**	**1**	**50**	**23**	**130**	**250**
CCME Residential/Parkland Coarse Sub-Surface				**2**	**5**	**(6 - 8)**	**20**	**12**	**500**	**4**	**10**	**64**	**0.4**	**50**	**63**	**140**	**6.6**	**10**	**45**	**1**	**20**	**1**	**50**	**23**	**130**	**250**
S-CAT-10				**2.9**	**0.7**	**7.83**	**1**	**9.7**	**356**	**0.8**	**0.94**	**16.4**	**0.14**	**8.9**	**20.6**	**10.6**	**0.1**	**2.1**	**28.2**	**1**	**---**	**0.36**	**---**	**0.8**	**26.2**	**116**
S-CAT-11				**2.9**	**1.04**	**7.76**	**1**	**8.8**	**353**	**0.62**	**0.9**	**21.5**	**0.15**	**9.54**	**21.8**	**12.6**	**0.07**	**3.2**	**29.6**	**0.88**	**---**	**0.3**	**---**	**1**	**29.4**	**108.5**
S-CAT-12				**2.5**	**0.64**	**7.76**	**1**	**9.25**	**368**	**0.6**	**0.7**	**18**	**0.15**	**9.4**	**22.9**	**11**	**0.06**	**2.4**	**29.9**	**0.8**	**---**	**0.3**	**---**	**1**	**30**	**99.9**
BIBT1-15-06	02-Oct-2015	2.4m	**S-CAT-12**	1.0	0.43	7.20	< 0.50	6.8	160	< 0.40	0.48	10	< 0.080	6.6	14	7.0	< 0.050	1.6	20	< 0.50	< 0.20	0.10	< 1.0	0.85	17	68
	02-Oct-2015	3.6m	**S-CAT-12**	1.3	0.43	7.12	< 0.50	5.8	130	< 0.40	0.44	8.3	< 0.080	6.2	12	5.8	< 0.050	1.4	18	< 0.50	< 0.20	< 0.10	< 1.0	0.72	15	57
	02-Oct-2015	4.8m	**S-CAT-12**	0.73	0.83	7.16	< 0.50	5.8	130	< 0.40	0.35	8.3	< 0.080	6.2	11	5.9	< 0.050	1.4	17	< 0.50	< 0.20	< 0.10	< 1.0	0.64	15	57
BIBT1-15-7-4	01-Oct-2015	2.4m	**S-CAT-12**	0.41	0.43	7.60	< 0.50	4.4	100	< 0.40	0.26	6.5	< 0.080	4.9	6.3	4.4	< 0.050	1.1	13	< 0.50	< 0.20	< 0.10	< 1.0	0.60	12	43
	01-Oct-2015	3.6m	**S-CAT-12**	1.0	0.44	7.16	< 0.50	5.3	120	< 0.40	0.28	8.4	< 0.080	6.1	9.1	5.5	< 0.050	1.3	17	< 0.50	< 0.20	< 0.10	< 1.0	0.75	17	54
BIBT1-15-8-4	02-Oct-2015	2.4m	**S-CAT-12**	1.1	0.26	7.07	0.64	8.9	290	0.45	0.52	16	< 0.080	9.7	20	9.4	< 0.050	1.8	28	0.66	< 0.20	0.14	< 1.0	0.91	26	89
	02-Oct-2015	3.6m	**S-CAT-12**	1.5	0.23	6.90	0.52	6.9	170	< 0.40	0.47	11	< 0.080	7.3	14	7.2	< 0.050	1.8	21	< 0.50	< 0.20	0.10	< 1.0	0.83	18	73
	02-Oct-2015	4.8m	**S-CAT-12**	1.8	0.28	7.06	< 0.50	6.3	140	< 0.40	0.39	11	< 0.080	7.0	12	7.2	< 0.050	1.6	20	< 0.50	< 0.20	< 0.10	< 1.0	0.91	17	64
BIBT1-15-09	02-Oct-2015	1.8m	**S-CAT-12**	1.9	0.29	7.09	0.56	8.0	250	0.42	0.56	13	< 0.080	8.4	19	8.9	< 0.050	2.0	25	0.62	< 0.20	0.16	< 1.0	0.83	21	84
	02-Oct-2015	3.6m	**S-CAT-12**	1.9	0.39	7.17	0.54	7.5	250	< 0.40	0.58	12	< 0.080	7.6	17	8.1	< 0.050	2.0	23	0.62	< 0.20	0.13	< 1.0	0.92	21	76
BIBT1-15-45	13-Mar-2015	1.8 - 2.5m	**S-CAT-12**	2.6	2.5	7.18	0.59	8.6	290	0.44	0.58	16	< 0.15	8.4	19	10	< 0.050	2.1	27	0.73	< 0.20	0.15	< 1.0	0.87	25	88
BIBT1-15-51	13-Mar-2015	1.8 - 2.5m	**S-CAT-12**	3.2	0.72	7.96	0.63	8.0	180	< 0.40	0.55	13	< 0.15	8.0	16	8.9	< 0.050	2.1	24	0.65	< 0.20	0.14	< 1.0	1.1	24	80
BIBT1-15-59	13-Mar-2015	1.5 - 2.0m	**S-CAT-12**	3.8	0.77	7.40	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-16-1	28-Feb-2016	0.3 - 0.5m	**S-CAT-11**	0.46	0.48	7.37	0.58	8.0	280	0.42	0.52	17	< 0.080	8.8	18	8.9	0.050	2.0	26	0.57	< 0.20	0.13	< 1.0	0.83	24	84
	28-Feb-2016	1.5 - 1.8m	**S-CAT-12**	2.2	0.37	6.89	0.66	8.5	300	0.43	0.62	14	< 0.080	8.7	20	9.6	0.053	2.2	26	0.67	< 0.20	0.14	< 1.0	0.96	24	91
	28-Feb-2016	2.5 - 2.8m	**S-CAT-12**	1.2	0.35	6.75	0.53	6.3	160	< 0.40	0.43	9.8	< 0.080	6.5	12	6.3	< 0.050	1.6	19	< 0.50	< 0.20	< 0.10	< 1.0	0.92	18	64
BIBT1-16-2	29-Feb-2016	1.2 - 1.4m	**S-CAT-12**	0.49	0.43	6.77	0.63	8.9	320	0.48	0.55	16	< 0.080	9.4	20	10	0.051	2.2	28	0.69	< 0.20	0.15	< 1.0	1.0	25	90
	29-Feb-2016	2.0 - 2.3m	**S-CAT-12**	1.1	0.36	6.82	0.64	9.1	330	0.47	0.59	16	< 0.080	9.4	21	10	0.052	2.2	28	0.72	< 0.20	0.14	< 1.0	1.0	26	93
	29-Feb-2016	3.2 - 3.4m	**S-CAT-12**	2.6	0.31	6.80	0.59	8.8	280	0.46	0.56	16	< 0.080	9.1	19	9.7	0.051	2.2	28	0.64	< 0.20	0.14	< 1.0	0.94	24	92
BIBT1-16-3	29-Feb-2016	0.5 - 0.7m	**S-CAT-12**	1.4	0.39	7.05	0.74	11	390	0.63	0.88	18	< 0.080	12	24	12	0.054	2.5	34	0.88	< 0.20	0.18	< 1.0	1.2	31	110
	29-Feb-2016	2.2 - 2.5m	**S-CAT-12**	2.7	0.38	6.85	0.62	8.8	290	0.44	0.57	16	< 0.080	9.1	19	9.5	< 0.050	2.2	27	0.68	< 0.20	0.14	< 1.0	0.99	25	90
	29-Feb-2016	3.4 - 3.6m	**S-CAT-12**	0.45	0.56	6.92	< 0.50	5.8	170	< 0.40	0.32	12	< 0.080	6.3	10	6.0	< 0.050	1.4	19	< 0.50	< 0.20	< 0.10	< 1.0	0.70	18	56
BIBT1-16-10	28-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.76	0.40	7.31	0.59	8.3	290	0.44	0.55	14	< 0.080	8.6	22	9.3	0.055	2.0	26	0.62	< 0.20	0.13	< 1.0	0.95	24	87
	28-Sep-2016	2.5 - 3.0m	**S-CAT-12**	0.50	0.41	6.92	< 0.50	6.2	150	< 0.40	0.37	10	< 0.080	6.7	11	6.5	< 0.050	1.6	19	< 0.50	< 0.20	< 0.10	< 1.0	0.77	18	65
	28-Sep-2016	3.0 - 3.5m	**S-CAT-12**	1.3	0.32	7.05	0.51	6.4	130	< 0.40	0.36	9.8	< 0.080	7.4	13	6.6	< 0.050	1.8	20	< 0.50	< 0.20	< 0.10	< 1.0	0.87	19	67
	28-Sep-2016	4.0 - 4.5m	**S-CAT-12**	1.3	0.38	6.83	0.71	8.5	260	0.40	0.90	11	< 0.080	8.8	23	8.9	0.057	3.0	26	0.75	< 0.20	0.14	< 1.0	1.3	21	84
BIBT1-16-11	28-Sep-2016	1.0 - 1.5m	**S-CAT-12**	3.1	2.0	7.35	0.58	8.5	280	0.44	0.51	14	< 0.080	8.5	19	9.3	< 0.050	2.1	25	0.63	< 0.20	0.13	< 1.0	0.92	23	84
	28-Sep-2016	2.0 - 2.5m	**S-CAT-12**	3.1	1.7	7.17	0.53	7.6	220	< 0.40	0.48	12	< 0.080	7.5	16	8.2	< 0.050	1.9	22	0.55	< 0.20	0.12	< 1.0	0.91	21	76
	28-Sep-2016	4.0 - 4.5m	**S-CAT-12**	2.5	2.2	7.08	0.51	7.0	180	< 0.40	0.48	11	< 0.080	7.2	14	7.5	< 0.050	1.8	21	< 0.50	< 0.20	0.11	< 1.0	0.91	19	72
BIBT1-16-12	28-Sep-2016	1.0 - 1.5m	**S-CAT-12**	2.3	1.1	7.13	0.57	8.5	310	0.51	0.55	15	< 0.080	9.3	20	10	< 0.050	2.3	28	0.66	< 0.20	0.14	< 1.0	0.90	25	88
	28-Sep-2016	2.0 - 2.5m	**S-CAT-12**	3.1	1.4	7.16	0.59	8.3	280	0.44	0.59	13	< 0.080	8.7	19	9.4	< 0.050	2.1	25	0.63	< 0.20	0.14	< 1.0	0.88	22	85
	29-Sep-2016	4.0 - 4.5m	**S-CAT-12**	2.5	1.2	7.04	0.57	7.3	180	< 0.40	0.62	11	< 0.080	8.0	17	8.0	0.073	2.0	23	0.59	< 0.20	0.12	< 1.0	1.1	20	78
BIBT1-16-13	29-Sep-2016	1.0 - 1.5m	**S-CAT-12**	2.8	0.38	7.18	0.59	8.7	310	0.50	0.58	15	< 0.080	8.7	19	10	< 0.050	2.1	27	0.66	< 0.20	0.15	< 1.0	0.88	25	91
	29-Sep-2016	2.5 - 3.0m	**S-CAT-12**	3.1	1.1	6.90	0.56	8.0	260	< 0.40	0.55	13	< 0.080	7.7	17	9.0	< 0.050	1.9	24	0.60	< 0.20	0.12	< 1.0	0.97	22	82
	29-Sep-2016	4.0 - 4.5m	**S-CAT-12**	2.6	1.0	7.10	0.54	7.8	190	< 0.40	0.57	12	< 0.080	7.9	17	8.3	0.059	2.1	24	0.56	< 0.20	0.12	< 1.0	0.84	21	80
BIBT1-16-4	26-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.86	0.58	7.33	< 0.50	5.6	140	< 0.40	0.31	9.3	< 0.080	6.4	9.2	5.5	< 0.050	1.5	18	< 0.50	< 0.20	< 0.10	< 1.0	0.66	17	55
	26-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.80	0.38	7.03	< 0.50	6.4	160	< 0.40	0.43	11	< 0.080	7.1	15	7.3	< 0.050	1.8	21	< 0.50	< 0.20	< 0.10	< 1.0	0.85	19	70
	26-Sep-2016	3.0 - 3.5m	**S-CAT-12**	0.66	0.42	6.85	0.57	8.3	190	< 0.40	0.63	12	< 0.080	8.3	18	8.4	< 0.050	2.9	25	0.59	< 0.20	0.12	< 1.0	0.96	20	73
	26-Sep-2016	4.0 - 4.5m	**S-CAT-12**	0.72	0.44	6.95	< 0.50	7.0	160	< 0.40	0.45	10	< 0.080	7.0	14	7.1	< 0.050	1.8	20	< 0.50	< 0.20	0.10	< 1.0	0.91	19	69

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Residential/Parkland Coarse Surface				**2**	**5**	**(6 - 8)**	**20**	**12**	**500**	**4**	**10**	**64**	**0.4**	**50**	**63**	**140**	**6.6**	**10**	**45**	**1**	**20**	**1**	**50**	**23**	**130**	**250**
CCME Residential/Parkland Coarse Sub-Surface				**2**	**5**	**(6 - 8)**	**20**	**12**	**500**	**4**	**10**	**64**	**0.4**	**50**	**63**	**140**	**6.6**	**10**	**45**	**1**	**20**	**1**	**50**	**23**	**130**	**250**
S-CAT-10				**2.9**	**0.7**	**7.83**	**1**	**9.7**	**356**	**0.8**	**0.94**	**16.4**	**0.14**	**8.9**	**20.6**	**10.6**	**0.1**	**2.1**	**28.2**	**1**	**---**	**0.36**	**---**	**0.8**	**26.2**	**116**
S-CAT-11				**2.9**	**1.04**	**7.76**	**1**	**8.8**	**353**	**0.62**	**0.9**	**21.5**	**0.15**	**9.54**	**21.8**	**12.6**	**0.07**	**3.2**	**29.6**	**0.88**	**---**	**0.3**	**---**	**1**	**29.4**	**108.5**
S-CAT-12				**2.5**	**0.64**	**7.76**	**1**	**9.25**	**368**	**0.6**	**0.7**	**18**	**0.15**	**9.4**	**22.9**	**11**	**0.06**	**2.4**	**29.9**	**0.8**	**---**	**0.3**	**---**	**1**	**30**	**99.9**
BIBT1-16-5	27-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.99	0.31	6.89	< 0.50	6.5	180	< 0.40	0.54	10	< 0.080	7.1	14	7.3	< 0.050	1.6	21	< 0.50	< 0.20	< 0.10	< 1.0	0.86	19	67
	27-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.99	0.35	7.10	< 0.50	6.1	160	< 0.40	0.35	9.9	< 0.080	6.4	11	6.4	< 0.050	1.4	18	< 0.50	< 0.20	< 0.10	< 1.0	0.80	18	59
	27-Sep-2016	3.0 - 3.5m	**S-CAT-12**	0.91	0.44	6.88	0.61	7.5	210	< 0.40	0.48	12	< 0.080	7.9	17	8.7	< 0.050	1.8	23	0.55	< 0.20	0.12	< 1.0	0.86	21	77
BIBT1-16-6	27-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.74	0.42	7.35	< 0.50	5.9	150	< 0.40	0.41	9.6	< 0.080	6.7	11	6.5	< 0.050	1.5	19	< 0.50	< 0.20	< 0.10	< 1.0	0.77	17	61
	27-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.68	0.44	6.99	< 0.50	6.4	140	< 0.40	0.37	9.6	< 0.080	6.3	11	6.2	< 0.050	1.4	18	< 0.50	< 0.20	< 0.10	< 1.0	0.71	17	60
	28-Sep-2016	3.0 - 3.5m	**S-CAT-12**	0.80	0.41	6.84	0.65	8.0	260	0.43	0.67	14	< 0.080	8.6	20	9.9	< 0.050	**15**	**30**	0.67	0.22	0.14	< 1.0	0.97	22	90
	28-Sep-2016	4.0 - 4.5m	**S-CAT-12**	0.84	0.41	6.74	0.68	7.4	220	< 0.40	**0.80**	11	< 0.080	7.4	18	8.6	< 0.050	1.9	23	0.74	< 0.20	0.15	< 1.0	1.0	21	81
BIBT1-16-7	28-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.67	0.35	6.89	< 0.50	6.2	190	< 0.40	0.38	11	< 0.080	6.5	12	6.5	< 0.050	1.5	19	< 0.50	< 0.20	< 0.10	< 1.0	0.67	18	60
	28-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.81	0.43	6.86	0.54	6.5	170	< 0.40	0.50	12	< 0.080	7.6	16	7.8	**0.068**	1.6	22	< 0.50	< 0.20	0.11	< 1.0	0.91	21	75
	28-Sep-2016	3.0 - 3.5m	**S-CAT-12**	0.85	0.42	6.85	0.54	6.4	150	< 0.40	0.41	9.8	< 0.080	7.8	12	6.8	0.057	2.0	21	< 0.50	< 0.20	< 0.10	< 1.0	0.80	19	67
	28-Sep-2016	4.0 - 4.5m	**S-CAT-12**	0.94	0.38	6.79	0.58	7.1	170	< 0.40	0.50	11	< 0.080	7.5	13	7.5	0.053	**3.4**	22	0.52	< 0.20	0.11	< 1.0	0.79	19	71
BIBT1-16-8	28-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.51	0.44	6.82	0.54	7.0	170	< 0.40	0.47	10	< 0.080	7.0	13	7.0	0.055	1.8	20	< 0.50	< 0.20	0.10	< 1.0	0.80	19	68
	28-Sep-2016	2.5 - 3.0m	**S-CAT-12**	0.76	0.31	6.80	0.52	6.0	140	< 0.40	0.49	10	< 0.080	6.8	14	7.1	< 0.050	1.5	20	< 0.50	< 0.20	0.10	< 1.0	0.77	18	64
	28-Sep-2016	4.0 - 4.5m	**S-CAT-12**	0.76	0.36	6.80	0.73	8.8	300	0.51	0.59	**24**	< 0.080	**9.8**	**23**	11	**0.068**	**3.2**	**30**	0.66	< 0.20	0.14	< 1.0	0.99	26	99
BIBT1-16-9	28-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.49	0.36	7.11	< 0.50	7.0	170	< 0.40	0.48	11	< 0.080	6.6	15	7.2	< 0.050	1.6	20	< 0.50	< 0.20	< 0.10	< 1.0	0.78	18	69
	28-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.57	0.34	7.08	< 0.50	5.2	140	< 0.40	0.34	9.4	< 0.080	6.7	10	5.9	< 0.050	1.4	18	< 0.50	< 0.20	< 0.10	< 1.0	0.84	17	62
	28-Sep-2016	4.0 - 4.5m	**S-CAT-12**	0.76	0.36	6.76	0.67	8.6	280	0.47	0.60	15	< 0.080	9.4	**24**	11	**0.066**	1.8	29	0.69	< 0.20	0.14	< 1.0	0.95	24	95
BIBT1-17-1	27-Sep-2017	0.0 - 1.0m	**S-CAT-12**	0.49	0.61	7.52	0.58	8.1	290	0.43	0.59	15	< 0.080	9.2	20	9.6	---	1.9	27	0.62	< 0.20	0.14	< 1.0	0.87	24	93
	27-Sep-2017	1.5 - 2.0m	**S-CAT-12**	0.75	0.44	7.51	0.58	7.6	220	0.41	0.56	13	< 0.080	8.1	17	8.5	---	1.8	24	0.59	< 0.20	0.13	< 1.0	0.87	22	81
BIBT1-17-2	27-Sep-2017	0.5 - 1.0m	**S-CAT-12**	0.51	0.63	**7.81**	0.57	7.8	270	0.42	0.58	14	< 0.080	8.5	18	8.7	---	1.9	25	0.57	< 0.20	0.13	< 1.0	0.91	22	86
	27-Sep-2017	2.0 - 2.5m	**S-CAT-12**	0.50	**0.79**	7.69	< 0.50	5.7	150	< 0.40	0.34	8.8	< 0.080	5.9	9.8	6.2	---	1.4	17	< 0.50	< 0.20	< 0.10	< 1.0	0.68	15	60
BIBT1-17-3	27-Sep-2017	0.5 - 1.0m	**S-CAT-12**	1.3	0.56	7.45	0.61	7.6	270	0.41	0.59	13	< 0.080	8.0	17	8.6	---	1.8	24	0.58	< 0.20	0.14	< 1.0	0.89	22	79
	27-Sep-2017	1.0 - 1.5m	**S-CAT-12**	1.4	**1.3**	7.30	0.69	9.0	330	0.48	0.56	15	< 0.080	9.2	21	11	---	2.2	29	0.70	< 0.20	0.17	< 1.0	0.98	25	89
(Duplicate)	27-Sep-2017	1.0 - 1.5m	**S-CAT-12**	1.3	**1.2**	7.22	0.71	9.2	350	0.52	0.61	16	< 0.080	9.2	21	11	---	2.2	29	0.72	< 0.20	0.17	< 1.0	1.0	27	92
	27-Sep-2017	3.0 - 3.5m	**S-CAT-12**	0.83	**0.69**	7.47	< 0.50	6.4	190	< 0.40	0.41	10	< 0.080	6.5	12	6.5	---	1.7	20	< 0.50	< 0.20	< 0.10	< 1.0	0.78	18	63

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Surface soils, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Sub-Surface soils, 1999 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Surface soils, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Sub-Surface soils, 1999 and updates)

6. Background 95th Percentile Statistical Category:
S-CAT-10: Islands - Organic Surface Soil - 95th Percentile Background
S-CAT-11: Islands - Mineral Surface Soil - 95th Percentile Background
S-CAT-12: Islands - Mineral Subsurface Soil - 95th Percentile Background

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	PHC									PAH																	
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (CCME) (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Calculate CCME IACR (none)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME Residential/Parkland Coarse Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Residential/Parkland Coarse Sub-Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Canada Wide Standards Surface				---	---	---	---	210	150	300	2800	2800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME Canada Wide Standards Sub-Surface				---	---	---	---	700	1000	2500	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-10				0.0234	0.0704	0.0436	0.288	25.2	41.2	422	157	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.008	0.005	0.0078	0.0069	0.005	---	0.0301	0.035	0.0135
S-CAT-11				0.0182	0.0656	0.047	0.34	29.2	43.8	274	90	---	0.005	0.005	0.004	0.008	0.008	---	---	---	0.0176	0.007	0.012	0.01	0.011	---	0.0395	0.0379	0.0192
S-CAT-12				0.005	0.02	0.01	0.04	15.5	27	207	86	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.034	0.005	0.008	0.005	0.0064	---	0.025	0.059	0.0164
BI BT1-09-1	14-Aug-2009	0.0 - 0.3m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	62	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	1.0 - 1.3m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	14	91	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	3.3 - 3.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	32	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI BT1-09-2	14-Aug-2009	0.0 - 0.3m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	73	15	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	1.6 - 1.9m	**S-CAT-12**	5.5	0.040	0.31	0.13	260	55	160	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	2.4 - 2.7m	**S-CAT-12**	11	< 0.020	0.59	0.26	600	220	360	96	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	3.0 - 3.3m	**S-CAT-12**	4.6	< 0.020	< 0.010	< 0.040	18	< 10	37	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	4.1 - 4.4m	**S-CAT-12**	0.25	< 0.020	< 0.010	< 0.040	< 12	< 10	53	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI BT1-09-3	14-Aug-2009	0.0 - 0.3m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	58	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	1.0 - 1.3m	**S-CAT-12**	2.0	0.10	0.16	4.9	530	3700	9400	3900	18000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	2.4 - 2.7m	**S-CAT-12**	32	3.0	27	130	4300	1100	1500	460	2000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	4.0 - 4.3m	**S-CAT-12**	0.23	< 0.020	0.051	0.20	14	< 10	28	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2009	5.7 - 6.0m	**S-CAT-12**	0.16	< 0.020	0.043	0.19	12	< 10	< 10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-10-1	27-Aug-2010	0.0 - 0.3m	**S-CAT-10**	0.087	0.21	0.12	0.51	32	< 10	53	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2010	2.2 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	38	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2010	5.7 - 6.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-10-2/10-1-3	28-Aug-2010	0.0 - 0.3m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	110	64	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Aug-2010	1.0 - 1.3m	**S-CAT-12**	140	410	120	860	21000	13000	18000	5400	27000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Aug-2010	2.5 - 3.0m	**S-CAT-12**	0.39	0.23	0.099	0.53	23	< 10	44	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	28-Aug-2010	2.5 - 3.0m	**S-CAT-12**	1.3	0.99	0.45	2.9	140	38	110	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-10-3	27-Aug-2010	0.0 - 0.5m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	71	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	27-Aug-2010	0.0 - 0.5m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	82	35	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2010	1.8 - 2.1m	**S-CAT-12**	7.0	< 0.020	1.3	0.27	87	16	62	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2010	3.7 - 4.0m	**S-CAT-12**	3.5	< 0.020	2.4	3.3	470	< 10	41	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2010	4.2 - 4.5m	**S-CAT-12**	0.23	0.051	0.10	0.20	< 12	< 10	23	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2010	5.7 - 6.0m	**S-CAT-12**	0.24	0.45	0.22	0.93	45	14	43	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-10-4/10-2-3	27-Aug-2010	0.0 - 0.5m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	21	380	210	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2010	1.7 - 2.0m	**S-CAT-12**	0.049	< 0.020	1.6	0.28	910	3500	1000	62	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Aug-2010	3.2 - 3.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	32	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-12-1	23-Jul-2012	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	33	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jul-2012	3.0 - 3.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	22	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-12-10	26-Jul-2012	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	110	1200	540	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Jul-2012	3.0 - 3.5m	**S-CAT-12**	0.073	< 0.020	0.41	0.10	< 12	< 10	20	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Jul-2012	4.5 - 5.0m	**S-CAT-12**	0.0095	< 0.020	0.046	< 0.040	< 12	< 10	26	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-12-2/BIBT1-12-1-5	23-Jul-2012	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	42	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jul-2012	2.2 - 2.7m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	28	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jul-2012	3.3 - 3.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	44	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jul-2012	4.5 - 5.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Advisian
WorleyParsons Group

Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	PHC									PAH																			
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (CCME) (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Calculate CCME IACR (none)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME Residential/Parkland Coarse Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Residential/Parkland Coarse Sub-Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Canada Wide Standards Surface				---	---	---	---	210	150	300	2800	2800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME Canada Wide Standards Sub-Surface				---	---	---	---	700	1000	2500	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-10				0.0234	0.0704	0.0436	0.288	25.2	41.2	422	157	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.008	0.005	0.0078	0.0069	0.005	---	0.0301	0.035	0.0135
S-CAT-11				0.0182	0.0656	0.047	0.34	29.2	43.8	274	90	---	0.005	0.005	0.004	0.008	0.008	---	---	---	0.0176	0.007	0.012	0.01	0.011	---	0.0395	0.0379	0.0192
S-CAT-12				0.005	0.02	0.01	0.04	15.5	27	207	86	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.034	0.005	0.008	0.005	0.0064	---	0.025	0.059	0.0164
BIBT1-12-3	23-Jul-2012	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	42	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jul-2012	3.5 - 4.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	43	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jul-2012	5.0 - 5.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-12-4	23-Jul-2012	0.5 - 1.0m	**S-CAT-12**	0.029	< 0.020	0.020	< 0.040	< 12	< 10	48	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jul-2012	2.5 - 3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	40	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jul-2012	4.0 - 4.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	31	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-12-5	23-Jul-2012	1.0 - 1.5m	**S-CAT-12**	0.030	< 0.020	< 0.010	< 0.040	< 12	< 10	35	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jul-2012	2.5 - 3.0m	**S-CAT-12**	0.036	0.026	0.041	0.15	< 12	< 10	20	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-12-6/BIBT1-12-3-5	23-Jul-2012	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	41	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jul-2012	3.0 - 3.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	29	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-12-7/BIBT1-12-2-5	23-Jul-2012	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	23	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jul-2012	3.6 - 4.1m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Jul-2012	3.6 - 4.1m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-12-8	24-Jul-2012	1.0 - 1.5m	**S-CAT-12**	0.019	0.044	0.020	0.089	< 12	< 10	30	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jul-2012	1.5 - 1.8m	**S-CAT-12**	< 0.40	< 0.060	11	11	1300	430	590	140	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jul-2012	4.0 - 4.5m	**S-CAT-12**	< 0.51	< 0.10	18	36	3500	1100	1500	410	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jul-2012	5.0 - 5.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	26	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jul-2012	6.5 - 7.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	10	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-12-9/BIBT1-12-4-5	24-Jul-2012	0.7 - 1.0m	**S-CAT-12**	0.012	0.024	< 0.010	< 0.040	< 12	13	30	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jul-2012	3.0 - 3.5m	**S-CAT-12**	14	82	53	230	8200	2500	3600	1000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	24-Jul-2012	3.0 - 3.5m	**S-CAT-12**	4.6	30	20	80	3600	1300	1900	490	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jul-2012	5.5 - 6.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	21	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jul-2012	6.5 - 7.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	50	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-TP-001	20-Jul-2014	0.45 - 0.55m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	350	2900	---	4700	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2014	0.95 - 1.05m	**S-CAT-12**	2.9	< 0.020	< 0.010	< 0.040	< 12	37	310	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-TP-002	20-Jul-2014	0.45 - 0.55m	**S-CAT-12**	61	35	43	190	4600	12000	20000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2014	0.95 - 1.05m	**S-CAT-12**	47	10	31	120	4300	2000	3000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2014	1.45 - 1.55m	**S-CAT-12**	84	40	53	230	9900	1400	2100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Jul-2014	1.45 - 1.55m	**S-CAT-12**	64	19	44	190	5900	1200	1700	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2014	2.45 - 2.55m	**S-CAT-12**	18	< 0.020	0.34	< 0.040	42	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-TP-003	20-Jul-2014	0.45 - 0.55m	**S-CAT-12**	18	6.6	7.0	45	2600	2100	3400	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2014	0.95 - 1.05m	**S-CAT-12**	56	24	32	260	9400	3500	5100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2014	1.45 - 1.55m	**S-CAT-12**	35	2.3	21	84	2700	600	840	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2014	2.45 - 2.55m	**S-CAT-12**	1.2	< 0.020	0.10	0.23	22	12	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-TP-004	20-Jul-2014	0.45 - 0.55m	**S-CAT-12**	3.0	0.045	2.7	12	350	5200	13000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2014	0.95 - 1.05m	**S-CAT-12**	38	13	3.2	38	2200	9400	16000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2014	1.45 - 1.55m	**S-CAT-12**	12	0.25	4.6	4.5	180	19	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2014	1.95 - 2.05m	**S-CAT-12**	5.0	2.6	0.78	4.1	170	93	170	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Advisian
WorleyParsons Group

Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	PHC									PAH																	
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (CCME) (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Calculate CCME IACR (none)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME Residential/Parkland Coarse Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Residential/Parkland Coarse Sub-Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Canada Wide Standards Surface				---	---	---	---	210	150	300	2800	2800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME Canada Wide Standards Sub-Surface				---	---	---	---	700	1000	2500	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-10				0.0234	0.0704	0.0436	0.288	25.2	41.2	422	157	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.008	0.005	0.0078	0.0069	0.005	---	0.0301	0.035	0.0135
S-CAT-11				0.0182	0.0656	0.047	0.34	29.2	43.8	274	90	---	0.005	0.005	0.004	0.008	0.008	---	---	---	0.0176	0.007	0.012	0.01	0.011	---	0.0395	0.0379	0.0192
S-CAT-12				0.005	0.02	0.01	0.04	15.5	27	207	86	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.034	0.005	0.008	0.005	0.0064	---	0.025	0.059	0.0164
BIBT1-TP-005	20-Jul-2014	0.45 - 0.55m	**S-CAT-12**	48	21	28	190	5200	9600	13000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2014	0.95 - 1.05m	**S-CAT-12**	110	64	50	200	6900	6700	9300	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Jul-2014	0.95 - 1.05m	**S-CAT-12**	110	71	53	210	7400	7400	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2014	2.45 - 2.55m	**S-CAT-12**	31	33	17	78	2500	410	600	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-TRENCH-01	11-Sep-2015	1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	35	680	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-TRENCH-02	11-Sep-2015	1.0m	**S-CAT-12**	0.055	< 0.020	0.41	0.34	27	140	330	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-TRENCH-03	11-Sep-2015	1.0m	**S-CAT-12**	0.31	< 0.020	1.2	1.5	170	1200	1800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-1-3.5	29-Sep-2015	1.8m	**S-CAT-12**	210	550	220	1000	27000	8800	19000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	29-Sep-2015	1.8m	**S-CAT-12**	86	280	80	400	13000	3100	6800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Sep-2015	2.4m	**S-CAT-12**	87	190	61	280	11000	3100	7400	---	8200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Sep-2015	3.6m	**S-CAT-12**	0.62	0.95	0.51	2.0	93	36	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	29-Sep-2015	3.6m	**S-CAT-12**	1.2	3.0	1.4	7.2	350	30	83	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Sep-2015	4.2m	**S-CAT-12**	0.064	0.077	0.023	0.10	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-2	25-Feb-2015	1.5m	**S-CAT-12**	99	0.35	66	250	6700	1800	2600	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-2-4	29-Sep-2015	1.2m	**S-CAT-12**	100	310	73	390	16000	1600	2800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Sep-2015	2.4m	**S-CAT-12**	44	60	18	85	3600	680	1200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	29-Sep-2015	2.4m	**S-CAT-12**	42	33	8.5	36	1200	160	310	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Sep-2015	3.6m	**S-CAT-12**	7.0	1.3	0.59	2.2	110	18	56	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-03	01-Oct-2015	1.2m	**S-CAT-12**	0.026	0.064	0.041	0.41	360	6500	16000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	01-Oct-2015	1.2m	**S-CAT-12**	0.024	0.063	0.038	0.40	250	5700	15000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Oct-2015	3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	13	630	2200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Oct-2015	4.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-4	25-Feb-2015	1.5m	**S-CAT-12**	20	< 0.020	22	78	2000	180	370	---	---	0.011	< 0.0050	< 0.0040	0.0057	0.0050	< 0.10	0.011	< 0.0050	0.011	< 0.0050	0.0084	0.026	0.0053	0.18	0.18	0.078	0.014
BIBT1-15-4-4	01-Oct-2015	2.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Oct-2015	3.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	01-Oct-2015	3.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Oct-2015	4.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-5-3	01-Oct-2015	1.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	01-Oct-2015	1.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Oct-2015	3.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-06	02-Oct-2015	2.4m	**S-CAT-12**	0.26	0.066	0.058	0.43	16	120	890	---	---	< 0.0050	< 0.0050	< 0.0040	0.0063	< 0.0050	< 0.10	0.0084	< 0.0050	0.0069	< 0.0050	0.0077	0.0094	0.0066	0.16	0.050	0.031	0.015
	02-Oct-2015	3.6m	**S-CAT-12**	1.4	< 0.020	0.29	0.12	19	55	120	---	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0067	< 0.0050	0.0058	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.093	0.011	0.019	0.0082
(Duplicate)	02-Oct-2015	3.6m	**S-CAT-12**	1.4	< 0.020	0.31	0.17	34	48	120	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02-Oct-2015	4.8m	**S-CAT-12**	2.0	< 0.020	< 0.010	< 0.040	< 12	14	< 50	---	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0065	< 0.0050	0.0054	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.084	0.0068	0.012	0.0066
BIBT1-15-7-4	01-Oct-2015	2.4m	**S-CAT-12**	0.039	0.027	0.055	0.091	< 12	39	280	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Oct-2015	3.6m	**S-CAT-12**	0.10	0.28	19	33	2900	1100	1800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	01-Oct-2015	3.6m	**S-CAT-12**	0.12	0.32	25	43	4200	1400	2100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Advisian
WorleyParsons Group

Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	PHC: Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50})-Gravimetric (mg/kg)	PAH: Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent	Benzo(a)Pyrene Total Potency Equivalent (CCME)	Benzo(k)Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Calculate CCME IACR (none)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME Residential/Parkland Coarse Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Residential/Parkland Coarse Sub-Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Canada Wide Standards Surface				---	---	---	---	210	150	300	2800	2800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME Canada Wide Standards Sub-Surface				---	---	---	---	700	1000	2500	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-10				0.0234	0.0704	0.0436	0.288	25.2	41.2	422	157	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.008	0.005	0.0078	0.0069	0.005	---	0.0301	0.035	0.0135
S-CAT-11				0.0182	0.0656	0.047	0.34	29.2	43.8	274	90	---	0.005	0.005	0.004	0.008	0.008	---	---	---	0.0176	0.007	0.012	0.01	0.011	---	0.0395	0.0379	0.0192
S-CAT-12				0.005	0.02	0.01	0.04	15.5	27	207	86	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.034	0.005	0.008	0.005	0.0064	---	0.025	0.059	0.0164
BIBT1-15-8-4	02-Oct-2015	2.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	83	---	---	< 0.0050	< 0.0050	< 0.0040	0.0058	0.0065	< 0.10	0.013	< 0.0050	0.011	< 0.0050	0.011	0.0069	0.0065	0.21	0.014	0.032	0.019
	02-Oct-2015	3.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0070	< 0.0050	0.0058	< 0.0050	0.0059	< 0.0050	< 0.0050	0.12	0.0073	0.018	0.011
	02-Oct-2015	4.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0061	< 0.0050
BIBT1-15-09	02-Oct-2015	1.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	69	---	---	< 0.0050	< 0.0050	< 0.0040	0.0057	0.0051	< 0.10	0.012	< 0.0050	0.011	< 0.0050	0.0086	< 0.0050	0.0070	0.20	0.014	0.028	0.015
	02-Oct-2015	3.6m	**S-CAT-12**	0.036	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0081	< 0.0050	0.0096	< 0.0050	0.0074	< 0.0050	0.0057	0.16	0.011	0.024	0.014
BIBT1-15-10	25-Feb-2015	1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	25-Feb-2015	1.5m	**S-CAT-12**	0.013	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-15	25-Feb-2015	1.0m	**S-CAT-12**	5.1	2.7	2.4	10	670	9700	25000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-33	25-Feb-2015	1.0m	**S-CAT-12**	2.1	4.5	4.7	33	570	6500	13000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-37	25-Feb-2015	1.0m	**S-CAT-12**	150	570	180	1200	11000	16000	22000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-44	13-Mar-2015	1.8 - 2.5m	**S-CAT-12**	8.1	8.8	20	77	3100	1100	1900	---	---	0.10	0.19	0.14	0.072	0.044	< 0.10	0.070	0.018	0.10	0.0072	0.23	0.32	0.026	0.92	1.0	0.91	0.22
BIBT1-15-45	13-Mar-2015	1.8 - 2.5m	**S-CAT-12**	19	2.2	18	62	3500	1600	3100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-50	13-Mar-2015	1.8 - 2.5m	**S-CAT-12**	53	1.4	47	160	7600	7100	11000	---	---	0.43	0.25	0.099	0.059	0.092	0.14	0.14	0.032	0.65	0.023	0.021	1.4	0.026	1.5	9.0	3.2	0.20
BIBT1-15-51	13-Mar-2015	1.8 - 2.5m	**S-CAT-12**	11	0.036	26	26	4700	2400	3500	---	3900	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-59	13-Mar-2015	1.5 - 2.0m	**S-CAT-12**	0.053	0.063	0.050	0.21	< 12	49	990	---	2200	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-60	13-Mar-2015	0.75m	**S-CAT-12**	0.026	< 0.020	0.035	0.10	< 12	130	1300	---	2500	< 0.0050	0.007	0.0064	< 0.0050	0.020	< 0.10	0.031	< 0.0050	< 0.0050	0.0076	0.0065	0.0078	0.0059	0.24	0.016	0.026	0.019
BIBT1-16-1	28-Feb-2016	0.3 - 0.5m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	240	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Feb-2016	1.5 - 1.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	300	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	28-Feb-2016	1.5 - 1.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	33	400	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Feb-2016	2.5 - 2.8m	**S-CAT-12**	0.25	< 0.020	0.093	0.13	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-16-2	29-Feb-2016	1.2 - 1.4m	**S-CAT-12**	0.19	< 0.020	0.10	0.14	23	< 10	87	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Feb-2016	2.0 - 2.3m	**S-CAT-12**	1.4	< 0.020	0.046	< 0.040	14	< 10	60	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Feb-2016	3.2 - 3.4m	**S-CAT-12**	1.2	< 0.020	0.074	< 0.040	< 12	< 10	61	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-16-3	29-Feb-2016	0.5 - 0.7m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	120	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Feb-2016	2.2 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	77	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	29-Feb-2016	2.2 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Feb-2016	3.4 - 3.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	56	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-16-10	28-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	190	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	2.5 - 3.0m	**S-CAT-12**	0.15	< 0.020	2.6	1.0	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	28-Sep-2016	2.5 - 3.0m	**S-CAT-12**	0.38	< 0.020	1.5	0.65	20	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	3.0 - 3.5m	**S-CAT-12**	0.048	< 0.020	0.28	0.15	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	4.0 - 4.5m	**S-CAT-12**	0.044	< 0.020	< 0.010	< 0.040	< 12	12	74	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-16-11	28-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	4.0 - 4.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	PHC									PAH																			
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (CCME) (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Calculate CCME IACR (none)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME Residential/Parkland Coarse Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Residential/Parkland Coarse Sub-Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Canada Wide Standards Surface				---	---	---	---	210	150	300	2800	2800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME Canada Wide Standards Sub-Surface				---	---	---	---	700	1000	2500	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-10				0.0234	0.0704	0.0436	0.288	25.2	41.2	422	157	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.008	0.005	0.0078	0.0069	0.005	---	0.0301	0.035	0.0135
S-CAT-11				0.0182	0.0656	0.047	0.34	29.2	43.8	274	90	---	0.005	0.005	0.004	0.008	0.008	---	---	---	0.0176	0.007	0.012	0.01	0.011	---	0.0395	0.0379	0.0192
S-CAT-12				0.005	0.02	0.01	0.04	15.5	27	207	86	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.034	0.005	0.008	0.005	0.0064	---	0.025	0.059	0.0164
BIBT1-16-12	28-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Sep-2016	4.0 - 4.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-16-13	29-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	0.033	0.021	0.072	< 12	850	8400	---	15000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Sep-2016	2.5 - 3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	41	540	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Sep-2016	4.0 - 4.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-16-4	26-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Sep-2016	3.0 - 3.5m	**S-CAT-12**	0.022	< 0.020	< 0.010	< 0.040	< 12	41	150	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Sep-2016	4.0 - 4.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	72	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-16-5	27-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	18	89	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Sep-2016	3.0 - 3.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	55	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-16-6	27-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	80	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	24	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	27-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.014	< 0.020	< 0.010	< 0.040	< 12	22	130	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	3.0 - 3.5m	**S-CAT-12**	1.5	< 0.020	< 0.010	< 0.040	< 12	11	65	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	4.0 - 4.5m	**S-CAT-12**	1.9	< 0.020	< 0.010	< 0.040	< 12	11	76	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-16-7	28-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	50	290	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	28-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	92	340	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.11	< 0.020	< 0.010	< 0.040	< 12	17	75	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	3.0 - 3.5m	**S-CAT-12**	0.18	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	4.0 - 4.5m	**S-CAT-12**	0.66	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-16-8	28-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	84	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	28-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	17	96	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	2.5 - 3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	20	95	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	4.0 - 4.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-16-9	28-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	19	160	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	28-Sep-2016	4.0 - 4.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	55	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-17-1	27-Sep-2017	0.0 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	55	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Sep-2017	1.5 - 2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-17-2	27-Sep-2017	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Sep-2017	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Advisian
WorleyParsons Group

Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	PHC									PAH																		
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50})-Gravimetric (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (mg/kg)	Benzo(a)Pyrene Total Potency Equivalent (CCME) (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyrene (mg/kg)	Calculate CCME IACR (none)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME Residential/Parkland Coarse Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Residential/Parkland Coarse Sub-Surface				1	0.1	50	37	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Canada Wide Standards Surface				---	---	---	---	210	150	300	2800	2800	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME Canada Wide Standards Sub-Surface				---	---	---	---	700	1000	2500	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-10				0.0234	0.0704	0.0436	0.288	25.2	41.2	422	157	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.008	0.005	0.0078	0.0069	0.005	---	0.0301	0.035	0.0135
S-CAT-11				0.0182	0.0656	0.047	0.34	29.2	43.8	274	90	---	0.005	0.005	0.004	0.008	0.008	---	---	---	0.0176	0.007	0.012	0.01	0.011	---	0.0395	0.0379	0.0192
S-CAT-12				0.005	0.02	0.01	0.04	15.5	27	207	86	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.034	0.005	0.008	0.005	0.0064	---	0.025	0.059	0.0164
BIBT1-17-3	27-Sep-2017	0.5 - 1.0m	**S-CAT-12**	0.048	< 0.020	< 0.010	< 0.040	< 10	12	180	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Sep-2017	1.0 - 1.5m	**S-CAT-12**	9.0	8.1	5.8	23	190	45	81	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	27-Sep-2017	1.0 - 1.5m	**S-CAT-12**	17	23	17	63	1300	1500	2100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Sep-2017	3.0 - 3.5m	**S-CAT-12**	16	2.9	8.5	33	1600	770	1100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Coarse-grained Surface soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Coarse-grained Sub-Surface soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Coarse-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates)
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Coarse-grained Sub-Surface Soils, excluding protection of potable groundwater, 2001 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Coarse-grained Surface soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Coarse-grained Sub-Surface soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Coarse-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates)
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Coarse-grained Sub-Surface Soils, excluding protection of potable groundwater, 2001 and updates)

6. Background 95th Percentile Statistical Category:
S-CAT-10: Islands - Organic Surface Soil - 95th Percentile Background
S-CAT-11: Islands - Mineral Surface Soil - 95th Percentile Background
S-CAT-12: Islands - Mineral Subsurface Soil - 95th Percentile Background

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals													
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-2			**18**	**8.0**	**2.5**	**0.04**	**14**	**0.03**	**0.002**	**0.04**	**0.00047**	**0.001**	**0.010**	**12**	**0.001**	**0.025**	**0.02**	**0.001**	**0.0001**	**0.0002**	**0.029**	**0.03**
BI BT1 09-1-4	23-Aug-2010	**W-CAT-2**	100	7.29	0.099	0.010	9	0.002	0.0008	0.03	0.00036	< 0.001	0.0029	10	< 0.0002	0.0009	0.030	0.0006	< 0.0001	< 0.0002	0.033	0.017
	21-Aug-2011		80	7.51	0.16	0.008	5	0.004	0.0010	0.03	0.00039	< 0.001	0.0044	13	< 0.0002	0.0008	0.030	0.0005	< 0.0001	< 0.0002	0.037	0.037
	15-Aug-2012		63	7.28	0.043	0.016	< 2.0	0.0043	0.00076	< 0.020	0.00063	< 0.0010	0.0052	16	< 0.00020	0.00071	0.036	0.00061	< 0.00010	< 0.00020	0.033	0.023
	22-Aug-2013		54	---	0.026	0.012	15	0.0060	0.00076	0.036	0.00064	< 0.0010	0.0055	1.8	< 0.00020	0.00041	0.030	0.00072	< 0.00010	< 0.00020	0.028	0.019
	03-Aug-2014		50	---	0.084	< 0.010	13	0.0053	0.00041	0.038	0.00059	< 0.0010	0.0048	0.85	< 0.00020	0.00044	0.025	0.00038	< 0.00010	< 0.00020	0.031	0.018
	07-Aug-2015		51	---	0.019	0.017	30	< 0.0030	0.00067	0.038	0.00040	< 0.0010	0.0021	9.7	< 0.00020	0.00054	0.027	0.00044	< 0.00010	< 0.00020	0.025	0.017
	08-Aug-2016		20	---	0.042	0.012	---	0.0040	0.00042	0.032	0.00065	< 0.0010	0.0036	3.1	< 0.00020	0.00042	0.024	0.00043	< 0.00010	< 0.00020	0.025	0.020
	10-Aug-2017		12	---	0.017	0.019	---	0.0048	0.00052	0.035	0.00050	< 0.0010	0.0044	6.0	< 0.00020	0.00054	0.029	0.00050	< 0.00010	< 0.00020	0.025	0.016
	17-Jul-2018		---	---	---	---	8.0	0.0069	0.00040	0.029	0.00041	< 0.0010	0.0041	7.9	< 0.00020	0.00051	0.028	0.00047	< 0.00010	< 0.00020	0.024	0.017
BI BT1 09-2-4	23-Aug-2010	**W-CAT-2**	500	7.14	0.005	0.003	22	0.004	0.0049	< 0.02	0.00004	< 0.001	0.0023	31	0.0003	0.0033	0.037	0.0011	< 0.0001	< 0.0002	0.027	0.010
	21-Aug-2011		560	7.21	< 0.03	< 0.03	7	0.02	0.013	< 0.02	0.00008	**< 0.01**	< 0.002	110	< 0.002	< 0.002	0.034	**< 0.002**	**< 0.001**	**< 0.002**	0.022	< 0.03
	15-Aug-2012		520	7.05	< 0.0030	< 0.0030	4.9	0.023	0.017	< 0.020	0.000054	0.0011	0.0017	170	0.00036	0.0012	0.021	0.0015	< 0.00010	< 0.00020	0.012	0.0058
	22-Aug-2013		740	---	0.18	0.024	35	0.030	0.015	0.021	< 0.000025	< 0.0010	0.00081	160	< 0.00020	0.0017	0.026	0.0016	< 0.00010	< 0.00020	0.012	0.0061
BI-14-13-3	03-Aug-2014	**W-CAT-2**	5.5	7.15	0.48	0.048	6.1	0.0076	0.019	< 0.020	< 0.000020	< 0.0010	< 0.00020	33	< 0.00020	0.0042	0.0048	< 0.00020	< 0.00010	< 0.00020	0.0046	< 0.0030
	07-Aug-2015		4.8	7.49	0.011	< 0.010	12	< 0.0030	0.0030	< 0.020	0.000023	< 0.0010	< 0.00020	15	0.00042	0.0050	0.0069	0.00028	< 0.00010	< 0.00020	0.0018	0.025
	09-Aug-2016		4.9	7.61	< 0.010	0.011	3.8	0.0041	0.0058	< 0.020	< 0.000020	< 0.0010	0.00083	15	< 0.00020	0.0035	0.0062	0.00029	< 0.00010	< 0.00020	0.00086	0.020
	11-Aug-2017		4.6	---	< 0.010	< 0.010	6.9	0.0041	0.0030	0.036	0.000023	< 0.0010	0.00093	0.62	< 0.00020	0.0023	0.0030	< 0.00020	< 0.00010	< 0.00020	0.0023	1.1
	15-Jul-2018		---	---	---	---	---	0.0062	0.0040	< 0.020	0.000041	< 0.0010	0.0011	2.6	< 0.00020	0.0030	0.0045	0.00026	< 0.00010	< 0.00020	0.0023	0.92
BIBT1-10-1-3	29-Sep-2010	**W-CAT-2**	280	7.06	< 0.003	0.003	660	0.029	0.020	< 0.02	< 0.00003	< 0.001	0.0011	25	0.0002	0.0028	0.028	0.0025	< 0.0001	< 0.0002	0.0009	0.015
BIBT1-10-2-3	29-Sep-2010	**W-CAT-2**	180	6.79	0.008	0.008	< 2	0.005	0.0052	< 0.02	< 0.00003	< 0.001	0.0019	110	< 0.0002	0.0024	0.011	0.0004	< 0.0001	< 0.0002	0.0079	0.008
	21-Aug-2011		120	7.27	0.007	< 0.003	< 2	< 0.01	0.012	< 0.02	< 0.00005	**< 0.01**	< 0.002	120	< 0.002	< 0.002	0.010	**< 0.002**	**< 0.001**	**< 0.002**	0.007	0.03
BIBT1-12-4-5	15-Aug-2012	**W-CAT-2**	24	7.22	0.0061	< 0.0030	8.9	0.0051	0.021	< 0.020	0.000057	< 0.0010	0.0036	19	0.00026	0.0019	0.037	0.0022	< 0.00010	< 0.00020	0.0081	0.012
	22-Aug-2013		16	7.25	0.0090	0.014	16	0.0058	0.0032	0.034	0.00016	< 0.0010	0.0016	4.7	0.00025	0.0012	0.042	0.0026	< 0.00010	< 0.00020	0.0059	0.018
BIBT1-15-1-3.5	27-Nov-2015	**W-CAT-2**	29	7.15	0.016	< 0.010	500	0.047	0.033	< 0.020	< 0.000020	0.0032	0.0013	45	< 0.00020	0.0059	0.032	0.0027	< 0.00010	< 0.00020	0.014	0.014
	08-Aug-2016		23	7.23	< 0.050	< 0.050	410	0.034	0.019	< 0.020	< 0.000020	0.0026	0.00025	58	< 0.00020	0.0060	0.016	0.0016	< 0.00010	< 0.00020	0.013	0.0095
	10-Aug-2017		13	---	< 0.010	< 0.010	200	0.015	0.011	< 0.020	< 0.000020	0.0012	0.00070	28	< 0.00020	0.0053	0.015	0.0014	< 0.00010	< 0.00020	0.015	0.0061
	17-Jul-2018		18	---	< 0.10	**< 0.10**	120	0.012	0.0091	< 0.020	< 0.000020	0.0010	0.00061	22	< 0.00020	0.0058	0.014	0.0012	< 0.00010	< 0.00020	0.010	0.0068

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals													
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-2			**18**	**8.0**	**2.5**	**0.04**	**14**	**0.03**	**0.002**	**0.04**	**0.00047**	**0.001**	**0.010**	**12**	**0.001**	**0.025**	**0.02**	**0.001**	**0.0001**	**0.0002**	**0.029**	**0.03**
BIBT1-15-2-4	27-Nov-2015	**W-CAT-2**	9.7	7.08	< 0.010	< 0.050	**810**	0.088	**0.031**	< 0.020	< 0.000020	0.0027	0.0011	**42**	< 0.00020	0.0041	0.020	**0.0030**	< 0.00010	< 0.00020	0.0040	0.011
	08-Aug-2016		9.4	7.41	< 0.050	< 0.050	**850**	0.083	**0.029**	< 0.020	< 0.000020	0.0030	< 0.00020	**49**	< 0.00020	0.0046	0.016	**0.0024**	< 0.00010	< 0.00020	0.011	0.0034
(Duplicate)	08-Aug-2016		9.3	7.45	< 0.050	< 0.050	**850**	0.090	**0.030**	< 0.020	< 0.000020	0.0029	< 0.00020	**49**	< 0.00020	0.0047	0.017	**0.0021**	< 0.00010	< 0.00020	0.011	0.0052
	10-Aug-2017		8.8	---	< 0.010	< 0.010	**46**	0.032	**0.032**	< 0.020	< 0.000020	0.0020	0.00041	**34**	< 0.00020	0.0036	0.0045	0.00096	< 0.00010	< 0.00020	0.0040	0.0056
	17-Jul-2018		13	---	< 0.10	**< 0.10**	**71**	0.016	**0.024**	< 0.020	< 0.000020	0.0012	0.00049	**32**	< 0.00020	0.0018	0.0034	0.00093	< 0.00010	< 0.00020	0.0017	0.0062
(Duplicate)	17-Jul-2018		13	---	< 0.10	**< 0.10**	**79**	0.018	**0.027**	< 0.020	< 0.000020	0.0014	0.00031	**35**	< 0.00020	0.0018	0.0030	**0.0011**	< 0.00010	< 0.00020	0.0017	0.0057
BIBT1-15-4-4	11-Aug-2017	**W-CAT-2**	**140**	---	0.29	< 0.010	7.0	0.0082	0.0021	0.028	0.000073	< 0.0010	0.0012	1.1	< 0.00020	0.0027	0.0091	0.00032	< 0.00010	< 0.00020	0.0063	0.0073
	15-Jul-2018		5.4	---	0.31	< 0.010	< 2.0	**0.25**	0.0022	0.024	0.00013	< 0.0010	0.0035	1.9	0.0012	0.00087	0.0067	0.00020	< 0.00010	< 0.00020	0.0041	0.023
BIBT1-15-5-3	27-Nov-2015	**W-CAT-2**	71	7.21	< 0.010	< 0.010	< 2.0	< 0.0030	0.0039	< 0.020	0.000044	< 0.0010	0.0010	**16**	< 0.00020	0.0016	0.010	< 0.00020	< 0.00010	< 0.00020	0.0059	0.023
(Duplicate)	27-Nov-2015		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2016		9.3	7.69	0.064	< 0.010	< 2.0	0.016	0.0014	< 0.020	0.000071	< 0.0010	0.00047	0.66	< 0.00020	0.0018	0.0071	< 0.00020	< 0.00010	< 0.00020	0.0032	0.0090
	11-Aug-2017		8.2	---	0.27	< 0.010	< 2.0	0.0040	0.00023	< 0.020	0.00012	< 0.0010	0.0020	< 0.060	< 0.00020	0.0026	0.0030	< 0.00020	< 0.00010	< 0.00020	0.0017	0.0090
BIBT1-15-7-4	27-Nov-2015	**W-CAT-2**	10	7.32	< 0.010	< 0.010	3.7	0.0053	**0.032**	0.032	< 0.000020	< 0.0010	0.00066	**17**	< 0.00020	0.0077	0.0080	< 0.00020	< 0.00010	< 0.00020	0.00090	0.0097
	08-Aug-2016		17	7.36	0.026	0.013	< 4.0	0.0049	0.00051	0.030	0.00023	< 0.0010	0.00079	0.075	< 0.00020	0.0011	0.025	0.00026	< 0.00010	< 0.00020	0.0048	**0.031**
	11-Aug-2017		11	---	0.097	< 0.010	7.8	0.0076	0.00056	< 0.020	0.00017	< 0.0010	0.0015	2.9	< 0.00020	0.00095	0.0091	< 0.00020	< 0.00010	< 0.00020	0.0026	0.025
	15-Jul-2018		17	---	< 0.010	< 0.010	---	0.012	**0.0060**	< 0.020	0.00012	< 0.0010	0.0031	**48**	< 0.00020	0.0031	0.028	**0.0011**	< 0.00010	< 0.00020	0.0033	0.029
	17-Jul-2018		---	---	---	---	8.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-8-4	10-Aug-2016	**W-CAT-2**	6.6	7.50	< 0.010	< 0.010	8.1	0.0074	0.0023	0.055	0.00025	< 0.0010	0.00066	**39**	< 0.00020	0.0027	0.067	< 0.00020	< 0.00010	< 0.00020	0.0066	**0.071**
BIBT1-16-1-3	11-Aug-2017	**W-CAT-2**	13	---	< 0.010	< 0.010	3.8	0.0052	0.00071	0.028	0.00010	< 0.0010	0.0010	5.3	< 0.00020	0.0035	0.0067	< 0.00020	< 0.00010	< 0.00020	0.0038	**0.037**
	15-Jul-2018		6.4	---	0.064	< 0.010	4.0	< 0.0030	0.0021	0.029	0.000044	< 0.0010	0.00086	0.14	< 0.00020	0.0099	0.0042	0.00020	< 0.00010	< 0.00020	0.0032	0.0040
BIBT1-16-2-3	11-Aug-2017	**W-CAT-2**	17	---	< 0.010	< 0.010	3.4	0.0049	0.0022	0.034	0.00016	< 0.0010	0.00084	**13**	< 0.00020	0.0025	0.017	0.00025	< 0.00010	< 0.00020	0.0026	**0.031**
	15-Jul-2018		5.6	---	0.016	< 0.010	**39**	0.0034	0.0018	0.022	0.00012	< 0.0010	0.00095	0.53	< 0.00020	0.0016	0.0060	0.00025	< 0.00010	< 0.00020	0.0031	0.013
(Duplicate)	15-Jul-2018		5.7	---	0.013	< 0.010	**42**	0.0035	0.0015	0.023	0.00012	< 0.0010	0.0012	0.72	< 0.00020	0.0014	0.0063	0.00023	< 0.00010	< 0.00020	0.0032	0.014
BIBT1-16-3-3	03-Oct-2016	**W-CAT-2**	13	7.42	0.012	< 0.010	3.3	0.0044	0.0050	0.040	< 0.000020	< 0.0010	0.00056	0.89	< 0.00020	0.0039	0.0086	0.00039	< 0.00010	< 0.00020	0.0045	0.0090
	11-Aug-2017		9.9	---	< 0.010	< 0.010	< 2.0	< 0.0030	0.0016	0.021	0.000029	< 0.0010	0.00056	4.1	< 0.00020	0.0028	0.0056	< 0.00020	< 0.00010	< 0.00020	0.0029	0.0097
	15-Jul-2018		5.1	---	0.032	< 0.010	2.4	0.0065	0.00081	< 0.020	0.000041	< 0.0010	0.0015	< 0.060	< 0.00020	0.0020	0.0030	0.00027	< 0.00010	< 0.00020	0.0011	< 0.0030

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-2: Bear, Goose, and Frenchy's Islands - Surficial Sediments - 95th Percentile Background

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Table 4
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH								
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-2			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**	**0.00010**	**0.000010**	**0.000009**	**0.0000075**	**0.00001**	**0.00005**	**0.0001**	**0.00006**	**0.000020**
BI BT1 09-1-4	23-Aug-2010	**W-CAT-2**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	15-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	22-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	03-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	07-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	08-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	10-Aug-2017		**0.0023**	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	17-Jul-2018		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI BT1 09-2-4	23-Aug-2010	**W-CAT-2**	**1.3**	< 0.0004	**0.0010**	< 0.0008	**0.25**	**0.2**	---	---	---	---	---	---	---	---	---
	21-Aug-2011		**0.36**	< 0.0004	**0.0007**	< 0.0008	**0.22**	0.1	---	---	---	---	---	---	---	---	---
	15-Aug-2012		**1.2**	< 0.00040	**0.00083**	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	22-Aug-2013		**0.69**	< 0.00040	**0.00072**	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
BI-14-13-3	03-Aug-2014	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	07-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	09-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	15-Jul-2018		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-10-1-3	29-Sep-2010	**W-CAT-2**	**12**	**6.9**	**0.5**	**3.4**	< 0.1	**3.8**	---	---	---	---	---	---	---	---	---
BIBT1-10-2-3	29-Sep-2010	**W-CAT-2**	< 0.0004	< 0.0004	**0.0015**	< 0.0008	< 0.1	**0.5**	---	---	---	---	---	---	---	---	---
	21-Aug-2011		**0.0014**	< 0.0004	**0.0039**	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---
BIBT1-12-4-5	15-Aug-2012	**W-CAT-2**	**0.22**	**0.89**	**0.35**	**1.4**	**11**	**22**	---	---	---	---	---	---	---	---	---
	22-Aug-2013		**0.00097**	**0.00096**	**0.00042**	**0.0038**	**0.39**	**4.8**	---	---	---	---	---	---	---	---	---
BIBT1-15-1-3.5	27-Nov-2015	**W-CAT-2**	**22**	**7.7**	**0.44**	**1.5**	**11**	**1.4**	---	---	---	---	---	---	---	---	---
	08-Aug-2016		**21**	**0.98**	**0.25**	**0.75**	< 0.1	**0.35**	---	---	---	---	---	---	---	---	---
	10-Aug-2017		**12**	**0.0070**	**0.063**	**0.051**	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	17-Jul-2018		**17**	**0.14**	**0.24**	**0.088**	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
BIBT1-15-2-4	27-Nov-2015	**W-CAT-2**	**17**	**7.4**	**0.6**	**2.5**	**10**	**0.80**	---	---	---	---	---	---	---	---	---
	08-Aug-2016		**18**	**4.3**	**0.42**	**2.2**	< 0.1	**0.64**	---	---	---	---	---	---	---	---	---
(Duplicate)	08-Aug-2016		**17**	**4**	**0.37**	**2.2**	< 0.1	**0.62**	---	---	---	---	---	---	---	---	---
	10-Aug-2017		**11**	**0.24**	**0.36**	**1.1**	< 0.10	**0.24**	---	---	---	---	---	---	---	---	---
	17-Jul-2018		**4.2**	**0.18**	**0.45**	**0.77**	**2.9**	**0.61**	---	---	---	---	---	---	---	---	---
(Duplicate)	17-Jul-2018		**4.7**	**0.15**	**0.45**	**0.74**	**2.5**	**0.65**	---	---	---	---	---	---	---	---	---
BIBT1-15-4-4	11-Aug-2017	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	15-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
BIBT1-15-5-3	27-Nov-2015	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
(Duplicate)	27-Nov-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	08-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
BIBT1-15-7-4	27-Nov-2015	**W-CAT-2**	**0.0061**	**0.0048**	**0.51**	**0.65**	**2.2**	**1.4**	---	---	---	---	---	---	---	---	---
	08-Aug-2016		**0.0010**	< 0.00040	**0.0012**	**0.0057**	**0.85**	**2.3**	---	---	---	---	---	---	---	---	---
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	15-Jul-2018		**0.00061**	< 0.00040	**0.00058**	**0.0047**	**0.26**	< 0.10	---	---	---	---	---	---	---	---	---
	17-Jul-2018		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIBT1-15-8-4	10-Aug-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
BIBT1-16-1-3	11-Aug-2017	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	15-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
BIBT1-16-2-3	11-Aug-2017	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	15-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
(Duplicate)	15-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
BIBT1-16-3-3	03-Oct-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.00010	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	15-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

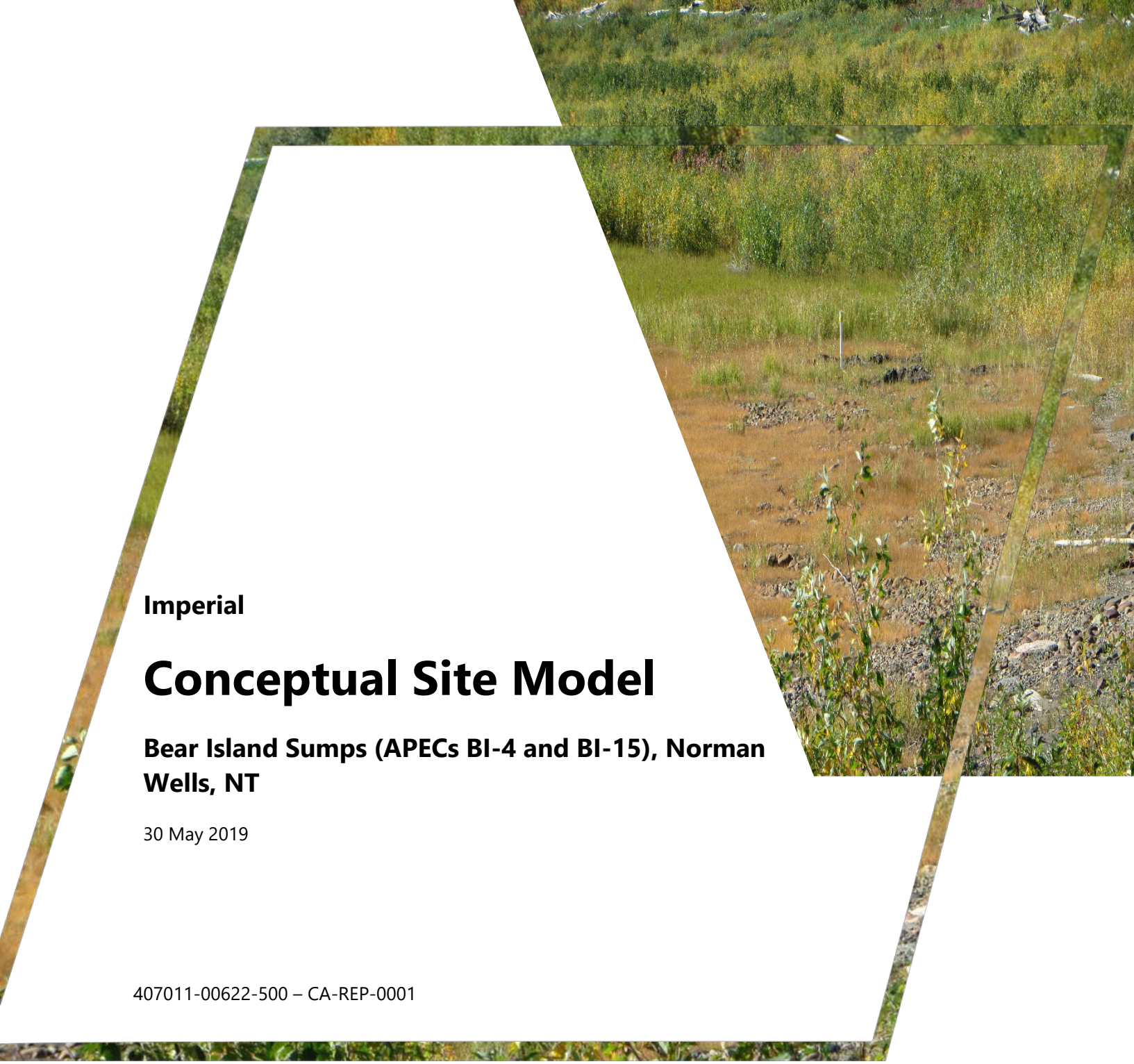
Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-2: Bear, Goose, and Frenchy's Islands - Surficial Sediments - 95th Percentile Background

Appendix 10
Conceptual Site Model: Bear Island Sumps



Imperial

Conceptual Site Model

Bear Island Sumps (APECs BI-4 and BI-15), Norman Wells, NT

30 May 2019

407011-00622-500 – CA-REP-0001

Advisian
Suite 500, 151 Canada Olympic Rd SW
Calgary, AB T3B 6B7 CANADA
Phone: +1 403 247 0200
Facsimile: +1 403 247 4811
www.advisian.com

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Project No. 407011-00622-500-CA-REP-0001 - Conceptual Site Model: Bear Island Sumps (APECs BI-4 and BI-15), Norman Wells, NT

Rev	Description	Originator Approval	Reviewer Approval	Project Manager Approval	Date
0	Issued as Final	R. Reader / A. Haigh	M. Brown	S. Gibb	30-May-19

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1. Conceptual Site Model Summary

Site Description

LAND USE

Site Description:	Sumps 1 through 5: Wetland areas over collapsed sumps 1, 2, 3, 4, 5. Raised access road surrounding Sumps 1 and 2. Unnamed lake south of Sumps 3, 4 and 5 (Figure 1). Sump 6: Wetland Area with no surrounding infrastructure. Unnamed lakes to the NE and SW (Figure 1)
Current Land Use:	CCME Industrial land use.
Future Land Use:	CCME Parkland land use.

HISTORICAL LAND USE

Infrastructure type:	Waste Fluid Sumps (Figure 2A and 2B).
Notes:	Primarily Drilling Fluids.
Years Active:	Sumps 1 through 5: From air photos, interpreted to be circa 1983 to approximately 1992 (Figure 2A). Sump 6: From air photos, interpreted to be circa 1996 to approximately early 2000's (Figure 2B).

SITE SETTING

Topography and Drainage:	Sumps 1 through 5: Site is generally flat with little evidence of surface water drainage from collapsed sump areas (Figure 3). Sump 6: Site slopes gently to the north. Area to northeast of site slopes sharply to an unnamed lake (Figure 3).
Nearby Surface Water Bodies (Distance and Direction):	Sumps 1 through 5: Unnamed Lake (40 m south at closest point). Mackenzie River (370 m north at closest point) (Figure 1). Sump 6: Unnamed Lake (50 m southwest). Unnamed Lake (60 m northeast). Mackenzie River (250 m north) (Figure 1).

SOIL AND GROUNDWATER CONDITIONS

Surficial Materials:	Sumps 1 through 5: Clayey sand, silty sand. Sump 6: Silt, Sandy Silt.
Depth to Permafrost:	Sumps 1 through 5: ~ 0.6 to 2.8 mbgs – Discontinuous, not encountered in some locations due to limited depth of investigation. Sump 6: ~ 0.1 to 4.0 mbgs.
Depth to Bedrock:	Sumps 1 through 5: not encountered to an investigation depth of 4.8 mbgs. Sump 6: not encountered to an investigation depth of 4.5 mbgs.
Bedrock Lithology:	not encountered.
Number of Groundwater-Bearing Zones:	1
Number of Piezometers:	Sumps 1 through 5: 21 current, 3 historical now destroyed/decommissioned. Sump 6: 7 current, 0 historical now destroyed/decommissioned.
Free Product in Upper GW-Bearing Zone:	Sumps 1 through 5: not encountered. Sump 6: not encountered.
Free Product in Secondary GW-Bearing Zone:	Sumps 1 through 5: NA. Sump 6: NA.

First Groundwater-Bearing Zone

Primary Soil Type/Lithology:	Sumps 1 through 5: Clayey sand, silty sand. Sump 6: Silt, Sandy Silt.
Dominant Grain Size:	Fine (assumed porosity n=0.1)
Depth to Groundwater Surface:	Sumps 1 through 5: ~ 0.5 – 1.8 mbgs Sump 6: ~ 0.7 – 2.5 mbgs
Hydraulic Conductivity (Minimum):	Sumps 1 through 5: 8.8×10^{-8} m/s Sump 6: 8.5×10^{-7} m/s
Hydraulic Conductivity (Maximum):	Sumps 1 through 5: 3.7×10^{-7} m/s Sump 6: 3.4×10^{-6} m/s

Hydraulic Conductivity (Geometric Mean K):	Sumps 1 through 5: 1.8 x 10^{-7} m/s Sump 6: 1.8 x 10^{-6} m/s
Vertical Hydraulic Gradient:	Not assessed (underlain by discontinuous permafrost; wells have only been installed in uppermost water-bearing zone).
Lateral Hydraulic Gradient (I):	Sumps 1 through 5: Area is interpreted to have negligible lateral hydraulic gradient. Sump 6: Area is interpreted to have negligible lateral hydraulic gradient. Area directly north slopes sharply to an unnamed lake, lateral hydraulic gradient estimated to be 0.1.
Groundwater Flow Direction and Velocity:	Sumps 1 through 5: Northwest towards Mackenzie River or south towards unnamed lake; velocity not calculated as lateral gradients are poorly defined. Sump 6: Northeast towards unnamed lake; velocity not calculated.

HISTORICAL ENVIRONMENTAL ACTIVITIES

Soil and groundwater characterization (1997 to present)

CURRENT STATUS

Remaining soil and groundwater impacts (Figures 6A-D and 7A-D)

Sources and Impacts

SOURCES

Historical Sources:	Buried Drilling Waste.
Current Sources:	Impacted soil and groundwater (secondary source).

KNOWN ENVIRONMENTAL CONCERNS

a. Soil

Potential Contaminants of Concern:	Petroleum hydrocarbons (PHCs), salinity, metals, PAHs.
Proven Contaminants of Concern:	Sumps 1 through 5: PHCs - BTEX, PHC F1 to F4G. Salinity – EC, SAR – may be partially attributable to natural background. Metals – barium.

Proven Contaminants of Concern:	Sump 6: PHCs – PHC F2. Salinity – EC, SAR.
Lateral Delineation:	Sumps 1 through 5: Lateral delineation of sumps areas not fully achieved. Some delineation around individual sumps to the east and north. Potential for unrelated sources encountered during delineation drilling attempts (for example, Former AST area southeast of Sump #1, Figure 6C). Large footprint of sumps, limited access due to wet ground and dense brush, separate adjacent APECs (BIBT1, R-36X) and above-ground infrastructure limit potential delineation in several areas. Sump 6: Lateral delineation not fully achieved. PHC impacts are fully delineated. Salinity impacts are delineated to the south only, topography toward lake to the northeast is an issue limiting further delineation in that area.
Vertical Delineation:	Sumps 1 through 5: Vertical delineation of PHC and salinity not achieved for identified impacts at approximately 4.5 mbgs. Sump 6: Vertical delineation of PHC impacts achieved at approximately 3.5 mbgs. Salinity impacts not delineated to a depth of approximately 4.5 mbgs.
b. Groundwater	
Potential Contaminants of Concern:	Petroleum hydrocarbons, metals, phenols, PAHs, salinity.
Proven Contaminants of Concern:	Sumps 1 through 5: PHCs - BTEX, PHC F1 to F2 Chloride Metals – may be partially attributable to natural background Phenols – may be partially attributable to natural background Sump 6: Chloride, Metals, Phenols
Presence of Free Product:	No free phase identified during recent events

Lateral Delineation:	Sumps 1 through 5: Chloride, metals and phenol impact delineation is incomplete. May be partially attributable to natural background. Most wells are in, or directly adjacent to the sumps, and are for characterization, not delineation purposes. PHC impacts in 2018 only appear southeast of Sump 2 and may be associated with a separate APEC. Former wells in Sumps 3 and 4 (BIS-10-1-3 and BIS-10-2-3) also exhibited PHC impacts. The PHC impacts are not fully delineated. Sump 6: Chloride impacts are delineated to the south, east and west. Delineation to the north, towards and unnamed water body, has not been achieved. Phenols and metals above guideline are observed in all groundwater wells and the unnamed water body. May be partially attributable to natural background.
Vertical Delineation:	Only the upper groundwater-bearing zone to approximately 2-4 mbgs is currently instrumented. Permafrost has been noted in a few local boreholes between 0.1 and 4 mbgs and may provide a hydraulic barrier at depth; however, permafrost is discontinuous, particularly around Sumps 1 through 5.

Migration Pathways and Receptors

MIGRATION PATHWAYS

Summarized in Figures 8 and 9. Potential pathways include direct contact with soil, leaching from soil to groundwater, lateral migration in groundwater and discharge to surface water.

RECEPTORS

Summarized in Figures 8 and 9. Main receptors of interest are plants and invertebrates, and wildlife accessing local surface water collected in collapsed Sumps 1 through 5, or natural surface water bodies adjacent to sumps.

EXPOSURE PATHWAYS

Summarized in Figures 8 and 9.

Synopsis of Conceptual Risk

In terms of soil related exposure pathways, human, ecological, microbial and wildlife contact or ingestion are potentially active at the sites. The pathway for leaching from soil to groundwater is active, as salinity impacts are found in shallow groundwater. Plants and soil invertebrates may be receptors in the rooting zone of shallow soils.

In terms of groundwater related exposure pathways, PHCs exceeding the applied guidelines are generally not found in groundwater at the Sumps. Chloride and phenol concentrations in groundwater have the potential to discharge to local surface water bodies, or could be present in the surface water above the collapsed sumps. Groundwater flow appears to be relatively stagnant in the area, potentially confined by discontinuous permafrost laterally and vertically. As such the exposure scenarios related to wildlife watering and freshwater aquatic life at the water bodies within the collapsed sumps and to the south would be considered complete and potentially active. Discharge to the Mackenzie River is unlikely based on current delineation and poorly defined lateral gradients. In terms of groundwater consumption, the exposure scenario is incomplete for both humans and wildlife. Human drinking water is sourced locally from the Mackenzie River on the opposite side of the river, and is treated by the Town of Norman Wells before use.

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If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions, and recommendations in this report may be necessary.

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Figures

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AIR PHOTO SOURCE: PLANET LABS GEOMATICS CORP.,
DATE: APRIL 6 AND 30, 2017

3TM NAD27

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1:10000

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CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

SITE LOCATION MAP

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FIG No
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CONCEPTUAL SITE MODEL
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HISTORICAL AIR PHOTO 1997 (SUMP #6)

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FIG No 2B

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FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-BIS_AIRPHOTOS_1992_1997.DWG

Site Boundary

Elevation Contour (2.5m interval)

Elevation Contour (0.5m interval)

Source:
Airborne Imaging; 2012

0 100 200
Metres
1:6,000
NAD 1983 UTM Zone 9N

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

SITE PLAN SHOWING TOPOGRAPHY

OneWay™ to zero harm

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03-MAY-19	T.G.	T.G.	. .

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407011-00622-500

FIG No
3

REV
A

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PLOT DATE & TIME: never never
SAVE DATE & TIME: 2019-05-03 1:23:40 PM
USER NAME: Tom Graham
ISSUING OFFICE: CALGARY GIS

FILE LOCATION: N:\PROJECTS\ImperialOil\NormanWells\MXDs\407011-00622.500\Conceptual Site Model\BIS\BearIslandSumps_Topography_RevA.mxd

LEGEND

- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- PIPELINE
- MONITORING WELL LOCATION
- SOIL SAMPLING LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- TEST PIT LOCATION
- SURFACE WATER SAMPLE LOCATION

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 50 100 m

1:2000

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

SITE PLAN SHOWING SAMPLING LOCATIONS (SUMPS 1-5)

Date:	Drawn by:	Edited by:	App'd by:
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WorleyParsons Project No. 407011-00622-500

FIG No 4A | REV B

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SAVE DATE & TIME: 29/5/2019 2:45:31 PM
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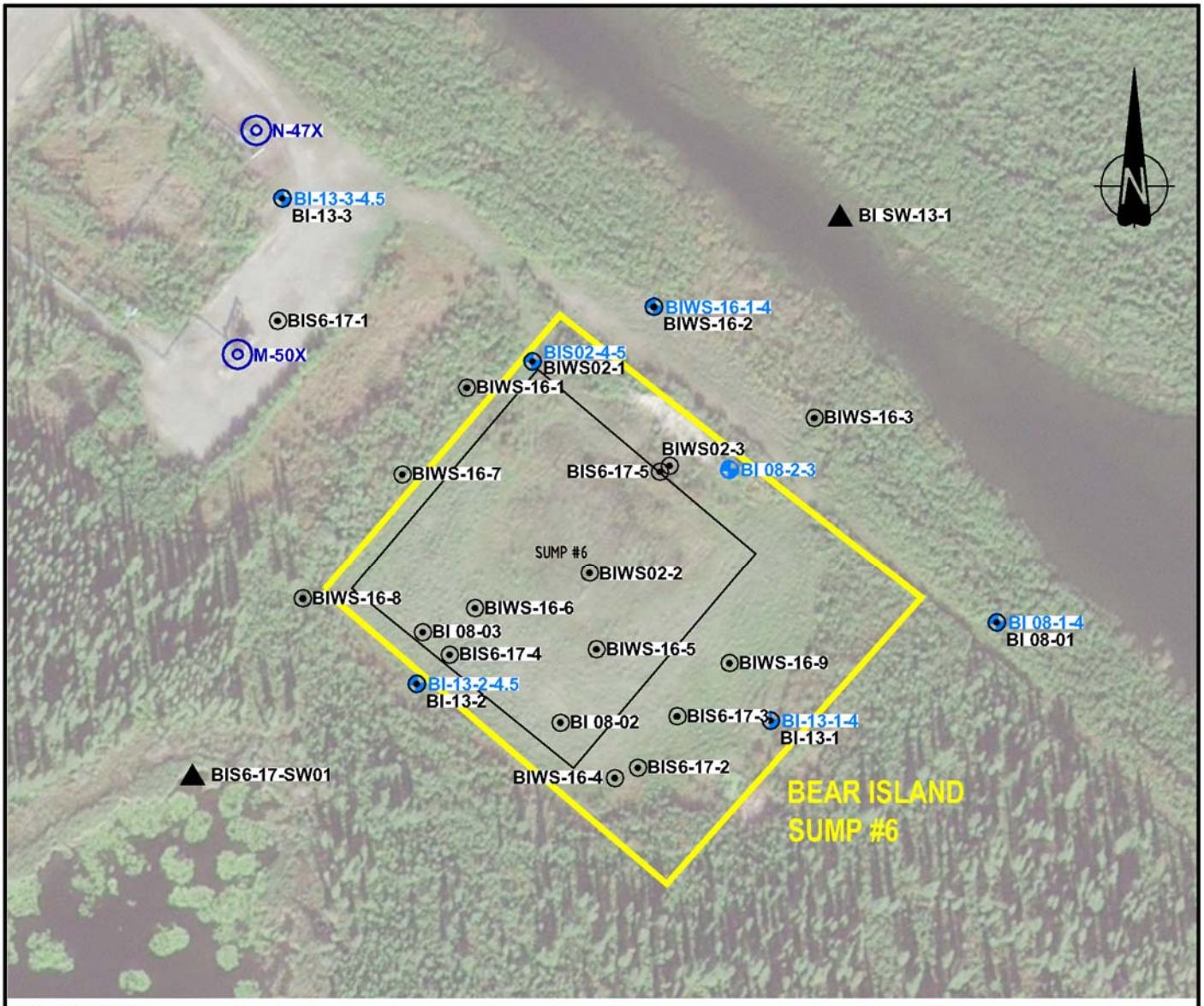
ISSUING OFFICE: CALGARY

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018-BEARISLAND_CSM.DWG



LEGEND

- INJECTION WELL LOCATION
- MONITORING WELL LOCATION
- SOIL SAMPLING LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- TEST PIT LOCATION
- SURFACE WATER SAMPLE LOCATION

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 50 100 m

1:2000

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

SITE PLAN SHOWING SAMPLING LOCATIONS (SUMP 6)

Date:	Drawn by:	Edited by:	App'd by:
29-MAY-19	OTHERS	BMF	

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FIG No: 4B
REV: B

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ISSUING OFFICE: eCAD
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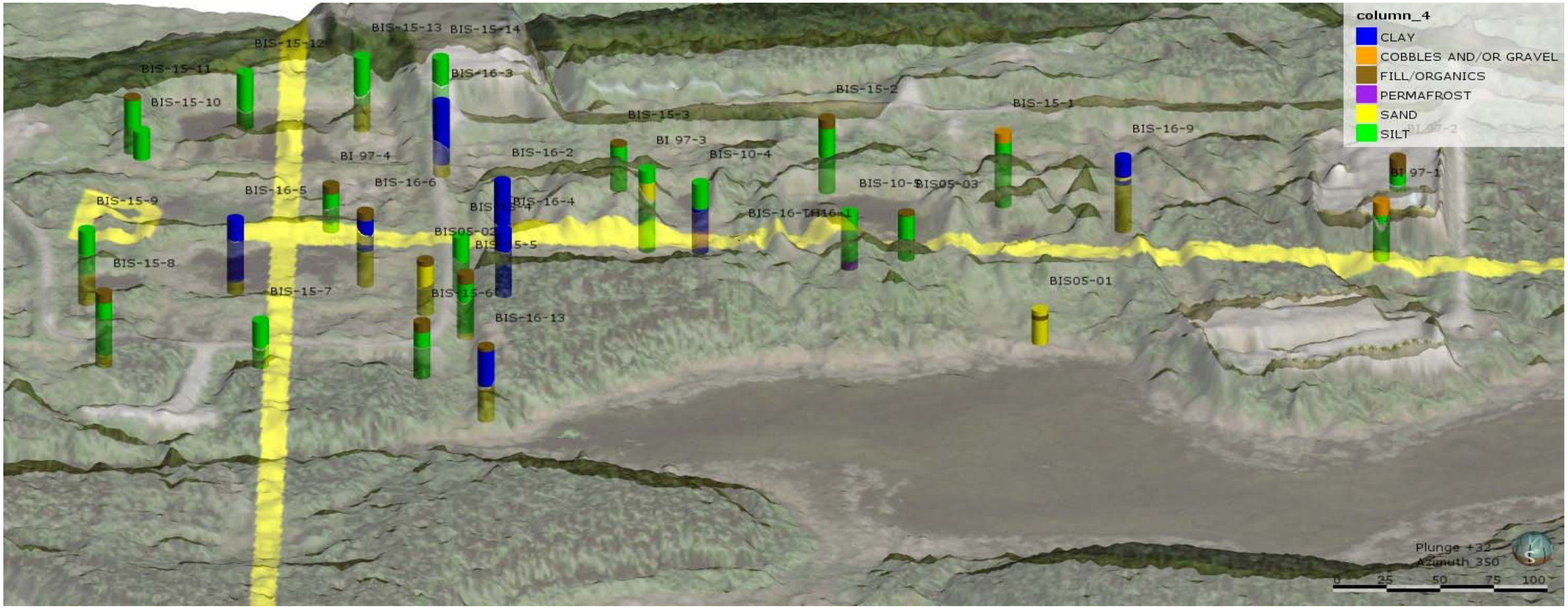
SAVE DATE & TIME: 29/5/2019 2:45:31 PM

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018-BEARISLAND_CSM.DWG

NORTH



IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

SITE PLAN 3-D VISUALIZATION (SUMPS 1-5)

Date: 10-May-19	Drawn by: AM	Edited by: RR	App'd by:

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WorleyParsons Project No. 407011-00622-500

FIG No. 5A | REV A

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FILE LOCATION: CALGARY

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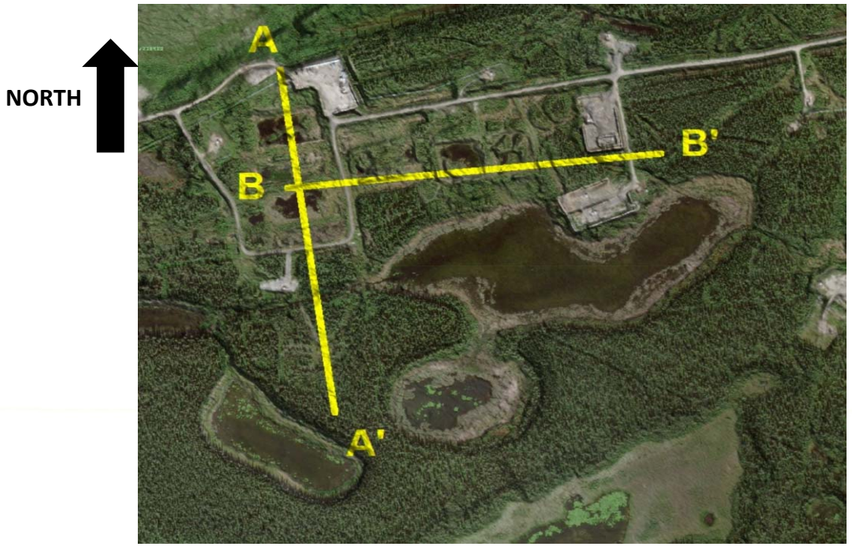

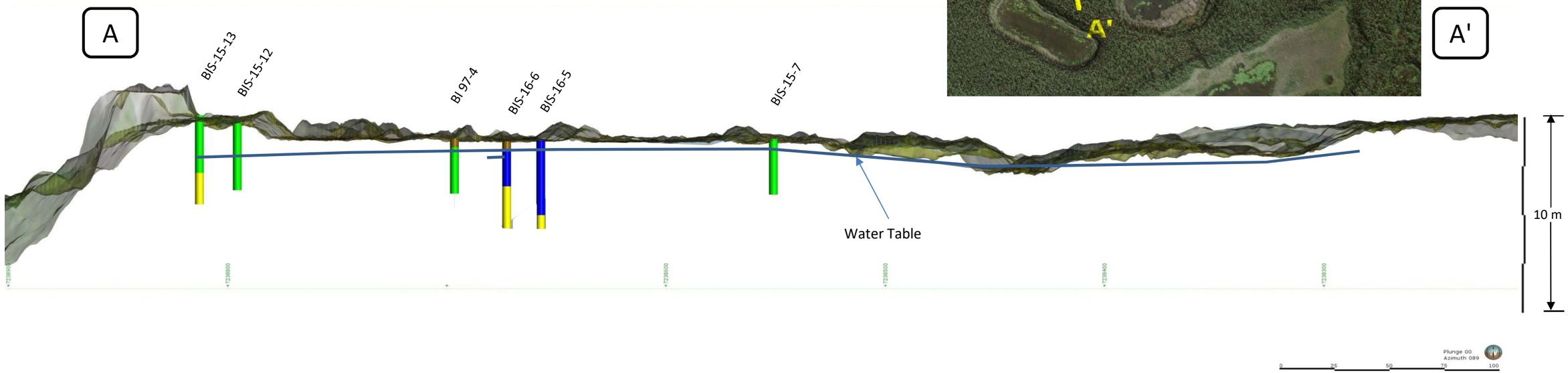

CLAY
COBBLES AND/OR GRAVEL
FILL/ORGANICS
PERMAFROST
SAND
SILT

NOTES: 5x Vertical Exaggeration
Cross-Section width is 100 m

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

CROSS-SECTION A-A' (SUMPS 1-5; NORTH TO SOUTH)

Date: 10-May-19	Drawn by: AM	Edited by: RR	App'd by:

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WorleyParsons Group

WorleyParsons Project No.
407011-00622-500

FIG No. 5B | REV A

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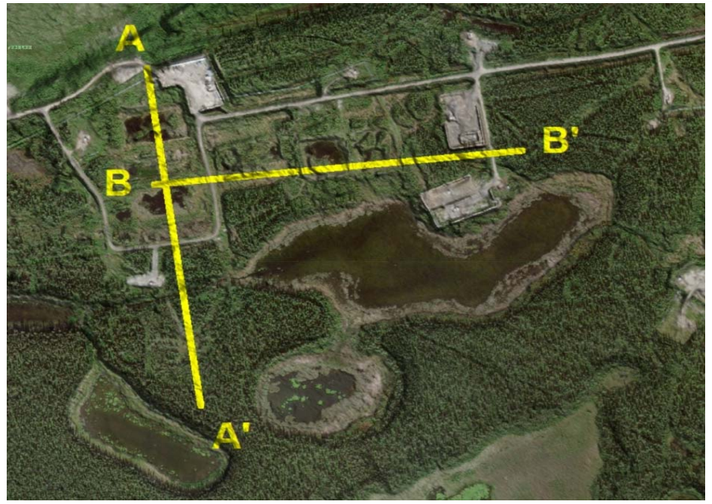

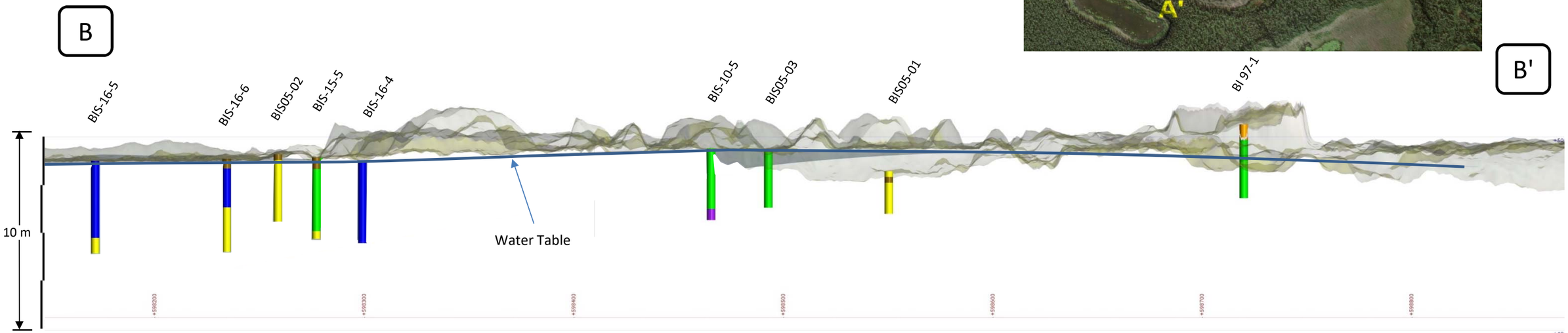

CLAY
COBBLES AND/OR GRAVEL
FILL/ORGANICS
PERMAFROST
SAND
SILT

NOTES: 10x Vertical Exaggeration
Cross-Section width is 100 m

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

CROSS-SECTION B-B' (SUMPS 1 TO 5; WEST TO EAST)

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OneWay to zero harm

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WorleyParsons Project No.
407011-00622-500

FIG No. 5C

REV A

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NORTH

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

SITE PLAN 3-D VISUALIZATION (SUMP 6)

Date:	Drawn by:	Edited by:	App'd by:
10-May-19	AM	RR	

OneWay™ to zero harm

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FIG No. 5D

REV A

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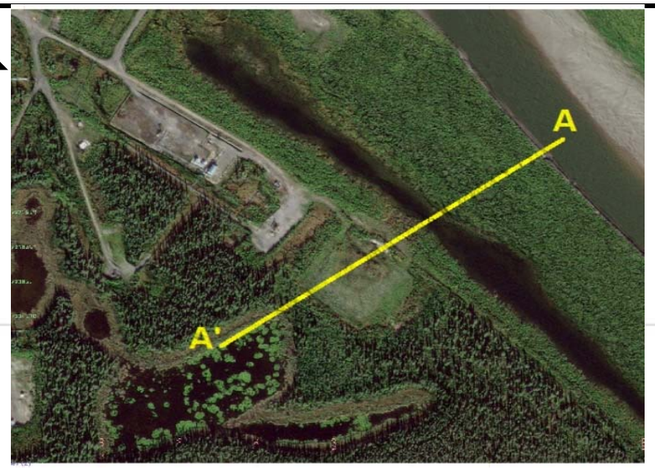
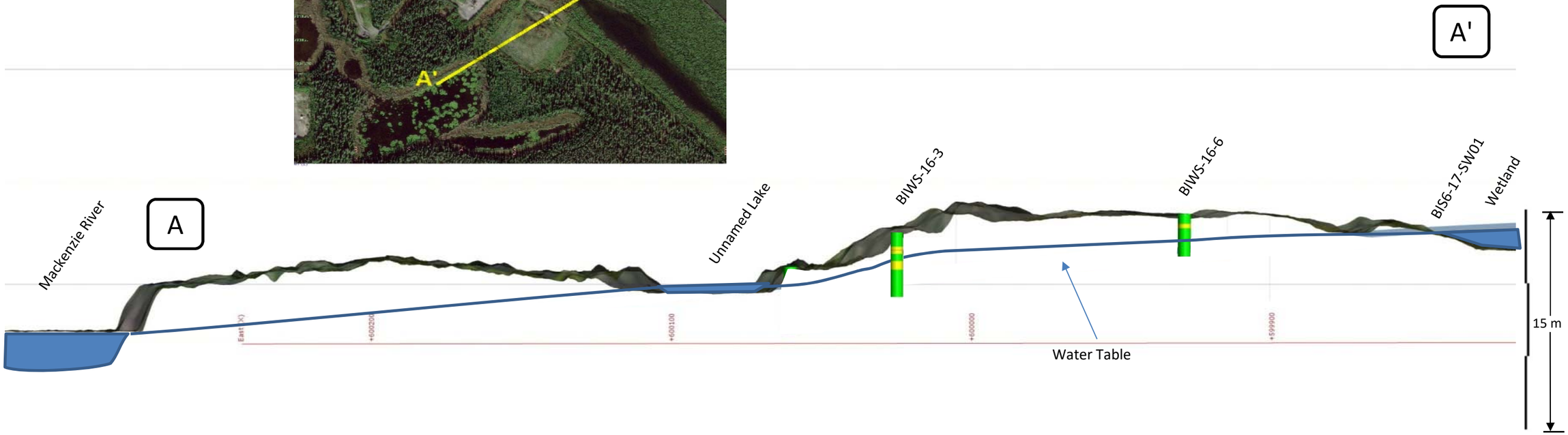
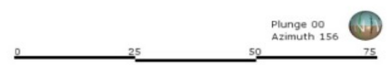


NORTH





- CLAY
- COBBLES AND/OR GRAVEL
- FILL/ORGANICS
- PERMAFROST
- SAND
- SILT

NOTES: 5x Vertical Exaggeration
Cross-Section width is 25 m

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

CROSS-SECTION A-A' (SUMP 6; NORTHEAST TO SOUTHWEST)

Date:	Drawn by:	Edited by:	App'd by:
10-May-19	AM	RR	

OneWay to zero harm

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WorleyParsons Project No.
407011-00622-500

FIG No. 5E

REV A

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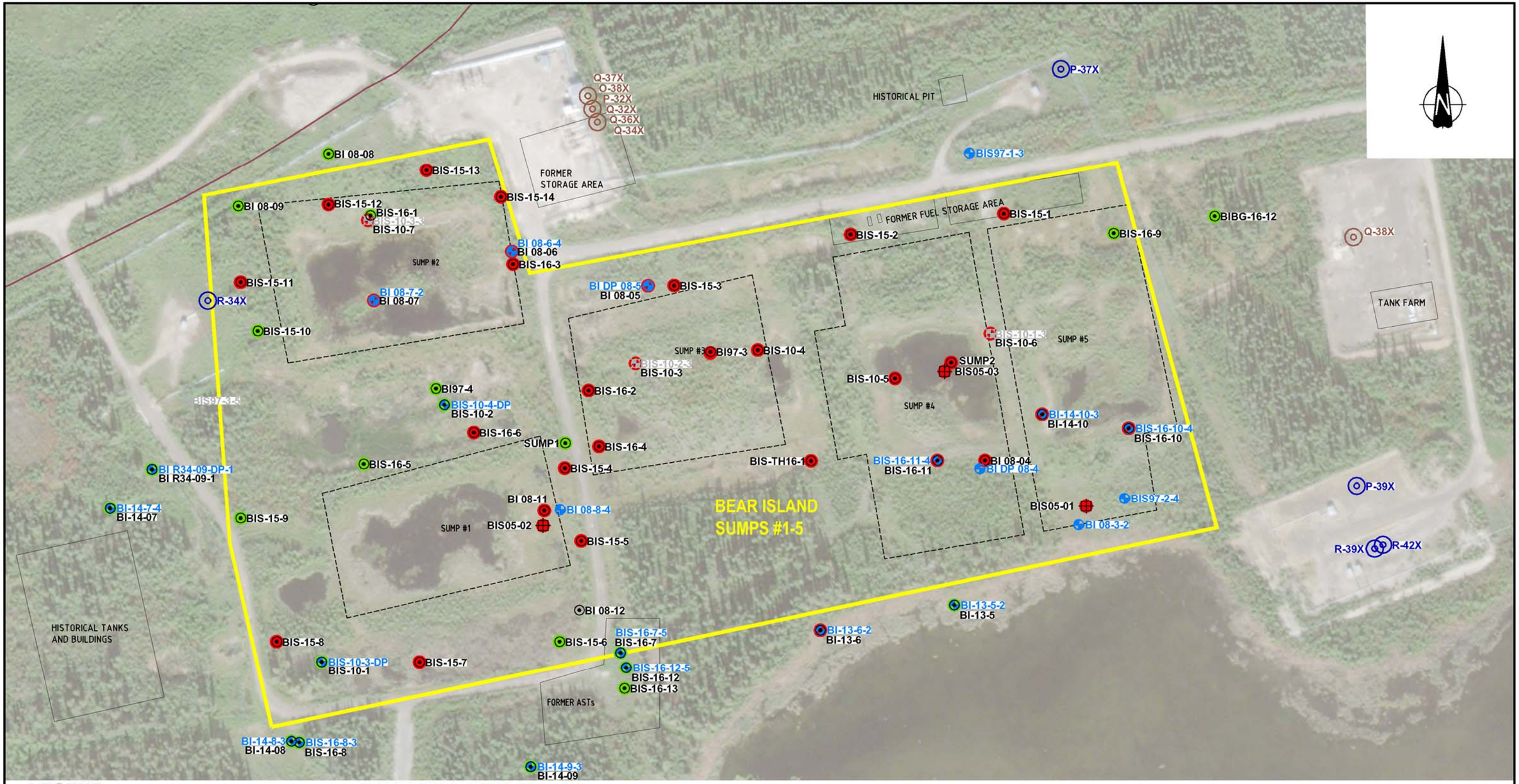
FILE DIRECTORY: U:\CALGBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.5_PDF_FINAL_FIGURES\2 - CSMS\6 - BIS



LEGEND

- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- PIPELINE
- MONITORING WELL LOCATION
- SOIL SAMPLING LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- TEST PIT LOCATION

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLICABLE ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLICABLE ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED, SHOWN IN RED

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 — 50 — 100 m

1:2000

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

SOIL ANALYTICAL RESULTS:
INORGANIC PARAMETERS (SUMPS 1-5)

Date:	Drawn by:	Edited by:	App'd by:
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WorleyParsons Project No.: 407011-00622-500
FIG No.: 6A
REV: A

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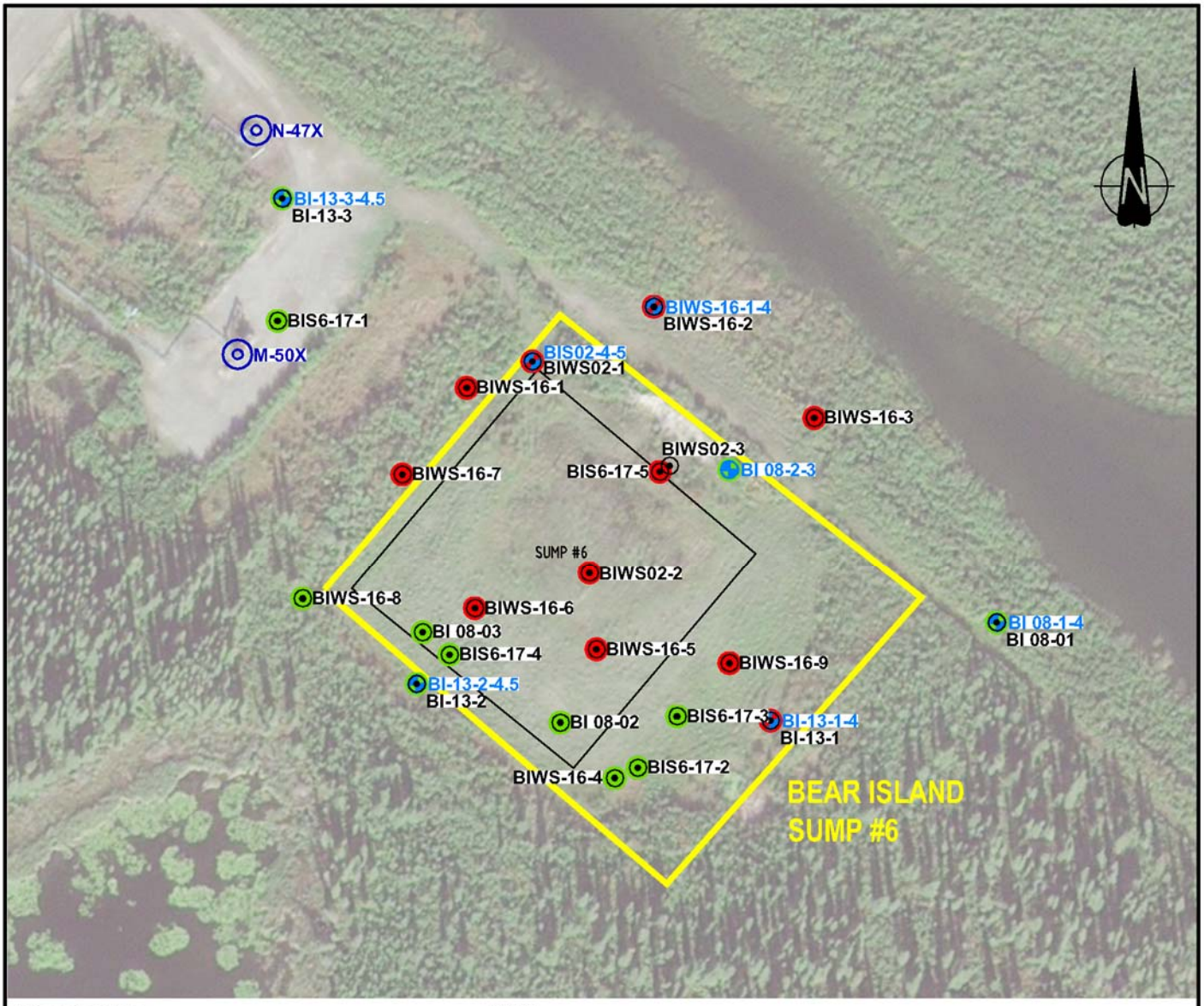
USER NAME: blair.fox
ISSUING OFFICE: CALGARY

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018-BEARISLAND_CSM.DWG



LEGEND

- INJECTION WELL LOCATION
- MONITORING WELL LOCATION
- SOIL SAMPLING LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- TEST PIT LOCATION

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLICABLE ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLICABLE ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED, SHOWN IN RED

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 50 100 m

1:2000

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

SOIL ANALYTICAL RESULTS: INORGANIC PARAMETERS (SUMP 6)

Date:	Drawn by:	Edited by:	App'd by:
03-MAY-19	OTHERS	BMF	

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WorleyParsons Project No.
407011-00622-500

FIG No: 6B
REV: A

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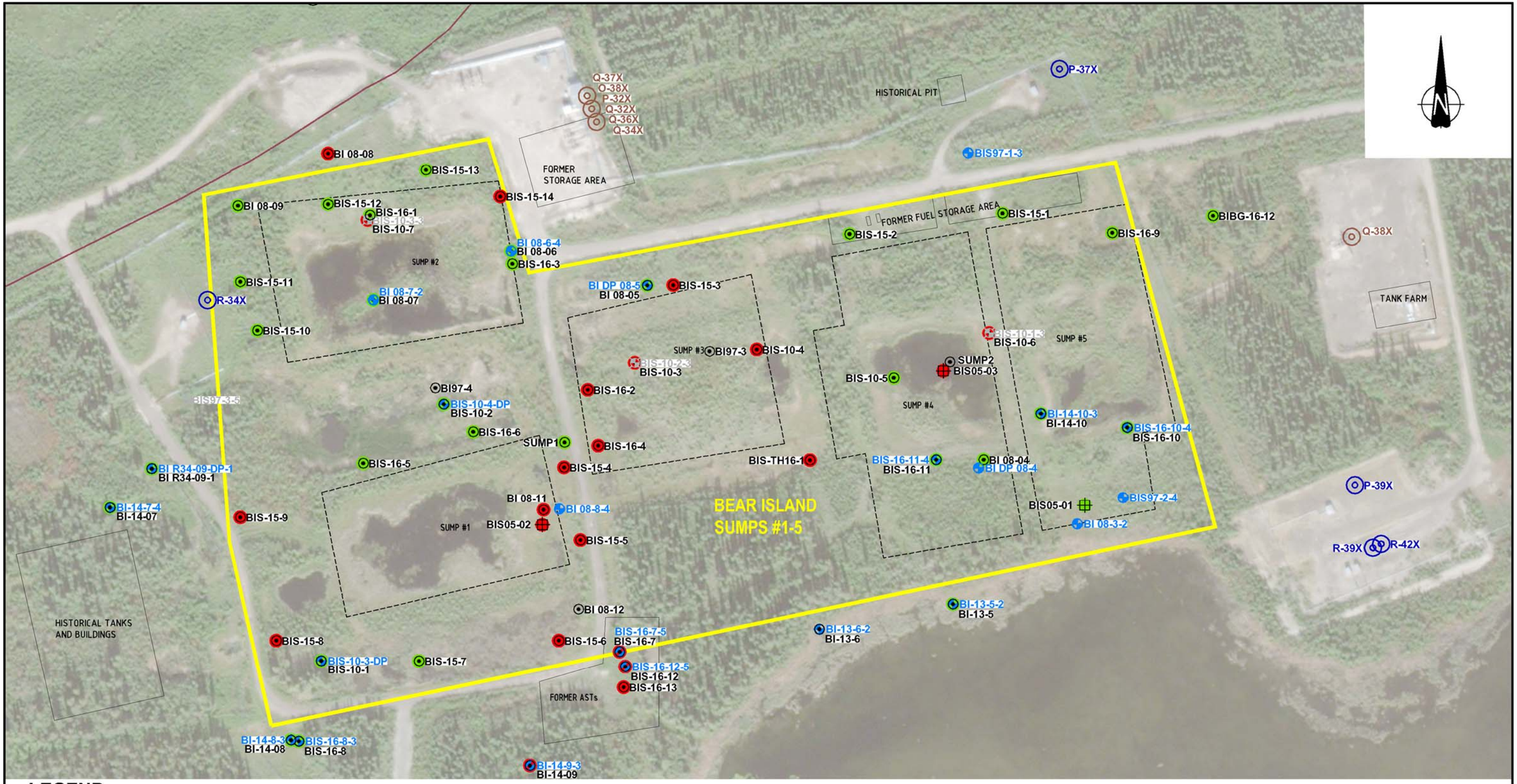

LEGEND

- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- PIPELINE
- MONITORING WELL LOCATION
- SOIL SAMPLING LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- TEST PIT LOCATION

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLICABLE ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLICABLE ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED, SHOWN IN RED

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 — 50 — 100 m

1:2000

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

SOIL ANALYTICAL RESULTS:
ORGANIC PARAMETERS (SUMPS 1-5)

Date:	Drawn by:	Edited by:	App'd by:
08-MAY-19	OTHERS	B.M.F.	

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WorleyParsons Project No.: 407011-00622-500
FIG No.: 6C
REV: B

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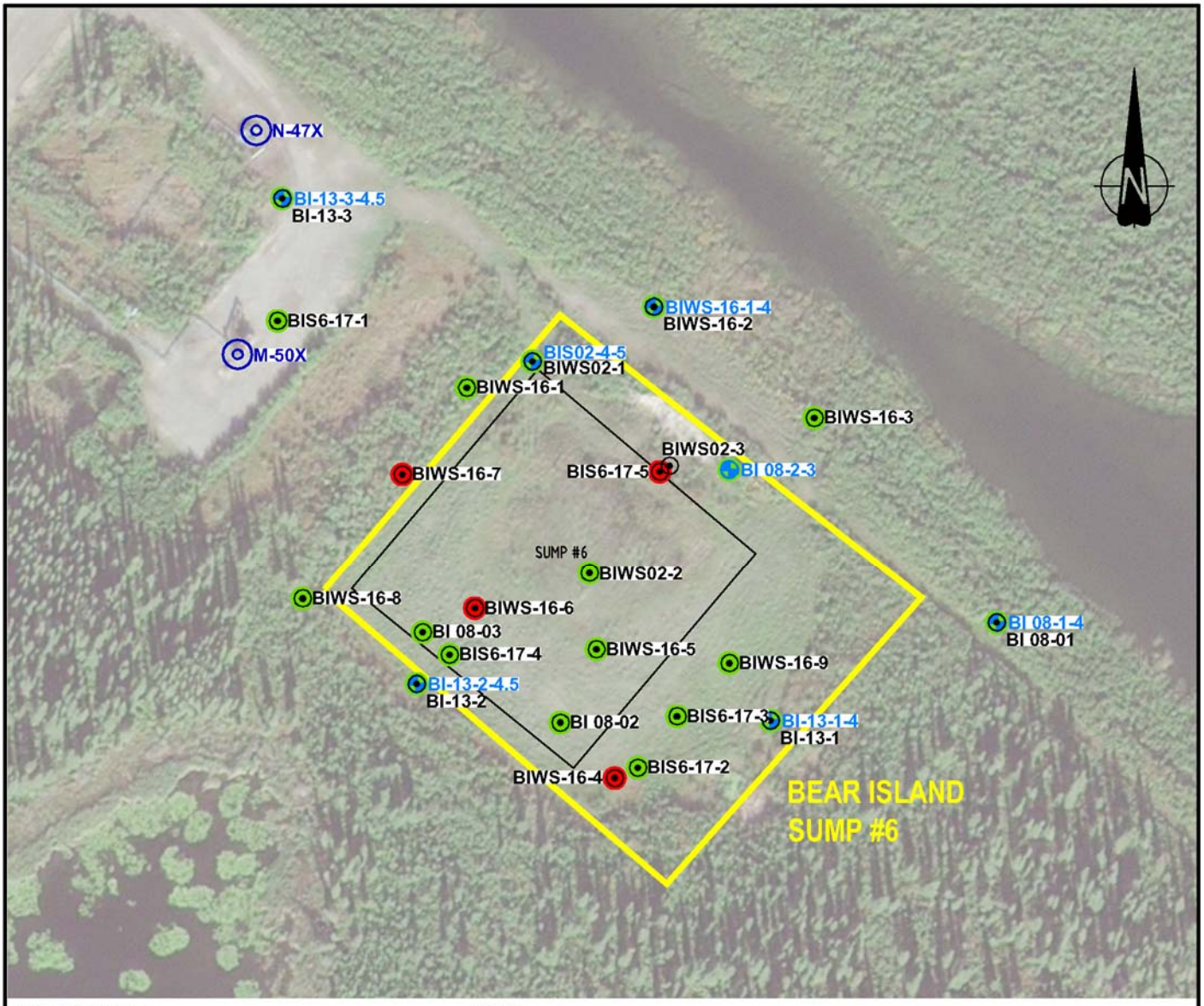
USER NAME: blair.fox
ISSUING OFFICE: CALGARY

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018-BEARISLAND_CSM.DWG



LEGEND

- INJECTION WELL LOCATION
- MONITORING WELL LOCATION
- SOIL SAMPLING LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- TEST PIT LOCATION

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLICABLE ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLICABLE ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED, SHOWN IN RED

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 — 50 — 100 m

1:2000

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

SOIL ANALYTICAL RESULTS: ORGANIC PARAMETERS (SUMP 6)

Date:	Drawn by:	Edited by:	App'd by:
03-MAY-19	OTHERS	BMF	

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WorleyParsons Project No.
407011-00622-500

FIG No: 6D
REV: A

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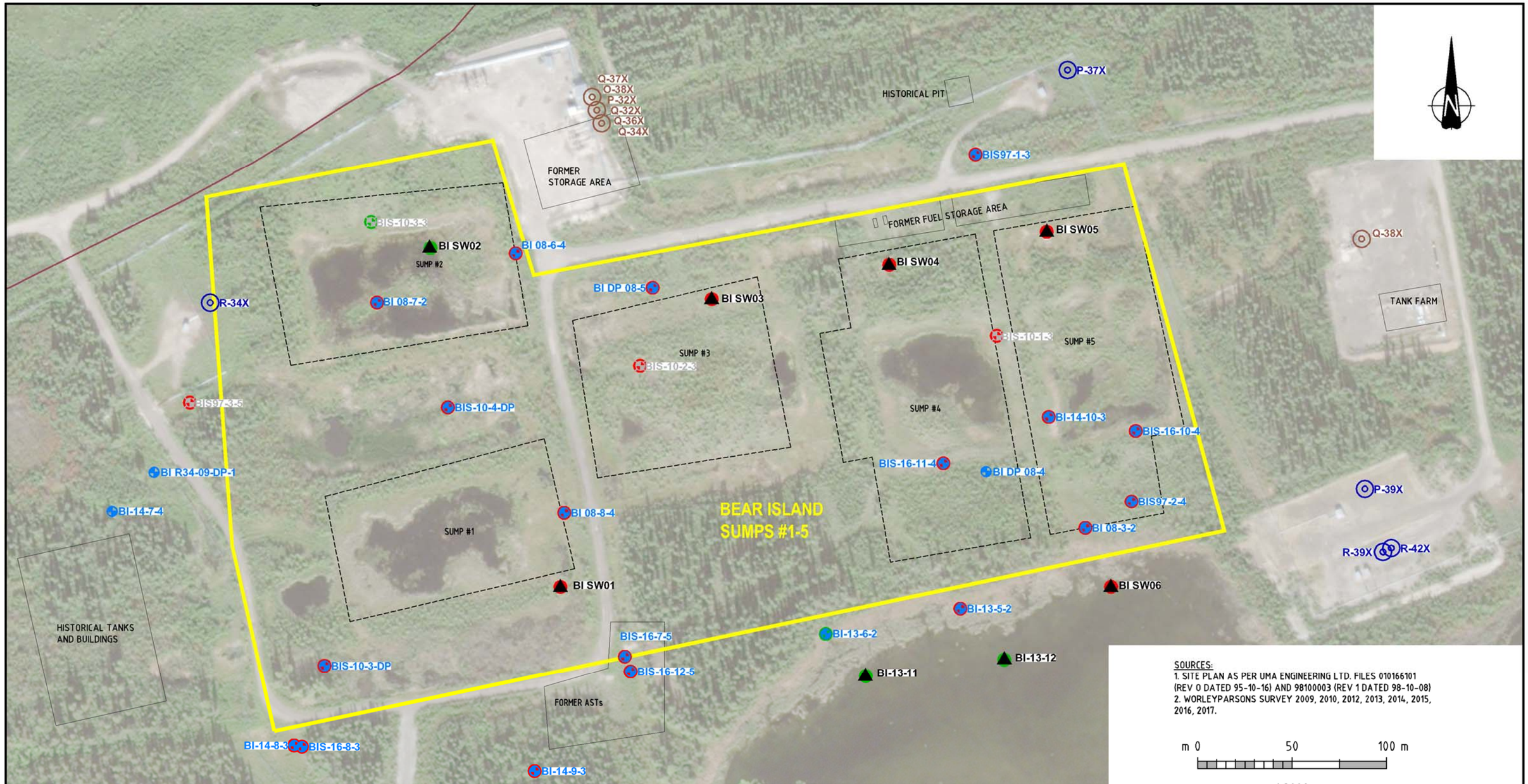
SAVE DATE & TIME: 6/5/2019 3:28:45 PM
USER NAME: blair.fink
ISSUING OFFICE: eCAD

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018-BEARISLAND_CSM.DWG



SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 50 100 m

1:2000

LEGEND

- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- PIPELINE
- MONITORING WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- SURFACE WATER SAMPLE LOCATION

ANALYTICAL RESULTS

- LOCATION WHERE GROUNDWATER SAMPLE MET APPLIED ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN GREEN.
- LOCATION WHERE GROUNDWATER SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN RED
- LOCATION NOT SAMPLED IN MOST RECENT SAMPLING EVENT

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

GROUNDWATER AND SURFACE WATER ANALYTICAL RESULTS: INORGANIC PARAMETERS (SUMPS 1-5)

Date:	29-MAY-19	Drawn by:	OTHERS	Edited by:	B.M.F.	App'd by:	
Advisian WorleyParsons Group				WorleyParsons Project No.	407011-00622-500		
				FIG No	7A	REV	B

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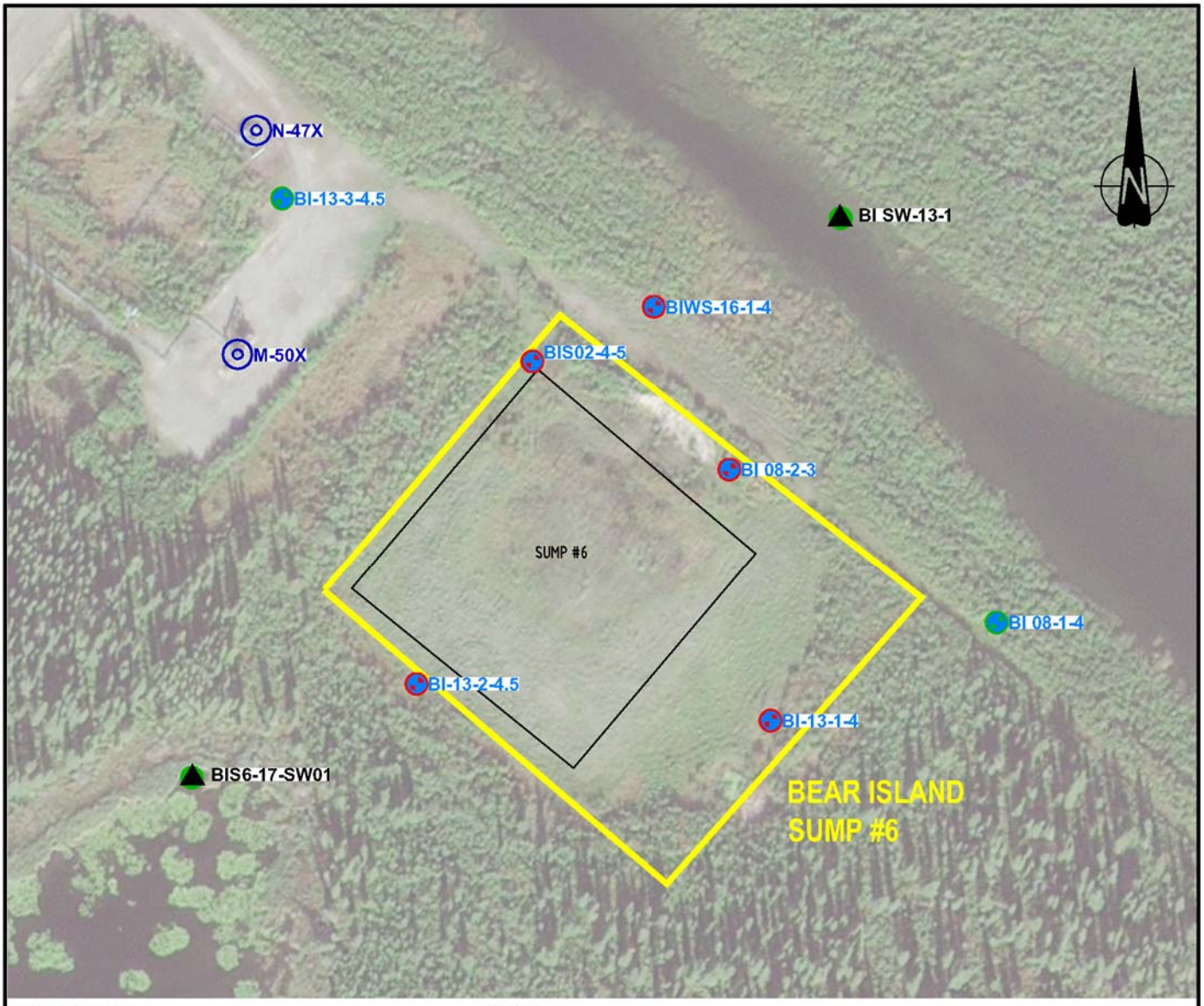

LEGEND

- INJECTION WELL LOCATION
- MONITORING WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- SURFACE WATER SAMPLE LOCATION

ANALYTICAL RESULTS

- LOCATION WHERE GROUNDWATER SAMPLE MET APPLIED ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN GREEN.
- LOCATION WHERE GROUNDWATER SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN RED
- LOCATION NOT SAMPLED IN MOST RECENT SAMPLING EVENT

NOTES:
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3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 50 100 m

1:2000

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

GROUNDWATER AND SURFACE WATER ANALYTICAL RESULTS: INORGANIC PARAMETERS (SUMP 6)

Date:	Drawn by:	Edited by:	App'd by:
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FIG No 7B

REV B

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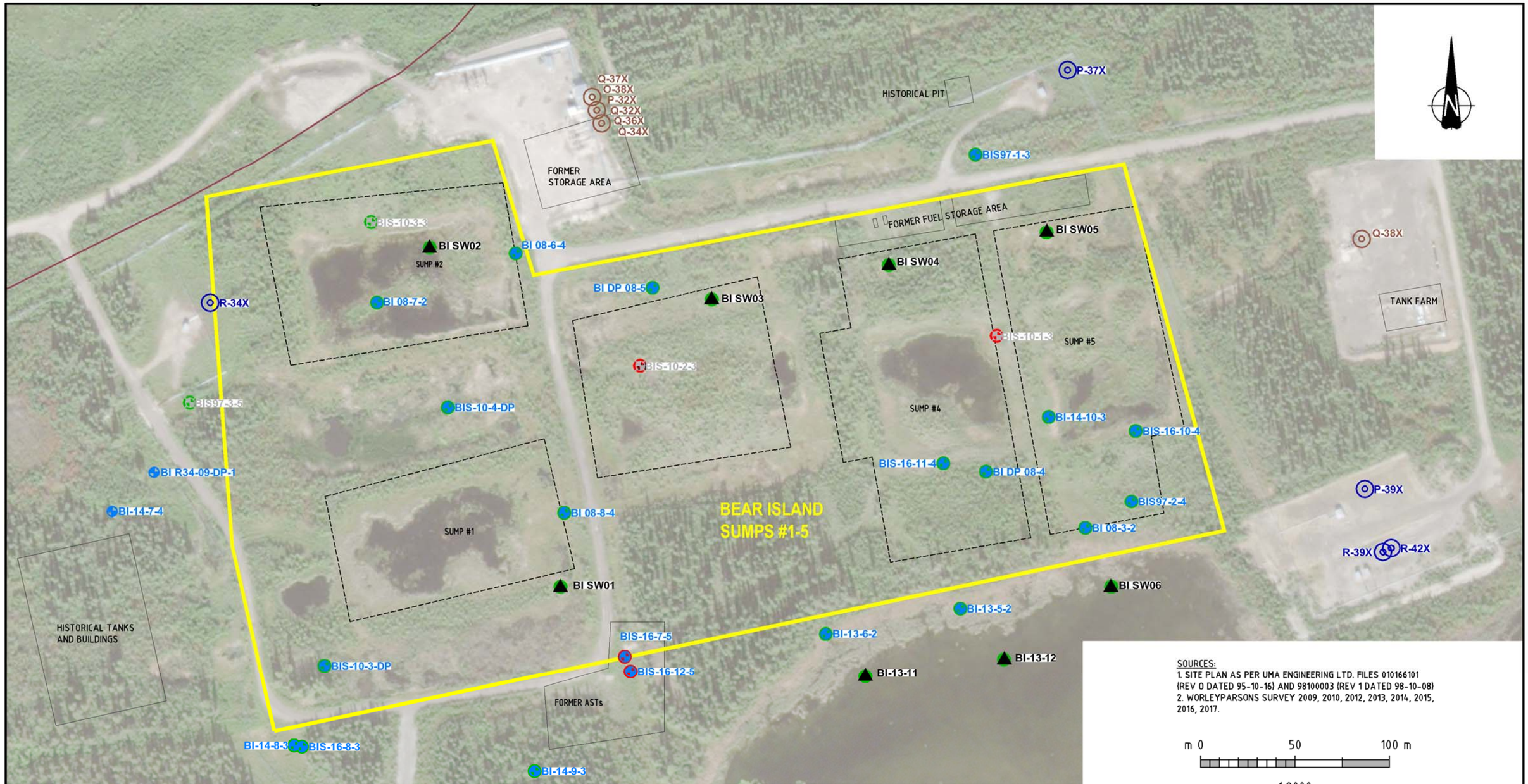

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 50 100 m

1:2000

LEGEND

- INJECTION WELL LOCATION
- PRODUCTION WELL LOCATION
- PIPELINE
- MONITORING WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- SURFACE WATER SAMPLE LOCATION

ANALYTICAL RESULTS

- LOCATION WHERE GROUNDWATER SAMPLE MET APPLIED ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN GREEN.
- LOCATION WHERE GROUNDWATER SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN RED
- LOCATION NOT SAMPLED IN MOST RECENT SAMPLING EVENT

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IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

GROUNDWATER AND SURFACE WATER ANALYTICAL RESULTS: ORGANIC PARAMETERS (SUMPS 1-5)

Date:	Drawn by:	Edited by:	App'd by:
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FIG No. 7C | REV B

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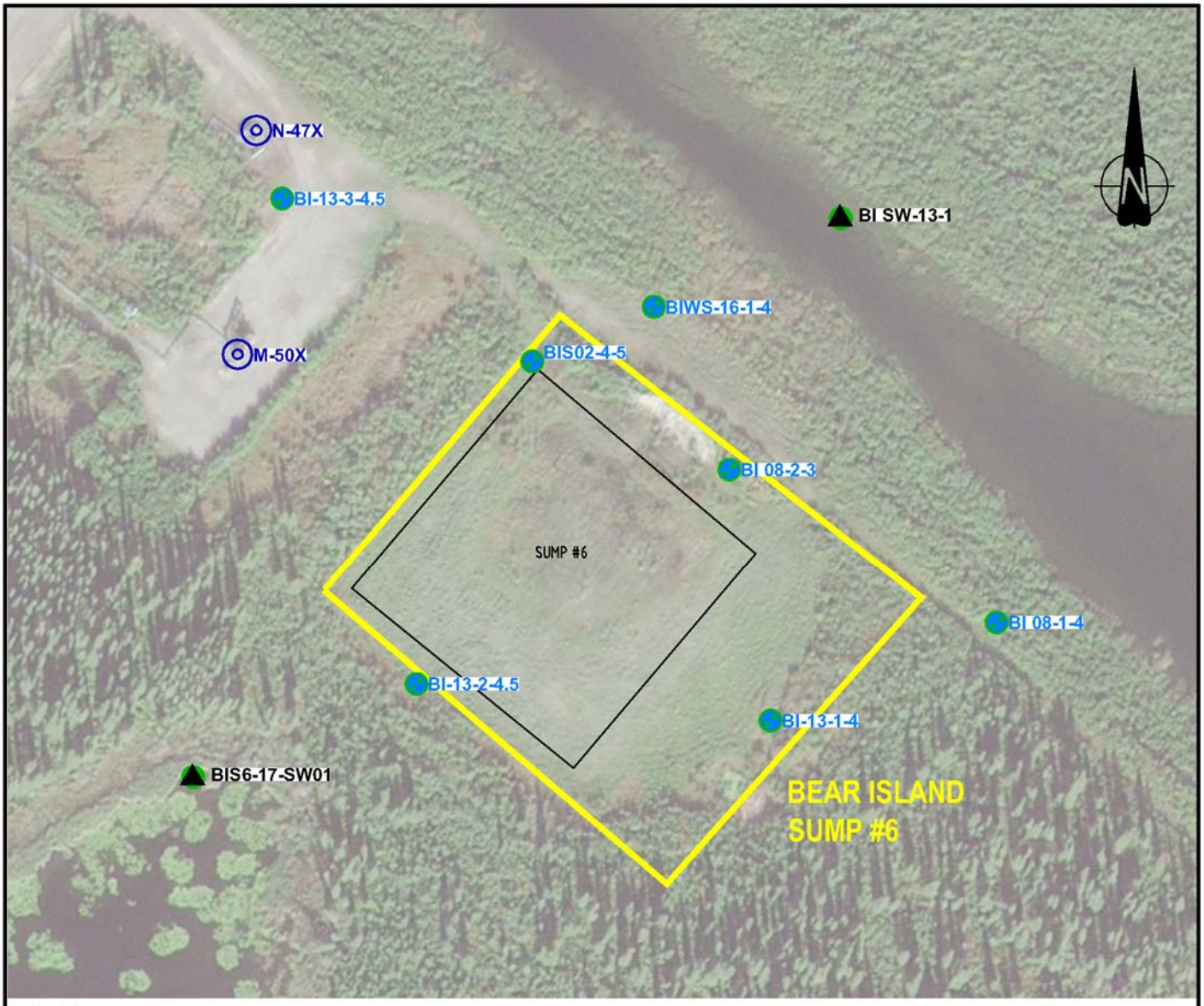

LEGEND

- INJECTION WELL LOCATION
- MONITORING WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- SURFACE WATER SAMPLE LOCATION

ANALYTICAL RESULTS

- LOCATION WHERE GROUNDWATER SAMPLE MET APPLIED ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN GREEN.
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2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 50 100 m

1:2000

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

GROUNDWATER AND SURFACE WATER ANALYTICAL RESULTS: ORGANIC PARAMETERS (SUMP 6)

Date:	Drawn by:	Edited by:	App'd by:
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FIG No 7D

REV C

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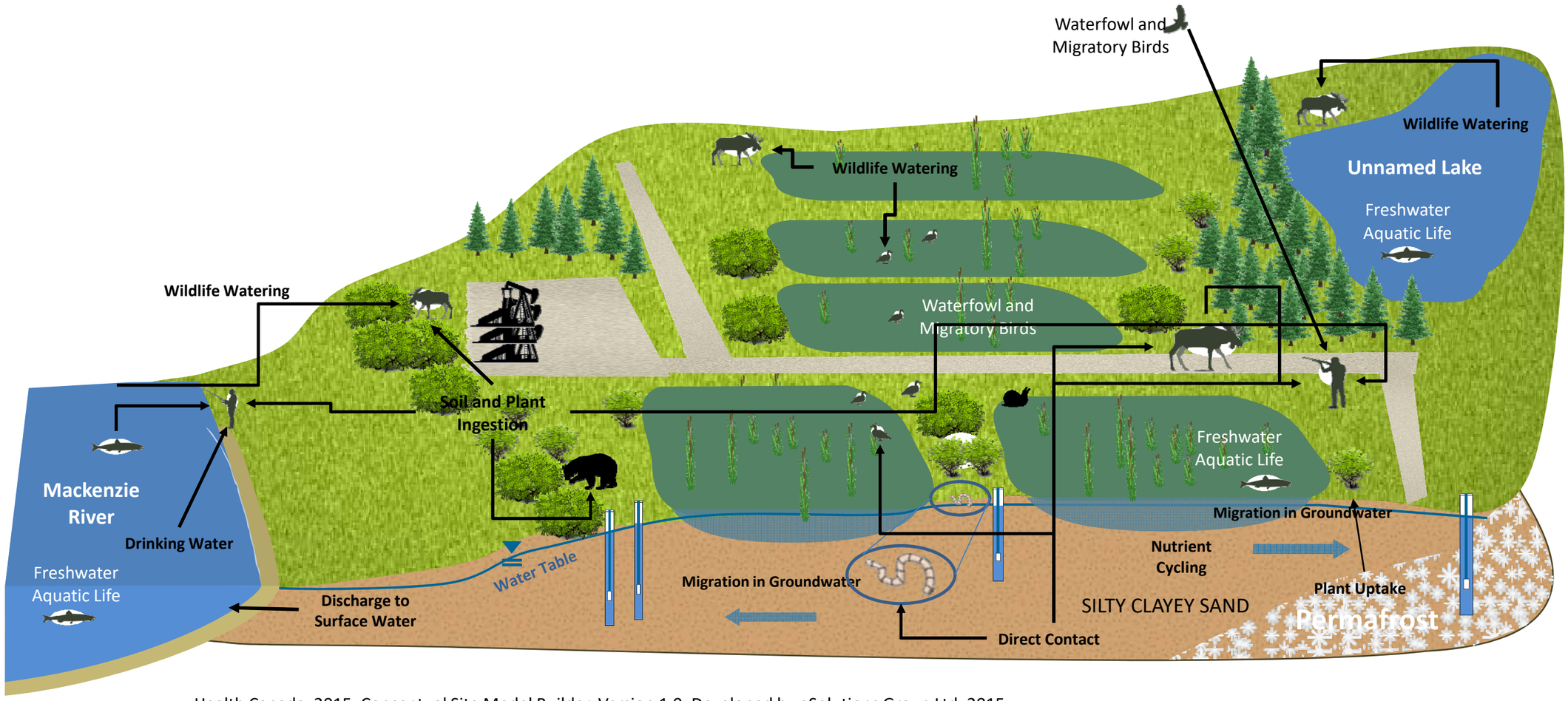

Health Canada, 2015. Conceptual Site Model Builder, Version 1.0. Developed by eSolutions Group Ltd. 2015.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS 1-5

Date: 10-May-19	Drawn by: AH	Edited by: ML	App'd by:

OneWay™ to zero harm

Advisian
WorleyParsons Group

WorleyParsons Project No.
407011-00622-500

FIG No. 8A | REV A

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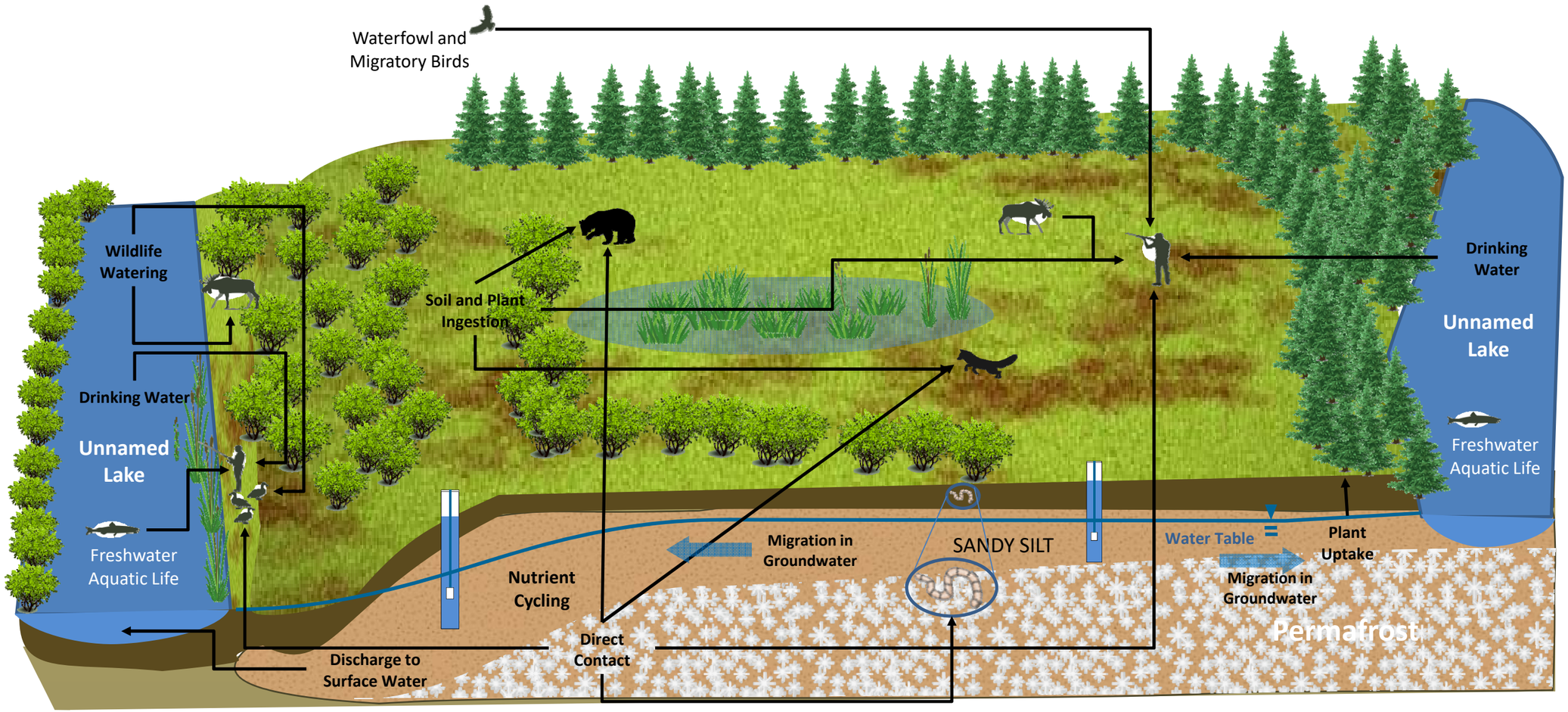

Health Canada, 2015. Conceptual Site Model Builder, Version 1.0. Developed by eSolutions Group Ltd. 2015.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

CONCEPTUAL SITE MODEL
BEAR ISLAND SUMP 6

Date:	Drawn by:	Edited by:	App'd by:
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OneWay to zero harm

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WorleyParsons Group

WorleyParsons Project No.
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FIG No. 8B

REV A

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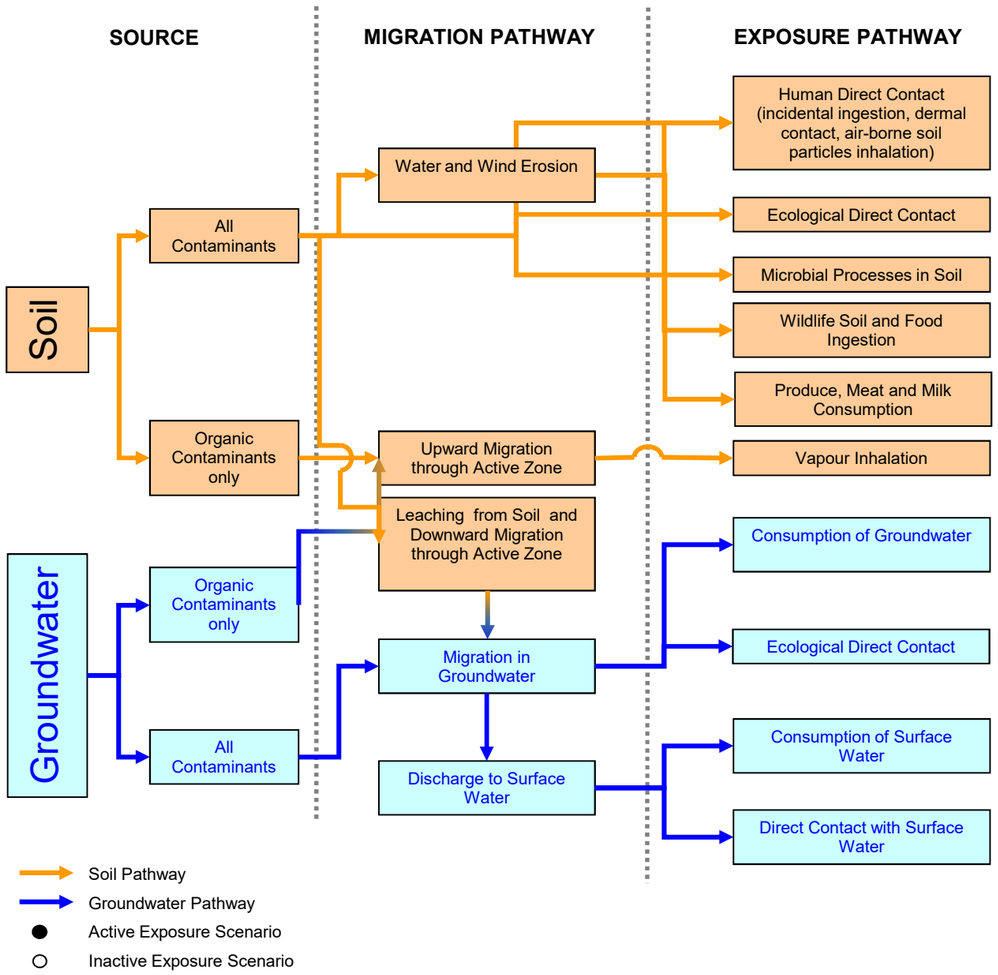
Bear Island Sumps - Conceptual Exposure Model Flow Chart (Current Land Use and Site Conditions)



RECEPTORS			
Humans	Wildlife	Plant and Soil Invertebrates	Freshwater Aquatic Life
●			
		●	
		●	
	●		
●[1]			
○			
		●	
○	●		
			●

Notes: 1) Although the current land use is industrial, it is recognized that due to the size of the site and the geographical features of the area (i.e. river, creek, etc.) animals may move on and off of the site, and hunters are able to hunt in close proximity to the site. As such, meat consumption through hunting should be considered as an active exposure pathway.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND SUMPS, NORMAN WELLS, NT

CONCEPTUAL EXPOSURE MODEL
CURRENT LAND USE AND SITE CONDITIONS

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WorleyParsons Project No.
407011-00622-500

FIG No. 9 | REV A

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FILE LOCATION: CALGARY

Tables

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Table 1A
Soil Analytical Results Sumps 1-5: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Residential/Parkland Coarse Surface				2	5	(6 - 8)	20	12	500	4	10	64	0.4	50	63	140	6.6	10	45	1	20	1	50	23	130	250
CCME Residential/Parkland Coarse Sub-Surface				2	5	(6 - 8)	20	12	500	4	10	64	0.4	50	63	140	6.6	10	45	1	20	1	50	23	130	250
S-CAT-10				2.9	0.7	7.83	1	9.7	356	0.8	0.94	16.4	0.14	8.9	20.6	10.6	0.1	2.1	28.2	1	---	0.36	---	0.8	26.2	116
S-CAT-11				2.9	1.04	7.76	1	8.8	353	0.62	0.9	21.5	0.15	9.54	21.8	12.6	0.07	3.2	29.6	0.88	---	0.3	---	1	29.4	108.5
S-CAT-12				2.5	0.64	7.76	1	9.25	368	0.6	0.7	18	0.15	9.4	22.9	11	0.06	2.4	29.9	0.8	---	0.3	---	1	30	99.9
Sumps 1-5																										
BI97-3	09-Aug-1997	2.3 - 3.8m	**S-CAT-12**	3.54	8.8	---	---	9.5	333	1.0	< 0.2	35.5	< 0.25	19.5	36.6	29	0.30	< 0.4	60.7	0.7	---	< 2	---	---	41.8	146
BI97-4	09-Aug-1997	0.8 - 2.3m	**S-CAT-12**	1.58	---	---	---	7.9	332	0.6	< 0.2	15.5	< 0.25	9.6	18.5	16	0.13	0.6	29.0	0.8	---	< 2	---	---	24.0	98.4
SUMP 1	19-Oct-1998	1.0 - 2.0m	**S-CAT-12**	0.851	0.31	---	---	8	285	0.5	0.6	11.9	< 0.25	7.7	16.8	9	0.05	0.8	21.9	0.4	---	< 0.5	---	---	19.4	82.2
SUMP 2	19-Oct-1998	1.0 - 2.0m	**S-CAT-12**	3.46	8.76	---	---	7.4	234	0.4	0.8	10.4	< 0.25	6.8	16.2	7	< 0.05	0.9	20.1	0.6	---	< 0.5	---	---	17.9	78.2
BIS05-01	30-Aug-2005	0.0 - 0.3m	**S-CAT-11**	3.04	0.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Aug-2005	0.3 - 0.6m	**S-CAT-12**	2.04	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Aug-2005	1.0 - 1.3m	**S-CAT-12**	2.32	0.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Aug-2005	2.0 - 2.2m	**S-CAT-12**	2.86	0.4	---	---	6	290	0.2	0.8	13	< 0.3	10.1	18	11	< 0.05	1.7	29	< 0.5	---	< 1	---	---	25	78
BI-08-04	18-Aug-2008	0.0 - 0.15m	**S-CAT-11**	2.2	1.8	---	< 1	8	300	0.4	0.5	16	< 0.15	8	18	9	0.05	2.0	25	0.9	< 1	0.5	< 1	---	24	80
	18-Aug-2008	0.15 - 0.3m	**S-CAT-11**	2.1	2.0	---	< 1	9	340	0.5	0.5	19	< 0.15	9	20	10	< 0.05	2.2	28	0.6	< 1	< 0.3	< 1	---	29	90
	25-Jul-2008	1.0 - 1.7m	**S-CAT-12**	1.2	0.5	---	< 1	11	410	< 0.4	0.8	19	< 0.15	11	25	13	0.06	3.2	35	1.1	< 1	0.4	< 1	---	32	110
	25-Jul-2008	2.2 - 2.7m	**S-CAT-12**	2.6	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Jul-2008	3.3 - 3.7m	**S-CAT-12**	2.7	0.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI 08-5	03-Aug-2008	0.0 - 15.0m	**S-CAT-10**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2008	0.15 - 0.3m	**S-CAT-11**	2.4	1.6	---	< 1	8	270	0.5	0.5	14	< 0.15	8	18	9	0.05	1.7	25	0.7	< 1	< 0.3	< 1	---	23	87
	03-Aug-2008	0.3 - 0.6m	**S-CAT-12**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2008	1.0 - 1.3m	**S-CAT-12**	3.9	4.4	---	< 1	7	190	< 0.4	0.5	10	< 0.15	6	11	7	< 0.05	1.5	17	0.6	< 1	< 0.3	< 1	---	15	60
BI-08-09	18-Aug-2008	0.0 - 0.15m	**S-CAT-10**	1.5	1.2	---	< 1	9	330	0.7	0.7	19	< 0.15	10	21	12	0.09	2.3	30	0.7	< 1	0.4	< 1	---	29	110
	18-Aug-2008	0.15 - 0.3m	**S-CAT-11**	1.1	1.4	---	< 1	8	320	0.5	0.6	16	< 0.15	8	18	10	0.08	2.1	27	0.9	< 1	0.5	< 1	---	26	89
BI-08-11	27-Jul-2008	0.0 - 0.3m	**S-CAT-10**	4.3	5.3	---	< 1	10	350	< 0.4	0.7	19	< 0.15	10	23	13	0.06	2.0	32	1.0	< 1	< 0.3	< 1	---	31	120
	27-Jul-2008	0.9 - 1.3m	**S-CAT-12**	7.3	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Jul-2008	1.9 - 2.1m	**S-CAT-12**	7.4	19	---	< 1	15	490	< 0.4	0.5	29	< 0.15	10	21	30	0.06	1.7	32	0.6	< 1	< 0.3	< 1	---	32	150
	27-Jul-2008	3.3 - 3.8m	**S-CAT-12**	7.5	6.7	---	< 1	8	310	< 0.4	0.6	13	< 0.15	8	15	9	< 0.05	1.4	24	0.8	< 1	< 0.3	< 1	---	19	79
BI-08-6	26-Jul-2008	0.9 - 1.2m	**S-CAT-12**	3.6	1.9	---	< 1	10	360	< 0.4	0.7	16	< 0.15	10	22	11	0.06	2.1	29	1.0	< 1	< 0.3	< 1	---	27	100
BI-08-7	26-Jul-2008	0.0 - 0.3m	**S-CAT-11**	3.6	0.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Jul-2008	0.9 - 1.2m	**S-CAT-12**	2.9	1.4	---	< 1	9	300	< 0.4	0.6	18	< 0.15	8	19	10	0.06	1.8	27	0.8	< 1	< 0.3	< 1	---	23	90
BI-08-8	26-Jul-2008	0.0 - 0.3m	**S-CAT-10**	1.4	0.9	---	< 1	9	350	< 0.4	0.7	17	< 0.15	9	20	11	0.06	1.9	28	0.9	< 1	< 0.3	< 1	---	26	100
	26-Jul-2008	0.9 - 1.2m	**S-CAT-12**	0.85	0.6	---	< 1	10	410	< 0.4	0.8	18	< 0.15	11	23	13	0.06	2.2	32	1.0	< 1	< 0.3	< 1	---	31	110
	26-Jul-2008	1.8 - 2.1m	**S-CAT-12**	0.71	1.1	---	< 1	12	390	< 0.4	0.7	18	< 0.15	12	25	14	0.06	2.4	35	1.1	< 1	< 0.3	< 1	---	31	120
BI-R34-09-1	29-Aug-2009	0.0 - 0.3m	**S-CAT-10**	0.62	0.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIS-10-1	01-Sep-2010	0.0 - 0.3m	**S-CAT-10**	1.9	0.8	---	< 2	6	220	< 0.8	0.5	13	< 0.15	7	16	10	< 0.1	1.8	21	< 1	< 2	< 0.6	< 2	< 2	23	79
	01-Sep-2010	0.3 - 0.6m	**S-CAT-10**	1.9	0.7	---	< 1	6	240	< 0.4	0.4	13	< 0.15	6	13	9	< 0.05	1.4	20	0.5	< 1	< 0.3	< 1	1	22	62
	01-Sep-2010	0.6 - 0.75m	**S-CAT-10**	1.7	0.5	---	< 1	8	290	< 0.4	0.7	15	< 0.15	8	17	11	0.05	2.0	24	0.7	< 1	< 0.3	< 1	1	25	80
BIS-10-2	01-Sep-2010	0.0 - 0.3m	**S-CAT-10**	2.0	0.3	---	< 1	7	280	< 0.4	0.5	15	< 0.15	8	17	10	0.05	1.9	24	0.7	< 1	< 0.3	< 1	1	25	76
	01-Sep-2010	0.3 - 0.6m	**S-CAT-10**	1.3	0.2	---	< 1	4	190	< 0.4	0.3	13	< 0.15	5	10	6	< 0.05	1.1	15	< 0.5	< 1	< 0.3	< 1	< 1	16	58
	01-Sep-2010	0.6 - 1.0m	**S-CAT-10**	0.88	0.2	---	< 1	5	210	< 0.4	0.3	12	< 0.15	6	12	8	< 0.05	1.2	18	0.5	< 1	< 0.3	< 1	< 1	20	57
BIS-10-3	27-Aug-2010	0.0 - 0.3m	**S-CAT-11**	3.5	1.8	---	< 1	7	260	< 0.4	0.5	13	< 0.15	7	15	8	< 0.05	1.9	22	0.5	< 1	< 0.3	< 1	< 1	22	65
	27-Aug-2010	1.5 - 1.8m	**S-CAT-12**	3.8	41	---	< 1	10	560	0.4	0.2	26	< 0.15	13	29	24	0.06	2.1	42	< 0.5	< 1	< 0.3	< 1	< 1	32	240
	27-Aug-2010	4.2 - 4.5m	**S-CAT-12**	9.0	16	---	< 1	6	320	< 0.4	0.4	11	< 0.15	6	16	9	< 0.05	1.8	19	< 0.5	< 1	< 0.3	< 1	< 1	19	60
BIS-10-4	25-Aug-2010	0.0 - 0.5m	**S-CAT-11**	2.7	1.5	---	< 1	5	240	< 0.4	0.3	12	< 0.15	6	11	7	< 0.05	1.3	17	< 0.5	< 1	< 0.3	< 1	< 1	21	49
	25-Aug-2010	1.5 - 2.0m	**S-CAT-12**	5.3	5.9	---	1	10	740	0.4	0.4	32	< 0.15	13	30	130	0.09	2.7	38	0.6	< 1	0.3	< 1	1	33	220
	25-Aug-2010	4.0 - 4.5m	**S-CAT-12**	6.5	22	---	1	11	870	0.4	0.4	35	< 0.15	12	29	160	0.12	2.3	39	< 0.5	< 1	< 0.3	< 1	1	33	250
BIS-10-5	26-Aug-2010	0.0 - 0.5m	**S-CAT-11**	3.7	3.0	---	< 1	7	290	< 0.4	0.5	16	< 0.15	9	17	11	< 0.05	2.3	26	0.6	< 1	< 0.3	< 1	< 1	28	74
	26-Aug-2010	1.5 - 2.0m	**S-CAT-12**	4.0	3.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIS-10-6	26-Aug-2010	0.0 - 0.3m	**S-CAT-11**	4.1	6.0	---	< 1	8	310	< 0.4	0.6	17	< 0.15	9	17	12	< 0.05	2.2	26	0.7	< 1	< 0.3	< 1	1	29	76
	26-Aug-2010	1.2 - 1.5m	**S-CAT-12**	3.1	56	---	< 1	13	910	0.5	0.2	36	< 0.15	17	34	45	0.07	2.8	52	< 0.5	< 1	0.3	< 1	< 1	44	160
	26-Aug-2010	3.8 - 4.1m	**S-CAT-12**	2.6	42	---	< 1	12	450	< 0.4	0.3	25	< 0.15	12	34	45	0.08	7.8	45	1.4	< 1	0.8	< 1	1	39	140
	26-Aug-2010	5.6 - 5.9m	**S-CAT-12**	1.6	1.7	---	< 1	6	300	< 0.4	0.4	12	< 0.15	7	49	11	0.06	2.0	28	< 0.5	< 1	< 0.3	< 1	< 1	23	86
BIS-10-7	28-Aug-2010	0.0 - 0.5m	**S-CAT-11**	3.2	1.6	---	< 1	8	320	< 0.4	0.5	14	< 0.15	8	19	9	< 0.05	2.3	22	0.7	< 1	< 0.3	< 1	< 1	26	78
	28-Aug-2010	3.0 - 3.5m	**S-CAT-12**	2.7	0.5	---	< 1	7	250	< 0.4	0.5	12	< 0.15	7	14	8	0.06	1.9	21	0.6	< 1	< 0.3	< 1	< 1	21	66
	28-Aug-2010	5.3 - 5.59m	**S-CAT-12**	1.0	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI-13-5	03-Sep-2013	0.1 - 0.5m	**S-CAT-11**	0.79	1.3	7.30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Sep-2013	1.1 - 1.5m	**S-CAT-12**	1.7	0.38	7.19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Sep-2013	2.6 - 3.0m	**S-CAT-12**	2.4	0.44	7.36	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Sep-2013	4.0 - 4.5m	**S-CAT-12**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI-13-6	03-Sep-2013	1.0 - 1.4m	**S-CAT-12**	1.6	0.48	7.05	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	03-Sep-2013	1.0 - 1.4m	**S-CAT-12**	2.0	0.47	6.86	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Sep-2013	2.5 - 2.9m	**S-CAT-12**	2.0	0.54	7.44	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Sep-2013	3.5 - 4.0m	**S-CAT-12**	2.6	0.34	7.51	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIS05-02	30-Aug-2005	1.0 - 1.2m	**S-CAT-12**	8.94	19.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Aug-2005	1.3 - 1.5m	**S-CAT-12**	17.2	36.1	---	---	15	891	0.2	0.4	18	< 0.3	7.8	18	22	0.07	1.7	25	< 0.5	---	< 1	---	---	27	161
	30-Aug-2005	3.0 - 3.5m	**S-CAT-12**	4.05	4.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIS05-03	30-Aug-2005	0.0 - 0.5m	**S-CAT-11**	4.36	3.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Aug-2005	0.5 - 1.0m	**S-CAT-12**	4.57	6.6	---	---	6	291	0.2	0.5	13	< 0.3	10.1	19	11	< 0.05	1.8	30	< 0.5	---	< 1	---	---	24	78
	30-Aug-2005	1.5 - 2.0m	**S-CAT-12**	4.41	9.3	---	---	7	303	0.2	0.5	15	< 0.3	8.7	18	12	< 0.05	1.7	27	< 0.5	---	< 1	---	---	28	82
BI-14-7	24-Feb-2014	1.0m	**S-CAT-12**	1.2	0.47	6.89	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Feb-2014	2.0m	**S-CAT-12**	2.4	0.45	6.94	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Feb-2014	3.0m	**S-CAT-12**	1.7	0.44	6.94	< 1.0	8.2	310	0.53	0.51	15	< 0.15	8.5	18	9.6	< 0.050	1.9	26	0.68	< 1.0	< 0.30	< 1.0	< 1.0	27	83
	24-Feb-2014	3.9m	**S-CAT-12**	1.5	0.34	7.20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI-14-8	25-Feb-2014	0.2m	**S-CAT-10**	0.82	0.40	6.80	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Feb-2014	1.0m	**S-CAT-12**	1.7	0.36	6.73	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Feb-2014	2.0m	**S-CAT-12**	2.4	0.66	7.06	< 1.0	7.9	300	0.55	0.50	16	< 0.15	8.4	18	9.4	< 0.050	1.9	26	0.67	< 1.0	< 0.30	< 1.0	< 1.0	28	83
	25-Feb-2014	3.0m	**S-CAT-12**	1.9	0.46	7.22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI-14-9	23-Feb-2014	0.2m	**S-CAT-10**	0.37	0.22	6.91	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Feb-2014	1.0m	**S-CAT-12**	1.6	0.56	7.33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Feb-2014	2.0m	**S-CAT-12**	1.3	0.33	7.09	< 1.0	9.1	320	0.45	0.60	16	< 0.15	8.9	19	10	< 0.050	2.2	27	0.65	< 1.0	< 0.30	< 1.0	1.1	28	94
	23-Feb-2014	3.3m	**S-CAT-12**	0.66	0.55	6.90	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI-14-10	23-Feb-2014	1.0m	**S-CAT-12**	1.8	4.3	6.69	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Feb-2014	2.0m	**S-CAT-12**	1.9	4.1	6.54	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Feb-2014	3.0m	**S-CAT-12**	3.5	2.1	6.88	< 1.0	7.5	310	0.45	0.50	14	< 0.15	7.4	16	8.8	< 0.050	1.9	23	0.64	< 1.0	< 0.30	< 1.0	< 1.0	25	77
	23-Feb-2014	4.0m	**S-CAT-12**	3.9	1.9	6.97	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIS-15-1	26-Sep-2015	1.2m	**S-CAT-12**	1.8	0.96	6.75	0.61	7.3	310	0.45	0.52	14	< 0.080	7.9	19	9.5	0.073	2.2	25	0.72	< 0.20	0.15	< 1.0	1.1	24	80
	26-Sep-2015	3.0m	**S-CAT-12**	2.9	0.39	6.73	0.59	7.9	290	0.41	0.53	14	< 0.080	7.9	18	9.2	0.053	2.0	24	0.67	< 0.20	0.14	< 1.0	0.95	22	81
	26-Sep-2015	4.8m	**S-CAT-12**	2.4	0.42	7.11	< 0.50	5.9	160	< 0.40	0.38	9.5	< 0.080	6.0	11	6.1	< 0.050	1.5	17	< 0.50	< 0.20	< 0.10	< 1.0	0.80	17	58
BIS-15-10	28-Sep-2015	0.6m	**S-CAT-12**	1.6	0.53	7.09	0.62	8.7	320	0.55	0.81	18	< 0.080	9.4	23	11	< 0.050	2.2	30	0.78	< 0.20	0.19	< 1.0	1.1	30	110
	28-Sep-2015	1.8m	**S-CAT-12**	1.7	0.43	7.00	0.62	8.7	320	0.52	0.49	16	< 0.080	9.3	20	10	< 0.050	2.1	28	0.69	< 0.20	0.15	< 1.0	1.0	27	89
BIS-15-11	28-Sep-2015	1.2m	**S-CAT-12**	3.1	0.50	7.02	0.72	9.5	340	0.62	0.60	18	< 0.080	10	22	12	0.052	2.2	31	0.88	< 0.20	0.19	< 1.0	1.1	31	100
	28-Sep-2015	2.4m	**S-CAT-12**	2.5	0.52	7.03	< 0.50	7.0	260	< 0.40	0.44	13	< 0.080	7.6	16	8.2	< 0.050	1.6	22	0.60	< 0.20	0.12	< 1.0	0.81	21	73
	28-Sep-2015	3.6m	**S-CAT-12**	2.7	0.54	7.43	0.55	6.9	240	< 0.40	0.48	13	< 0.080	7.2	15	7.6	< 0.050	1.7	22	0.56	< 0.20	0.11	< 1.0	0.92	21	71
BIS-15-12	28-Sep-2015	1.2m	**S-CAT-12**	2.5	0.39	7.07	0.58	8.2	320	0.42	0.57	16	< 0.080	8.5	19	9.3	< 0.050	1.9	26	0.66	< 0.20	0.15	< 1.0	1.0	26	88
	28-Sep-2015	2.4m	**S-CAT-12**	2.8	0.47	6.80	0.66	9.4	330	0.61	0.59	18	< 0.080	10	22	11	0.052	2.1	30	0.75	< 0.20	0.16	< 1.0	1.0	29	98
	28-Sep-2015	3.6m	**S-CAT-12**	2.9	0.56	7.03	0.66	8.4	330	0.45	0.54	15	< 0.080	8.8	19	9.7	< 0.050	2.2	26	0.66	< 0.20	0.15	< 1.0	0.95	26	89
BIS-15-13	28-Sep-2015	1.2m	**S-CAT-12**	1.1	0.33	7.25	0.59	7.9	350	0.41	0.54	14	< 0.080	7.8	18	8.8	< 0.050	1.8	24	0.66	< 0.20	0.15	< 1.0	0.91	25	82
	28-Sep-2015	3.0m	**S-CAT-12**	1.9	0.34	6.81	0.65	9.6	350	0.48	0.64	16	< 0.080	9.8	21	10	0.055	2.1	29	0.76	< 0.20	0.16	< 1.0	1.0	28	98
	28-Sep-2015	4.8m	**S-CAT-12**	3.0	0.38	6.96	0.60	7.5	210	< 0.40	0.56	12	< 0.080	7.3	16	7.8	< 0.050	1.9	22	0.57	< 0.20	0.12	< 1.0	0.91	22	77
BIS-15-14	28-Sep-2015	1.8m	**S-CAT-12**	0.81	0.51	6.62	0.62	9.0	320	0.53	0.59	17	< 0.080	9.7	21	10	0.063	2.2	29	0.73	< 0.20	0.16	< 1.0	0.95	28	93
	28-Sep-2015	3.0m	**S-CAT-12**	0.85	0.55	6.67	0.76	10	350	0.57	0.73	17	< 0.080	10	22	11	0.057	2.3	30	0.79	< 0.20	0.17	< 1.0	1.0	30	100
	28-Sep-2015	4.8m	**S-CAT-12**	2.9	0.31	6.82	0.59	7.5	240	< 0.40	0.56	12	< 0.080	7.3	18	8.4	< 0.050	1.8	22	0.62	< 0.20	0.13	< 1.0	1.0	21	78
BIS-15-2	26-Sep-2015	1.2m	**S-CAT-12**	3.1	0.32	6.82	0.60	7.8	290	0.43	0.49	14	< 0.080	7.8	17	9.1	< 0.050	1.8	24	0.68	< 0.20	0.15	< 1.0	0.86	23	73
	26-Sep-2015	3.0m	**S-CAT-12**	2.9	0.28	6.61	0.70	8.8	310	0.51	0.63	16	< 0.080	9.0	20	11	0.052	2.2	28	0.74	< 0.20	0.17	< 1.0	1.1	25	90
	26-Sep-2015	4.8m	**S-CAT-12**	2.9	0.49	6.71	0.59	7.5	280	0.42	0.51	13	< 0.080	7.7	16	8.8	< 0.050	1.9	23	0.62	< 0.20	0.14	< 1.0	0.90	22	77
BIS-15-3	27-Sep-2015	1.2m	**S-CAT-12**	1.8	0.45	6.94	0.68	9.5	330	0.57	0.53	17	< 0.080	10	22	11	0.080	2.4	30	0.80	< 0.20	0.17	< 1.0	1.1	30	94
	27-Sep-2015	1.8m	**S-CAT-12**	2.7	0.42	7.06	0.75	10	390	0.54	0.69	19	< 0.080	11	24	11	0.072	2.4	31	0.77	< 0.20	0.18	< 1.0	1.1	32	110
	27-Sep-2015	3.0m	**S-CAT-12**	1.8	0.52	7.06	0.58	7.9	290	< 0.40	0.51	14	< 0.080

Advisian
WorleyParsons Group

Table 1A
Soil Analytical Results Sumps 1-5: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Residential/Parkland Coarse Surface				**2**	**5**	**(6 - 8)**	**20**	**12**	**500**	**4**	**10**	**64**	**0.4**	**50**	**63**	**140**	**6.6**	**10**	**45**	**1**	**20**	**1**	**50**	**23**	**130**	**250**
CCME Residential/Parkland Coarse Sub-Surface				**2**	**5**	**(6 - 8)**	**20**	**12**	**500**	**4**	**10**	**64**	**0.4**	**50**	**63**	**140**	**6.6**	**10**	**45**	**1**	**20**	**1**	**50**	**23**	**130**	**250**
S-CAT-10				**2.9**	**0.7**	**7.83**	**1**	**9.7**	**356**	**0.8**	**0.94**	**16.4**	**0.14**	**8.9**	**20.6**	**10.6**	**0.1**	**2.1**	**28.2**	**1**	**---**	**0.36**	**---**	**0.8**	**26.2**	**116**
S-CAT-11				**2.9**	**1.04**	**7.76**	**1**	**8.8**	**353**	**0.62**	**0.9**	**21.5**	**0.15**	**9.54**	**21.8**	**12.6**	**0.07**	**3.2**	**29.6**	**0.88**	**---**	**0.3**	**---**	**1**	**29.4**	**108.5**
S-CAT-12				**2.5**	**0.64**	**7.76**	**1**	**9.25**	**368**	**0.6**	**0.7**	**18**	**0.15**	**9.4**	**22.9**	**11**	**0.06**	**2.4**	**29.9**	**0.8**	**---**	**0.3**	**---**	**1**	**30**	**99.9**
BIS-15-4	27-Sep-2015	1.8m	**S-CAT-12**	1.8	3.0	6.90	0.65	9.6	340	0.48	0.66	17	< 0.080	9.6	21	11	0.055	2.2	29	0.77	< 0.20	0.16	< 1.0	1.0	29	99
	27-Sep-2015	3.0m	**S-CAT-12**	2.6	0.41	7.10	0.61	7.8	290	< 0.40	0.56	13	< 0.080	7.9	18	8.6	0.051	2.0	23	0.60	< 0.20	0.13	< 1.0	0.99	23	82
	27-Sep-2015	3.6m	**S-CAT-12**	2.5	0.43	7.37	0.59	7.4	280	< 0.40	0.50	12	< 0.080	7.3	17	7.9	< 0.050	1.9	22	0.55	< 0.20	0.12	< 1.0	0.90	23	75
BIS-15-5	27-Sep-2015	1.8m	**S-CAT-12**	1.2	0.95	6.76	0.62	9.1	300	0.49	0.55	15	< 0.080	9.1	19	10	0.051	2.2	27	0.69	< 0.20	0.15	< 1.0	0.91	26	89
	27-Sep-2015	3.0m	**S-CAT-12**	3.7	0.78	6.80	0.54	6.7	250	< 0.40	0.49	12	< 0.080	7.0	16	7.9	< 0.050	1.7	21	0.61	< 0.20	0.13	< 1.0	0.88	20	73
	27-Sep-2015	4.2m	**S-CAT-12**	2.2	0.54	7.20	0.55	6.2	200	< 0.40	0.42	10	< 0.080	7.0	14	6.6	< 0.050	1.7	20	< 0.50	< 0.20	< 0.10	< 1.0	0.85	20	65
BIS-15-6	27-Sep-2015	1.2m	**S-CAT-12**	0.99	0.82	6.62	0.65	8.3	290	0.54	0.58	16	< 0.080	9.4	21	11	0.099	2.5	29	0.75	< 0.20	0.19	< 1.0	1.1	28	90
	27-Sep-2015	2.4m	**S-CAT-12**	2.0	0.40	6.78	0.68	9.4	330	0.54	0.61	17	< 0.080	9.9	20	11	< 0.050	2.2	29	0.73	< 0.20	0.16	< 1.0	1.1	29	95
	27-Sep-2015	3.6m	**S-CAT-12**	2.5	0.37	6.96	0.75	9.1	310	0.41	0.63	15	< 0.080	9.0	23	9.8	< 0.050	2.3	27	0.75	< 0.20	0.14	< 1.0	1.1	28	93
BIS-15-7	27-Sep-2015	1.8m	**S-CAT-12**	0.96	0.67	6.93	0.67	10	330	0.52	0.68	17	< 0.080	11	21	11	0.055	2.3	30	0.81	< 0.20	0.18	< 1.0	0.98	29	100
	27-Sep-2015	2.4m	**S-CAT-12**	3.2	0.58	6.95	0.62	9.2	310	0.48	0.54	17	< 0.080	9.5	21	10	0.052	2.2	28	0.69	< 0.20	0.16	< 1.0	1.0	28	94
	27-Sep-2015	3.0m	**S-CAT-12**	2.5	0.53	7.06	0.58	8.6	320	0.45	0.55	15	< 0.080	9.0	22	9.9	0.050	2.0	27	0.68	< 0.20	0.15	< 1.0	1.2	25	89
BIS-15-8	27-Sep-2015	1.2m	**S-CAT-12**	0.98	0.89	6.79	0.62	7.6	300	0.44	0.57	15	< 0.080	8.5	20	10	0.13	2.3	26	0.68	< 0.20	0.17	< 1.0	0.93	27	91
	27-Sep-2015	3.0m	**S-CAT-12**	1.6	1.6	6.86	0.68	10	340	0.46	0.62	17	< 0.080	9.7	21	10	0.055	2.3	28	0.73	< 0.20	0.16	< 1.0	0.98	28	96
	27-Sep-2015	4.8m	**S-CAT-12**	3.0	2.1	7.08	0.51	6.4	190	< 0.40	0.46	11	< 0.080	6.9	13	7.1	< 0.050	1.8	20	< 0.50	< 0.20	0.11	< 1.0	0.93	20	68
BIS-15-9	28-Sep-2015	1.2m	**S-CAT-12**	1.9	0.41	6.97	0.59	9.0	260	0.47	0.58	16	< 0.080	9.2	19	9.1	0.057	2.0	26	0.64	< 0.20	0.16	< 1.0	0.99	27	85
	28-Sep-2015	2.4m	**S-CAT-12**	2.5	0.39	6.86	0.62	8.6	290	0.51	0.55	16	< 0.080	9.0	18	9.3	< 0.050	2.3	27	0.71	< 0.20	0.16	< 1.0	1.0	27	83
	28-Sep-2015	4.8m	**S-CAT-12**	2.0	0.35	7.16	< 0.50	6.7	180	< 0.40	0.42	11	< 0.080	6.8	13	6.8	< 0.050	1.8	20	< 0.50	< 0.20	< 0.10	< 1.0	0.79	20	69
BIS-16-1	29-Feb-2016	0.5 - 0.8m	**S-CAT-12**	1.1	1.8	6.81	0.57	7.9	270	< 0.40	0.52	15	< 0.080	8.5	17	8.6	< 0.050	2.0	25	0.60	< 0.20	0.12	< 1.0	0.89	23	83
	29-Feb-2016	2.0 - 2.4m	**S-CAT-12**	2.3	1.6	7.24	0.62	8.4	320	0.45	0.59	16	< 0.080	9.0	19	9.4	0.054	2.2	27	0.68	< 0.20	0.15	< 1.0	1.1	26	91
BIS-16-2	01-Mar-2016	0.2 - 0.5m	**S-CAT-10**	2.1	1.5	6.75	0.79	11	320	0.51	0.68	15	< 0.080	10	22	12	0.053	12	35	0.99	< 0.20	0.47	< 1.0	2.2	33	94
	01-Mar-2016	1.4 - 1.7m	**S-CAT-12**	1.5	1.9	6.65	0.81	12	410	0.63	0.75	19	< 0.080	12	26	13	0.054	3.6	35	0.95	< 0.20	0.21	< 1.0	1.4	32	110
	01-Mar-2016	3.0 - 3.3m	**S-CAT-12**	2.0	3.7	6.82	0.68	9.3	310	0.45	0.57	15	< 0.080	9.2	19	10	< 0.050	4.2	28	0.74	< 0.20	0.23	< 1.0	1.2	27	92
	01-Mar-2016	4.2 - 4.5m	**S-CAT-12**	2.3	2.2	6.75	0.57	7.2	200	< 0.40	0.47	12	< 0.080	7.7	13	7.8	< 0.050	2.3	22	0.50	< 0.20	0.12	< 1.0	0.92	21	72
BIS-16-3	01-Mar-2016	0.7 - 1.0m	**S-CAT-12**	1.4	2.5	6.72	0.76	10	640	0.65	0.85	20	< 0.080	11	24	14	0.068	2.8	33	0.94	< 0.20	0.21	< 1.0	1.2	33	120
	01-Mar-2016	2.0 - 2.3m	**S-CAT-12**	1.1	2.5	6.73	0.70	9.8	410	0.52	0.74	18	< 0.080	9.7	22	12	0.055	2.5	30	0.87	< 0.20	0.19	< 1.0	1.2	30	100
	01-Mar-2016	3.3 - 3.7m	**S-CAT-12**	1.3	3.1	6.85	0.66	8.8	380	0.48	0.60	16	< 0.080	8.6	19	10	0.051	2.2	27	0.70	< 0.20	0.16	< 1.0	1.0	27	90
	01-Mar-2016	4.5 - 4.8m	**S-CAT-12**	3.0	3.1	7.10	0.54	7.8	220	< 0.40	0.53	13	< 0.080	8.0	16	8.4	< 0.050	2.1	24	0.53	< 0.20	0.12	< 1.0	0.89	22	80
BIS-16-4	29-Feb-2016	1.5 - 1.8m	**S-CAT-12**	3.1	8.2	6.96	0.68	9.7	360	0.55	0.62	18	< 0.080	10	21	12	0.056	2.3	30	0.76	< 0.20	0.17	< 1.0	1.1	30	100
	29-Feb-2016	2.7 - 3.0m	**S-CAT-12**	3.9	3.1	7.10	0.62	8.6	310	0.43	0.59	16	< 0.080	8.7	19	9.4	< 0.050	2.2	27	0.63	< 0.20	0.14	< 1.0	0.96	26	90
	29-Feb-2016	3.5 - 3.8m	**S-CAT-12**	3.8	5.1	6.79	0.67	9.4	330	0.47	0.64	17	< 0.080	9.5	21	10	0.052	2.3	29	0.73	< 0.20	0.16	< 1.0	0.98	27	96
BIS-16-5	02-Mar-2016	1.6 - 1.8m	**S-CAT-12**	0.55	0.39	6.49	0.61	7.9	360	0.49	0.65	16	< 0.080	8.8	19	9.7	0.064	2.1	27	0.75	< 0.20	0.18	< 1.0	1.0	27	92
	02-Mar-2016	3.0 - 3.3m	**S-CAT-12**	0.31	0.57	6.83	1.1	9.2	310	0.47	0.60	16	< 0.080	9.3	20	9.9	< 0.050	2.3	28	0.69	< 0.20	0.16	< 1.0	1.0	26	93
	02-Mar-2016	4.3 - 4.6m	**S-CAT-12**	0.29	0.64	6.94	0.55	7.8	230	< 0.40	0.49	13	< 0.080	7.3	14	8.0	< 0.050	2.0	23	0.59	< 0.20	0.11	< 1.0	0.92	23	74
BIS-16-6	02-Mar-2016	0.1 - 0.4m	**S-CAT-10**	1.3	0.83	6.45	0.52	7.0	290	0.48	0.46	15	< 0.080	7.3	16	8.7	< 0.050	1.6	23	0.61	< 0.20	0.13	< 1.0	0.81	25	80
	02-Mar-2016	2.8 - 3.1m	**S-CAT-12**	2.7	0.41	6.84	0.60	8.4	290	0.41	0.57	15	< 0.080	8.1	17	9.3	< 0.050	2.1	25	0.69	< 0.20	0.15	< 1.0	0.97	25	85
	02-Mar-2016	4.2 - 4.5m	**S-CAT-12**	2.1	0.43	7.07	0.57	7.0	230	< 0.40	0.50	14	< 0.080	7.3	14	7.6	< 0.050	1.9	22	0.57	< 0.20	0.12	< 1.0	0.92	22	70
BIS-16-7	02-Mar-2016	0.2 - 0.5m	**S-CAT-11**	1.7	0.66	6.89	0.61	9.5	370	0.57	0.59	18	< 0.080	9.4	21	13	< 0.050	2.3	29	0.81	< 0.20	0.17	< 1.0	1.0	29	97
	02-Mar-2016	2.5 - 2.7m	**S-CAT-12**	2.0	0.83	6.86	0.60	8.1	320	0.46	0.57	16	< 0.080	8.1	17	9.7	< 0.050	2.1	25	0.66	< 0.20	0.15	< 1.0	1.1	27	86
	02-Mar-2016	4.4 - 4.7m	**S-CAT-12**	1.6	2.1	7.04	0.54	6.9	210	< 0.40	0.43	12	< 0.080	6.9	12	7.3	< 0.050	1.8	21	0.50	< 0.20	0.11	< 1.0	0.89	22	68
BIS-16-8	02-Mar-2016	0.1 - 0.4m	**S-CAT-11**	1.2	0.38	7.16	0.69	9.7	370	0.62	0.61	19	< 0.080	9.9	23	12	0.050	2.3	31	0.86	< 0.20	0.19	< 1.0	1.0	31	110
	02-Mar-2016	1.8 - 2.1m	**S-CAT-12**	2.4	0.50	7.08	0.61	8.3	340	0.45	0.57	16	< 0.080	8.3	17	9.2	< 0.050	2.2	25	0.70	< 0.20	0.15	< 1.0	0.95	26	86
BIS-16-9	03-Mar-2016	1.2 - 1.4m	**S-CAT-12**	1.1	0.63	6.80	0.70	10	360	0.56	0.67	19	< 0.080	11	23	11	0.068	2.5	33	0.80	< 0.20	0.19	< 1.0	1.2	32	110
	03-Mar-2016	2.6 - 2.9m	**S-CAT-12**	1.0	0.52	6.89	0.63	8.7	270	0.43	0.57	16	< 0.080	9.1	19	9.2	0.054	2.2	27	0.60	< 0.20	0.14	< 1.0	1.0	26	87
	03-Mar-2016	4.5 - 4.8m	**S-CAT-12**	1.6	0.54	7.15	0.59	7.7	190	< 0.40	0.49	14	< 0.080	8.4	14	7.8	< 0.050	2.1	24	< 0.50	< 0.20	0.11	< 1.0	1.1	24	78
BIS-16-10	03-Mar-2016	0.8 - 1.1m	**S-CAT-12**	0.85	1.3	7.08	0.75	10	400	0.59	0.79	20	< 0.080	11	24	12	0.066	2.6	33	0.79	< 0.20	0.19	< 1.0	1.4	32	120
	03-Mar-2016	2.0 - 2.3m	**S-CAT-12**	0.94	2.2	6.98	0.70	9.8	360	0.51	0.65	18	< 0.080	10	22	11	0.060	2.5	30	0.71	< 0.20	0.17	< 1.0	1.1	29	100
	03-Mar-2016	3.7 - 4.0m	**S-CAT-12**	2.6	2.0	7.06	0.51	6.6	180	< 0.40	0.42	13	< 0.080	7.1	12	6.8	< 0.050	1.7	21	< 0.50	< 0.20	< 0.10	< 1.0	0.86	21	65
BIS-16-11	03-Mar-2016	1.3 - 1.6m	**S-CAT-12**	3.7	4.4	7.44	0.62	8.3	290	0.43	0.56	17	< 0.080	8.8	18	8.9	< 0.050	2.1	27	0.58	< 0.20	0.14	< 1.0	1.0	26	85
	03-Mar-2016	2.1 - 2.4m	**S-CAT-12**	2.2	1.4	6.88	0.76	10	360	0.55	0.68	19	< 0.080	11	23	12	0.061	2.5	32	0.74	< 0.20	0.18	< 1.0	1.1	30	100
	03-Mar-2016	3.3 - 3.6m	**S-CAT-12**	2.5	1.0	6.94	0.69	9.5	330	0.51	0.68	17	< 0.080	9.8	21	10	0.053	2.4	30	0.73	< 0.20	0.17	< 1.0	1.1	29	100
BIS-16-12	04-Mar-2016	0.7 - 1.0m	**S-CAT-12**	1.7	2.1	6.76	0.60	9.9	320	0.56	0.71	17	< 0.080	10	23	14	0.054	2.3	31	0.71	< 0.20	0.19	< 1.0	1.0	27	100
	04-Mar-2016	2.4 - 2.7m	**S-CAT-12**	1.7	0.95	7.02	0.62	8.3	260	0.40	0.54	13	< 0.080	8.0	17	10	< 0.050	2.1	24	0.65	< 0.20	0.13	< 1.0	0.86	23	83
	04-Mar-2016	4.3 - 4.6m	**S-CAT-12**	1.4	1.8	7.02	0.56	7.3	210	< 0.40	0.49	13	< 0.080	7.8	14	7.7	< 0.050	2.0	23	< 0.50	< 0.20	0.11	< 1.0	0.94	22	74
BIS-16-13	09-Mar-2016	1.2 - 1.6m	**S-CAT-12**	1.5	2.5	6.76	0.68	10	350	0.53	0.63	16	< 0.080	11	23	13	0.13	2.5	31	0.70	< 0.20	0.17	< 1.0	0.99	26	100
	09-Mar-2016	3.0 - 3.5m	**S-CAT-12**	1.2	0.79	6.83	0.65	8.2	290	0.40	0.61	12	< 0.080	8.2	18	9.3	0.11	2.2	24	0.63	< 0.20	0.14	< 1.0	0.98	21	86
	09-Mar-2016	4.2 - 4.8m	**S-CAT-12**	2.4	3.0	7.06	0.59	7.0	180	< 0.40	0.50	11	< 0.080	7.2	13	7.4	0.088	2.1	21	< 0.50	< 0.20	0.11	< 1.0	0.89	19	73
BIS-TH16-1	04-Mar-2016	0.8 - 1.1m	**S-CAT-12**	1.9	1.7	7.11	0.72	9.7	360	0.56	0.71	17	< 0.080	9.9	23	11	0.060	2.3	31	0.85	< 0.20	0.18	< 1.0	1.0	27	98
	04-Mar-2016	2.1 - 2.4m	**S-CAT-12**	2.7	0.69	7.09	0.63	8.7	300	0.45	0.59	15	< 0.080	8.7	19	10	0.052	2.2	27	0.71	< 0.20	0.15	< 1.0	0.98	24	91
	04-Mar-2016	4.5 - 4.8m	**S-CAT-12**	3.2	1.0	7.32	0.53	6.8	220	< 0.40	0.42	13	< 0.080	7.2	13	7.3	< 0.050	1.8	21	0.50	< 0.20	< 0.10	< 1.0	0.83	20	70
BIBG16-12	03-Mar-2016	1.0 - 1.3m	**S-CAT-12**	2.5	0.41	7.08	0.70	9.9	370	0.57	0.63	18	< 0.080	10	23	11	0.053	2.4	31	0.77	< 0.20	0.17	< 1.0	1.1	30	100

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Coarse-grained Surface soils, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Coarse-grained Sub-Surface soils, 1999 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines

6. Background 95th Percentile Statistical Category:
S-CAT-10: Islands - Organic Surface Soil - 95th Percentile Background
S-CAT-11: Islands - Mineral Surface Soil - 95th Percentile Background
S-CAT-12: Islands - Mineral Subsurface Soil - 95th Percentile Background

Advisian
WorleyParsons Group

Table 1B
Soil Analytical Results Sump 6: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Residential/Parkland Fine Surface [#1]				2	5	(6 - 8)	20	12	500	4	10	64	0.4	50	63	140	6.6	10	45	1	20	1	50	23	130	250
CCME Residential/Parkland Fine Sub-Surface [#2]				2	5	(6 - 8)	20	12	500	4	10	64	0.4	50	63	140	6.6	10	45	1	20	1	50	23	130	250
S-CAT-10				2.9	0.7	7.83	1	9.7	356	0.8	0.94	16.4	0.14	8.9	20.6	10.6	0.1	2.1	28.2	1	---	0.36	---	0.8	26.2	116
S-CAT-11				2.9	1.04	7.76	1	8.8	353	0.62	0.9	21.5	0.15	9.54	21.8	12.6	0.07	3.2	29.6	0.88	---	0.3	---	1	29.4	108.5
S-CAT-12				2.5	0.64	7.76	1	9.25	368	0.6	0.7	18	0.15	9.4	22.9	11	0.06	2.4	29.9	0.8	---	0.3	---	1	30	99.9
Sump 6																										
BIWS02-1	23-Jul-2002	0.0 - 1.5m	S-CAT-12	4.81	4.25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jul-2002	1.5 - 3.0m	S-CAT-12	---	---	---	---	6.8	248	0.4	0.55	10.1	< 0.25	7.2	16.4	8.2	< 0.05	1.5	21.4	< 0.5	---	0.14	---	---	20	74.7
	23-Jul-2002	3.0 - 4.5m	S-CAT-12	3.14	0.44	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIWS02-2	23-Jul-2002	0.0 - 1.5m	S-CAT-12	4.64	0.84	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Jul-2002	1.5 - 3.0m	S-CAT-12	---	---	---	---	7.1	270	0.5	0.51	11.2	< 0.25	7.5	16.2	8.4	< 0.05	1.5	22.3	< 0.5	---	0.15	---	---	20	78.7
	23-Jul-2002	3.0 - 4.5m	S-CAT-12	8.18	10.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI 08-01	26-Jul-2008	0.0 - 0.3m	S-CAT-10	1.3	0.5	---	< 1	10	380	< 0.4	0.7	17	< 0.15	9	21	11	0.06	2.2	29	1.0	< 1	0.4	< 1	---	27	100
	26-Jul-2008	0.8 - 1.2m	S-CAT-12	1.3	0.3	---	< 1	8	260	< 0.4	0.5	13	< 0.15	8	17	9	0.06	1.7	23	0.8	< 1	< 0.3	< 1	---	21	78
	26-Jul-2008	2.0 - 2.4m	S-CAT-12	1.4	0.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI-08-02-03	26-Jul-2008	0.0 - 0.3m	S-CAT-10	---	---	---	< 1	7	330	< 0.4	0.5	12	< 0.15	7	16	8	0.05	1.5	21	0.7	< 1	< 0.3	< 1	---	19	74
BI-08-2	26-Jul-2008	0.0 - 0.3m	S-CAT-11	0.91	1.8	---	< 1	7	250	< 0.4	0.4	18	< 0.15	8	18	8	< 0.05	1.4	26	< 0.5	< 1	< 0.3	< 1	---	23	73
	26-Jul-2008	0.9 - 1.2m	S-CAT-12	0.76	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI-08-3	26-Jul-2008	0.0 - 0.3m	S-CAT-11	---	---	---	< 1	6	230	< 0.4	0.4	14	< 0.15	6	15	7	< 0.05	1.3	21	< 0.5	< 1	< 0.3	< 1	---	21	62
	26-Jul-2008	2.0 - 2.4m	S-CAT-12	2.4	0.4	---	< 1	10	330	< 0.4	0.8	14	< 0.15	9	21	11	0.06	2.0	27	0.9	< 1	< 0.3	< 1	---	24	94
BI-13-1	04-Sep-2013	1.1 - 1.5m	S-CAT-12	0.86	0.51	6.97	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Sep-2013	1.8 - 2.2m	S-CAT-12	1.8	0.55	6.81	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Sep-2013	3.2 - 3.6m	S-CAT-12	2.5	0.38	6.83	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Sep-2013	5.1 - 5.5m	S-CAT-12	2.9	0.27	7.14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI-13-2	04-Sep-2013	1.0 - 1.4m	S-CAT-12	1.8	0.51	6.88	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Sep-2013	1.8 - 2.2m	S-CAT-12	1.2	0.61	7.04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Sep-2013	3.7 - 4.1m	S-CAT-12	0.21	0.87	6.76	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Sep-2013	5.2 - 5.6m	S-CAT-12	0.16	1.1	6.99	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI-13-3	04-Sep-2013	1.2 - 1.6m	S-CAT-12	0.51	0.64	6.98	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Sep-2013	2.0 - 2.4m	S-CAT-12	0.51	0.54	7.00	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Sep-2013	3.8 - 4.2m	S-CAT-12	2.0	0.23	6.86	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Sep-2013	5.6 - 6.0m	S-CAT-12	0.83	0.63	6.92	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Sep-2013	6.7 - 7.1m	S-CAT-12	0.41	0.49	6.62	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIWS-16-1	29-Sep-2016	1.0 - 1.5m	S-CAT-12	3.1	1.0	7.14	0.60	8.3	270	0.45	0.58	15	< 0.080	8.3	19	9.2	0.072	2.0	25	0.63	< 0.20	0.15	< 1.0	0.94	26	87
(Duplicate)	29-Sep-2016	1.0 - 1.5m	S-CAT-12	3.1	0.98	7.08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	29-Sep-2016	2.0 - 2.5m	S-CAT-12	3.6	2.5	6.76	0.59	8.4	310	0.45	0.58	15	< 0.080	9.0	19	9.3	0.067	2.1	27	0.69	< 0.20	0.15	< 1.0	1.1	25	90
	29-Sep-2016	4.0 - 4.5m	S-CAT-12	1.7	1.6	6.85	0.66	9.5	330	0.55	0.67	17	< 0.080	9.4	22	12	0.051	2.0	30	0.79	< 0.20	0.17	< 1.0	0.89	29	110
BIWS-16-2	29-Sep-2016	1.0 - 1.5m	S-CAT-12	2.0	0.40	6.93	0.65	8.2	300	0.44	0.58	14	< 0.080	7.8	20	9.7	< 0.050	2.1	26	0.69	< 0.20	0.15	< 1.0	0.90	24	82
	29-Sep-2016	1.5 - 2.5m	S-CAT-12	2.7	0.38	7.06	0.59	8.0	240	< 0.40	0.58	13	< 0.080	7.9	17	8.6	< 0.050	2.0	24	0.64	< 0.20	0.13	< 1.0	0.83	21	80
	29-Sep-2016	4.0 - 4.5m	S-CAT-12	1.1	0.41	6.80	0.64	11	320	0.50	0.57	16	< 0.080	9.8	21	11	0.051	2.2	29	0.73	< 0.20	0.16	< 1.0	0.86	26	97

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Table 1B
Soil Analytical Results Sump 6: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Residential/Parkland Fine Surface [#1]				2	5	(6 - 8)	20	12	500	4	10	64	0.4	50	63	140	6.6	10	45	1	20	1	50	23	130	250
CCME Residential/Parkland Fine Sub-Surface [#2]				2	5	(6 - 8)	20	12	500	4	10	64	0.4	50	63	140	6.6	10	45	1	20	1	50	23	130	250
S-CAT-10				2.9	0.7	7.83	1	9.7	356	0.8	0.94	16.4	0.14	8.9	20.6	10.6	0.1	2.1	28.2	1	---	0.36	---	0.8	26.2	116
S-CAT-11				2.9	1.04	7.76	1	8.8	353	0.62	0.9	21.5	0.15	9.54	21.8	12.6	0.07	3.2	29.6	0.88	---	0.3	---	1	29.4	108.5
S-CAT-12				2.5	0.64	7.76	1	9.25	368	0.6	0.7	18	0.15	9.4	22.9	11	0.06	2.4	29.9	0.8	---	0.3	---	1	30	99.9
BIWS-16-3	29-Sep-2016	1.0 - 1.5m	S-CAT-12	3.1	1.5	7.20	0.59	8.0	230	< 0.40	0.53	12	< 0.080	8.1	18	8.6	0.069	2.0	24	0.60	< 0.20	0.12	< 1.0	0.97	21	79
	29-Sep-2016	2.0 - 2.5m	S-CAT-12	3.5	1.5	7.31	0.53	7.4	190	< 0.40	0.43	10	< 0.080	6.9	13	7.5	< 0.050	1.7	20	0.51	< 0.20	0.11	< 1.0	0.74	19	68
	29-Sep-2016	3.0 - 3.5m	S-CAT-12	1.8	0.70	6.80	< 0.50	8.0	240	< 0.40	0.50	13	< 0.080	8.6	17	8.5	0.061	2.1	24	0.61	< 0.20	0.12	< 1.0	0.99	22	79
BIWS-16-4	30-Sep-2016	0.5 - 1.0m	S-CAT-12	0.58	1.4	7.50	< 0.50	6.3	230	< 0.40	0.38	17	< 0.080	7.2	20	7.4	0.063	1.5	24	< 0.50	< 0.20	< 0.10	< 1.0	0.71	23	65
	30-Sep-2016	1.0 - 1.5m	S-CAT-12	0.47	0.66	7.32	< 0.50	6.5	230	< 0.40	0.43	15	< 0.080	7.8	18	7.4	0.061	1.5	25	< 0.50	< 0.20	0.11	< 1.0	0.65	23	73
(Duplicate)	30-Sep-2016	1.0 - 1.5m	S-CAT-12	0.46	0.72	6.93	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Sep-2016	2.0 - 2.5m	S-CAT-12	2.4	0.41	6.88	0.63	9.2	310	0.49	0.67	15	< 0.080	9.4	22	10	0.068	2.3	28	0.73	< 0.20	0.16	< 1.0	0.98	25	99
BIWS-16-5	30-Sep-2016	0.5 - 1.0m	S-CAT-12	3.5	0.96	7.22	0.63	9.3	310	0.47	0.65	15	< 0.080	9.3	23	10	0.062	2.2	28	0.67	< 0.20	0.15	< 1.0	0.98	25	98
	30-Sep-2016	2.0 - 2.5m	S-CAT-12	4.1	1.5	6.79	0.70	10	340	0.51	0.76	17	< 0.080	11	24	11	0.072	2.7	32	0.86	< 0.20	0.18	< 1.0	1.2	29	110
	30-Sep-2016	3.0 - 3.5m	S-CAT-12	6.1	2.7	6.82	0.61	9.2	300	0.50	0.64	16	< 0.080	9.7	22	10	0.064	2.2	29	0.71	< 0.20	0.16	< 1.0	0.99	26	97
BIWS-16-6	30-Sep-2016	0.0 - 0.5m	S-CAT-11	0.76	0.99	7.33	< 0.50	6.3	210	< 0.40	0.38	16	< 0.080	7.2	17	6.9	0.050	1.5	24	< 0.50	< 0.20	< 0.10	< 1.0	0.74	22	63
	30-Sep-2016	0.5 - 1.0m	S-CAT-12	2.9	1.5	7.34	< 0.50	6.6	250	< 0.40	0.36	16	< 0.080	7.2	17	6.9	< 0.050	1.4	24	< 0.50	< 0.20	< 0.10	< 1.0	0.65	23	64
(Duplicate)	30-Sep-2016	0.5 - 1.0m	S-CAT-12	2.5	1.6	7.34	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	30-Sep-2016	1.5 - 2.0m	S-CAT-12	3.7	2.2	6.84	0.58	8.3	280	0.41	0.55	14	< 0.080	8.5	20	9.3	0.058	2.1	26	0.67	< 0.20	0.14	< 1.0	0.86	23	87
BIWS-16-7	30-Sep-2016	1.0 - 1.5m	S-CAT-12	3.7	0.84	7.04	0.57	8.8	290	0.44	0.61	15	< 0.080	9.0	22	9.9	0.060	2.1	27	0.65	< 0.20	0.14	< 1.0	0.98	24	89
	30-Sep-2016	1.5 - 2.0m	S-CAT-12	3.8	2.4	6.85	0.66	9.0	540	0.78	0.60	15	< 0.080	9.4	22	15	0.064	2.3	28	0.71	< 0.20	0.15	< 1.0	0.96	25	99
	30-Sep-2016	2.0 - 2.5m	S-CAT-12	5.3	2.8	6.83	< 0.50	7.1	210	< 0.40	0.49	11	< 0.080	7.4	18	7.7	0.052	1.8	22	0.53	< 0.20	0.12	< 1.0	0.83	19	73
BIWS-16-8	30-Sep-2016	0.5 - 1.0m	S-CAT-12	0.78	3.6	7.39	< 0.50	6.4	230	< 0.40	0.43	15	< 0.080	7.1	17	7.7	< 0.050	1.5	25	< 0.50	< 0.20	< 0.10	< 1.0	0.75	24	72
	30-Sep-2016	2.0 - 2.5m	S-CAT-12	2.0	0.79	7.07	0.65	9.2	320	0.48	0.62	15	< 0.080	8.8	21	10	< 0.050	2.2	28	0.72	< 0.20	0.15	< 1.0	0.92	25	92
	30-Sep-2016	3.0 - 3.5m	S-CAT-12	0.76	0.63	6.80	0.66	8.8	330	0.52	0.62	16	< 0.080	9.0	21	11	< 0.050	1.9	28	0.77	< 0.20	0.16	< 1.0	0.96	26	99
BIWS-16-9	30-Sep-2016	1.0 - 1.5m	S-CAT-12	4.0	0.83	7.09	0.62	8.5	300	0.47	0.61	14	< 0.080	8.7	19	10	< 0.050	2.0	27	0.70	< 0.20	0.14	< 1.0	0.99	24	89
	30-Sep-2016	2.0 - 2.5m	S-CAT-12	2.9	2.1	6.91	0.60	9.3	310	0.51	0.63	16	< 0.080	9.8	26	11	0.058	2.2	30	0.74	< 0.20	0.17	< 1.0	1.0	26	100
	30-Sep-2016	3.0 - 3.5m	S-CAT-12	1.9	0.70	6.92	0.59	8.8	290	0.46	0.58	15	< 0.080	9.3	21	9.9	0.062	2.2	28	0.69	< 0.20	0.15	< 1.0	1.0	24	92
BIS6-17-1	26-Sep-2017	1.0 - 1.5m	S-CAT-12	1.8	0.44	7.54	0.62	8.2	330	0.46	0.55	14	< 0.080	8.4	19	9.4	---	2.0	26	0.66	< 0.20	0.16	< 1.0	0.93	25	86
	26-Sep-2017	2.0 - 2.5m	S-CAT-11	2.4	0.42	7.35	0.60	8.0	270	< 0.40	0.60	13	< 0.080	7.5	17	8.6	---	2.1	23	0.66	< 0.20	0.14	< 1.0	0.99	23	81
BIS6-17-2	26-Sep-2017	0.0 - 0.5m	S-CAT-11	0.77	0.33	7.39	0.63	8.0	350	0.43	0.60	14	< 0.080	8.0	18	9.7	---	2.1	25	0.67	< 0.20	0.16	< 1.0	0.96	23	87
BIS6-17-3	26-Sep-2017	0.5 - 1.0m	S-CAT-12	0.82	0.36	7.47	0.69	9.1	360	0.52	0.62	16	< 0.080	11	21	10	---	2.2	28	0.71	< 0.20	0.17	< 1.0	1.0	26	89
	26-Sep-2017	1.5 - 2.0m	S-CAT-11	2.5	0.30	7.23	0.65	8.8	320	0.48	0.65	15	< 0.080	9.0	20	9.9	---	2.1	27	0.71	< 0.20	0.16	< 1.0	1.0	25	91
BIS6-17-4	26-Sep-2017	0.0 - 0.5m	S-CAT-12	0.69	0.30	7.46	0.53	7.5	290	0.43	0.76	13	< 0.080	8.0	19	9.0	---	1.9	25	0.66	< 0.20	0.15	< 1.0	0.85	23	84
BIS6-17-5	26-Sep-2017	0.5 - 1.0m	S-CAT-12	7.0	3.8	7.51	0.61	8.0	270	0.40	0.51	14	< 0.080	8.3	17	8.7	---	2.1	24	0.58	< 0.20	0.13	< 1.0	0.92	22	81
	26-Sep-2017	2.5 - 3.0m	S-CAT-12	4.5	8.9	7.62	0.72	8.7	760	0.43	0.60	17	< 0.080	9.4	19	23	---	2.4	28	0.64	< 0.20	0.16	< 1.0	1.2	24	100
(Duplicate)	26-Sep-2017	2.5 - 3.0m	S-CAT-12	4.3	9.8	7.60	0.77	8.3	810	0.46	0.61	15	< 0.080	8.5	18	21	---	2.2	26	0.63	< 0.20	0.16	< 1.0	1.1	24	99
	26-Sep-2017	3.0 - 3.5m	S-CAT-12	4.0	10	7.78	0.83	8.5	1000	0.43	0.57	17	< 0.080	8.9	21	48	---	2.4	28	0.67	< 0.20	0.19	< 1.0	0.95	24	120
	26-Sep-2017	4.0 - 4.5m	S-CAT-12	5.4	4.2	7.53	0.60	7.6	310	< 0.40	0.52	13	< 0.080	7.6	17	9.6	---	1.8	23	0.57	< 0.20	0.14	< 1.0	0.91	21	80

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Table 1B
Soil Analytical Results Sump 6: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Residential/Parkland Fine Surface [#1]				2	5	(6 - 8)	20	12	500	4	10	64	0.4	50	63	140	6.6	10	45	1	20	1	50	23	130	250
CCME Residential/Parkland Fine Sub-Surface [#2]				2	5	(6 - 8)	20	12	500	4	10	64	0.4	50	63	140	6.6	10	45	1	20	1	50	23	130	250
S-CAT-10				2.9	0.7	7.83	1	9.7	356	0.8	0.94	16.4	0.14	8.9	20.6	10.6	0.1	2.1	28.2	1	---	0.36	---	0.8	26.2	116
S-CAT-11				2.9	1.04	7.76	1	8.8	353	0.62	0.9	21.5	0.15	9.54	21.8	12.6	0.07	3.2	29.6	0.88	---	0.3	---	1	29.4	108.5
S-CAT-12				2.5	0.64	7.76	1	9.25	368	0.6	0.7	18	0.15	9.4	22.9	11	0.06	2.4	29.9	0.8	---	0.3	---	1	30	99.9

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Surface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
(CCME Canadian Soil Quality Guidelines for Industrial Land Use, Coarse-grained Subsurface Soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)

6. Background 95th Percentile Statistical Category:
S-CAT-10: Islands - Organic Surface Soil - 95th Percentile Background
S-CAT-11: Islands - Mineral Surface Soil - 95th Percentile Background
S-CAT-12: Islands - Mineral Subsurface Soil - 95th Percentile Background

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Table 2A
Soil Analytical Results Sumps 1-5: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Cagetory	Petroleum Hydrocarbons (PHCs)								
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)
CCME Residential/Parkland Coarse Surface				1	0.1	50	37	---	---	---	---	---
CCME Residential/Parkland Coarse Sub-Surface				1	0.1	50	37	---	---	---	---	---
CCME Canada Wide Standards Surface				---	---	---	---	210	150	300	2800	2800
CCME Canada Wide Standards Sub-Surface				---	---	---	---	700	1000	2500	10000	10000
S-CAT-10				0.0234	0.0704	0.0436	0.288	25.2	41.2	422	157	---
S-CAT-11				0.0182	0.0656	0.047	0.34	29.2	43.8	274	90	---
S-CAT-12				0.005	0.02	0.01	0.04	15.5	27	207	86	---
Sumps 1-5												
SUMP 1	19-Oct-1998	1.0 - 2.0m	**S-CAT-12**	< 0.04	< 0.04	< 0.04	< 0.06	---	---	---	---	---
BIS05-01	30-Aug-2005	0.0 - 0.3m	**S-CAT-11**	< 0.04	< 0.1	< 0.1	< 0.3	< 10	12	65	20	---
	30-Aug-2005	2.0 - 2.2m	**S-CAT-12**	< 0.04	< 0.1	< 0.1	< 0.3	< 10	12	69	19	---
BIS05-02	30-Aug-2005	1.0 - 1.2m	**S-CAT-12**	8.00	4.2	7.0	38.7	2100	3450	6230	1790	6800
	30-Aug-2005	1.3 - 1.5m	**S-CAT-12**	45.1	185	64.1	287	8000	28000	87200	34600	100000
	30-Aug-2005	3.0 - 3.5m	**S-CAT-12**	< 0.04	< 0.1	< 0.1	< 0.3	12	11	32	16	---
BIS05-03	30-Aug-2005	0.5 - 1.0m	**S-CAT-12**	---	---	---	---	---	---	---	---	---
	30-Aug-2005	1.5 - 2.0m	**S-CAT-12**	1.01	< 0.1	< 0.1	< 0.3	26	< 10	98	155	---
BI-08-04	18-Aug-2008	0.0 - 0.15m	**S-CAT-11**	---	---	---	---	---	---	---	---	---
	18-Aug-2008	0.15 - 0.3m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	25	100	39	---
	25-Jul-2008	1.0 - 1.7m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	24	29	50	---
	25-Jul-2008	2.2 - 2.7m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	20	< 10	35	---
	25-Jul-2008	3.3 - 3.7m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	23	< 10	33	---
BI 08-5	03-Aug-2008	0.0 - 15.0m	**S-CAT-10**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	110	28	---
	03-Aug-2008	0.15 - 0.3m	**S-CAT-11**	---	---	---	---	---	---	---	---	---
	03-Aug-2008	0.3 - 0.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	97	25	---
	03-Aug-2008	1.0 - 1.3m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	67	16	---
BI-08-09	18-Aug-2008	0.0 - 0.15m	**S-CAT-10**	---	---	---	---	---	---	---	---	---
	18-Aug-2008	0.15 - 0.3m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	31	160	65	---
BI-08-11	27-Jul-2008	0.0 - 0.3m	**S-CAT-10**	0.011	< 0.020	< 0.010	< 0.040	< 12	< 10	130	42	---
	27-Jul-2008	0.9 - 1.3m	**S-CAT-12**	3.2	0.089	1.2	1.0	180	630	1600	590	740
	27-Jul-2008	1.9 - 2.1m	**S-CAT-12**	9.1	33	10	42	690	5700	16000	7000	17000
	27-Jul-2008	3.3 - 3.8m	**S-CAT-12**	0.37	1.1	0.48	2.2	41	180	360	130	---
BI-08-6	26-Jul-2008	0.9 - 1.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	32	230	80	---
BI-08-7	26-Jul-2008	0.9 - 1.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	79	27	---
BI-08-8	26-Jul-2008	0.0 - 0.3m	**S-CAT-10**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	180	88	---
	26-Jul-2008	0.9 - 1.2m	**S-CAT-12**	58	180	77	330	6100	4500	11000	3200	8900
	26-Jul-2008	1.8 - 2.1m	**S-CAT-12**	110	160	61	220	5800	1800	4200	1200	2500
BI-R34-09-1	29-Aug-2009	0.3 - 0.6m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	23	230	---	---
BIS-10-1	01-Sep-2010	0.0 - 0.3m	**S-CAT-10**	< 0.010	< 0.050	< 0.020	< 0.10	< 29	< 20	110	23	---
	01-Sep-2010	0.3 - 0.6m	**S-CAT-10**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	83	22	---
	01-Sep-2010	0.6 - 0.75m	**S-CAT-10**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 10	< 10	---
BIS-10-2	01-Sep-2010	0.0 - 0.3m	**S-CAT-10**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	39	< 10	---
	01-Sep-2010	0.3 - 0.6m	**S-CAT-10**	< 0.10	< 0.050	< 0.030	< 0.10	< 31	< 20	46	< 20	---
	01-Sep-2010	0.6 - 1.0m	**S-CAT-10**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	16	< 10	---
BIS-10-3	27-Aug-2010	0.0 - 0.3m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	71	15	---
	27-Aug-2010	1.5 - 1.8m	**S-CAT-12**	0.88	0.72	2.1	8.0	310	1300	790	170	---
	27-Aug-2010	4.2 - 4.5m	**S-CAT-12**	0.33	0.51	8.4	18	1800	7700	2600	120	---
BIS-10-4	25-Aug-2010	0.0 - 0.5m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	62	20	---
	25-Aug-2010	1.5 - 2.0m	**S-CAT-12**	0.49	0.90	0.43	2.0	100	680	1500	380	---
	25-Aug-2010	4.0 - 4.5m	**S-CAT-12**	0.36	0.17	0.62	1.6	210	580	1100	350	---
BIS-10-5	26-Aug-2010	0.0 - 0.5m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	56	15	---
	26-Aug-2010	1.5 - 2.0m	**S-CAT-12**	0.019	< 0.020	< 0.010	< 0.040	< 12	< 10	34	< 10	---
BIS-10-6	26-Aug-2010	0.0 - 0.3m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	48	13	---
(Duplicate)	26-Aug-2010	0.0 - 0.3m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	50	12	---
	26-Aug-2010	1.2 - 1.5m	**S-CAT-12**	0.85	1.8	0.97	3.9	63	250	330	88	---
	26-Aug-2010	3.8 - 4.1m	**S-CAT-12**	2.5	0.36	4.4	7.6	310	800	890	240	---
	26-Aug-2010	5.6 - 5.9m	**S-CAT-12**	0.069	0.12	0.041	0.16	< 12	18	27	12	---
BIS-10-7	28-Aug-2010	0.0 - 0.5m	**S-CAT-11**	0.075	0.30	0.080	0.48	< 12	< 10	70	14	---
	28-Aug-2010	3.0 - 3.5m	**S-CAT-12**	0.043	0.15	0.035	0.21	< 12	< 10	41	< 10	---
BI-13-5	03-Sep-2013	4.0 - 4.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BI-14-8	25-Feb-2014	0.2m	**S-CAT-10**	< 0.017	< 0.068	< 0.034	< 0.14	< 41	< 34	< 170	< 170	---
	25-Feb-2014	1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	69	< 50	---
	25-Feb-2014	2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	55	< 50	---
	25-Feb-2014	3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
(Duplicate)	25-Feb-2014	3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BI-14-9	23-Feb-2014	0.2m	**S-CAT-10**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	93	< 50	---
	23-Feb-2014	1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	23-Feb-2014	2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	230	310	< 50	---
BI-14-10	23-Feb-2014	1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	57	< 50	---
	23-Feb-2014	2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	23-Feb-2014	3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	23-Feb-2014	4.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
(Duplicate)	23-Feb-2014	4.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BI-14-7	24-Feb-2014	1.0m	**S-CAT-12**	0.082	< 0.058	< 0.029	< 0.12	< 35	56	260	< 150	---
	24-Feb-2014	2.0m	**S-CAT-12**	< 0.010	< 0.040	< 0.020	< 0.080	< 24	< 20	160	< 100	---
	24-Feb-2014	3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	23	240	100	---
(Duplicate)	24-Feb-2014	3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	24-Feb-2014	3.9m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	36	430	200	---
BIS-15-1	26-Sep-2015	1.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	15	140	< 50	---
	26-Sep-2015	3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	60	< 50	---
	26-Sep-2015	4.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	21	53	< 50	---
BIS-15-10	28-Sep-2015	0.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	68	< 50	---
	28-Sep-2015	1.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIS-15-11	28-Sep-2015	1.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	53	< 50	---
	28-Sep-2015	2.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
(Duplicate)	28-Sep-2015	2.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	28-Sep-2015	3.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIS-15-12	28-Sep-2015	1.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	78	< 50	---
	28-Sep-2015	2.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	53	< 50	---
	28-Sep-2015	3.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIS-15-13	28-Sep-2015	1.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	55	< 50	---
(Duplicate)	28-Sep-2015	1.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	28-Sep-2015	3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	28-Sep-2015	4.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIS-15-14	28-Sep-2015	1.8m	**S-CAT-12**	0.023	< 0.020	0.036	< 0.040	51	1300	2600	750	---
(Duplicate)	28-Sep-2015	1.8m	**S-CAT-12**	0.019	< 0.020	0.019	< 0.040	14	1200	2900	890	3500
	28-Sep-2015	3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	36	140	< 50	---
	28-Sep-2015	4.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---

Advisian
WorleyParsons Group

Table 2A
Soil Analytical Results Sumps 1-5: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Cagetory	Petroleum Hydrocarbons (PHCs)								
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)
CCME Residential/Parkland Coarse Surface				1	0.1	50	37	---	---	---	---	---
CCME Residential/Parkland Coarse Sub-Surface				1	0.1	50	37	---	---	---	---	---
CCME Canada Wide Standards Surface				---	---	---	---	210	150	300	2800	2800
CCME Canada Wide Standards Sub-Surface				---	---	---	---	700	1000	2500	10000	10000
S-CAT-10				0.0234	0.0704	0.0436	0.288	25.2	41.2	422	157	---
S-CAT-11				0.0182	0.0656	0.047	0.34	29.2	43.8	274	90	---
S-CAT-12				0.005	0.02	0.01	0.04	15.5	27	207	86	---
BIS-15-2	26-Sep-2015	1.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	120	< 50	---
	26-Sep-2015	3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	59	< 50	---
	26-Sep-2015	4.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	110	< 50	---
BIS-15-3	27-Sep-2015	1.2m	**S-CAT-12**	**0.092**	**0.067**	< 0.010	< 0.040	**26**	< 10	62	< 50	---
	27-Sep-2015	1.8m	**S-CAT-12**	**0.39**	**0.36**	**0.026**	< 0.040	< 12	< 10	60	< 50	---
	27-Sep-2015	3.0m	**S-CAT-12**	**0.070**	**0.047**	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIS-15-4	27-Sep-2015	1.8m	**S-CAT-12**	**92**	**220**	**58**	**270**	**8700**	**2300**	**2900**	**800**	---
	27-Sep-2015	3.0m	**S-CAT-12**	**1.5**	**2.6**	**0.49**	**2.8**	**71**	**31**	69	< 50	---
	27-Sep-2015	3.6m	**S-CAT-12**	**0.32**	**0.74**	**0.21**	**1.2**	**72**	11	< 50	< 50	---
BIS-15-5	27-Sep-2015	1.8m	**S-CAT-12**	**97**	**210**	**82**	**380**	**1200**	**1800**	**2400**	**670**	---
	27-Sep-2015	3.0m	**S-CAT-12**	**0.69**	**1.7**	**0.71**	**4.2**	**200**	22	56	< 50	---
	27-Sep-2015	4.2m	**S-CAT-12**	**0.27**	**0.65**	**0.26**	**1.4**	**81**	14	< 50	< 50	---
BIS-15-6	27-Sep-2015	1.2m	**S-CAT-12**	**0.051**	**0.11**	**0.042**	**0.21**	15	**57**	**640**	**250**	---
(Duplicate)	27-Sep-2015	1.2m	**S-CAT-12**	**0.039**	**0.079**	**0.027**	**0.14**	< 12	**91**	**1100**	**460**	1200
	27-Sep-2015	2.4m	**S-CAT-12**	**0.0088**	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	27-Sep-2015	3.6m	**S-CAT-12**	**0.027**	**0.034**	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIS-15-7	27-Sep-2015	1.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	67	< 50	---
(Duplicate)	27-Sep-2015	1.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	60	< 50	---
	27-Sep-2015	2.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	27-Sep-2015	3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIS-15-8	27-Sep-2015	1.2m	**S-CAT-12**	< 0.0050	< 0.020	**0.018**	< 0.040	< 12	**300**	**1900**	**830**	2700
(Duplicate)	27-Sep-2015	1.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	**270**	**1900**	**930**	**2900**
	27-Sep-2015	3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	96	< 50	---
	27-Sep-2015	4.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIS-15-9	28-Sep-2015	1.2m	**S-CAT-12**	**0.0097**	< 0.020	< 0.010	< 0.040	< 12	**56**	**320**	**140**	---
(Duplicate)	28-Sep-2015	1.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	**88**	**480**	**190**	---
	28-Sep-2015	2.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	54	< 50	---
	28-Sep-2015	4.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIS-16-1	29-Feb-2016	0.5 - 0.8m	**S-CAT-12**	**0.010**	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	29-Feb-2016	2.0 - 2.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	57	< 50	---
BIS-16-2	01-Mar-2016	0.2 - 0.5m	**S-CAT-10**	**0.23**	0.047	0.033	0.20	**26**	**55**	210	56	---
	01-Mar-2016	1.4 - 1.7m	**S-CAT-12**	**1.2**	< 0.020	**0.036**	< 0.040	**210**	**63**	130	< 50	---
	01-Mar-2016	3.0 - 3.3m	**S-CAT-12**	**0.54**	< 0.020	**0.027**	**0.11**	**130**	22	59	< 50	---
	01-Mar-2016	4.2 - 4.5m	**S-CAT-12**	**0.072**	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIS-16-3	01-Mar-2016	0.7 - 1.0m	**S-CAT-12**	**0.44**	< 0.020	**0.10**	**0.088**	**49**	**110**	190	< 50	---
	01-Mar-2016	2.0 - 2.3m	**S-CAT-12**	**0.17**	< 0.020	**0.064**	< 0.040	**41**	**120**	**250**	64	---
	01-Mar-2016	3.3 - 3.7m	**S-CAT-12**	**0.039**	< 0.020	< 0.010	< 0.040	< 12	15	53	< 50	---
	01-Mar-2016	4.5 - 4.8m	**S-CAT-12**	**0.035**	< 0.020	< 0.010	< 0.040	< 12	**31**	67	< 50	---
BIS-16-4	29-Feb-2016	1.5 - 1.8m	**S-CAT-12**	**2.7**	< 0.020	**0.021**	< 0.040	**240**	**400**	**630**	**170**	---
	29-Feb-2016	2.7 - 3.0m	**S-CAT-12**	**0.085**	< 0.020	< 0.010	< 0.040	14	**28**	71	< 50	---
	29-Feb-2016	3.5 - 3.8m	**S-CAT-12**	**1.5**	< 0.020	< 0.010	< 0.040	< 12	14	63	< 50	---
(Duplicate)	29-Feb-2016	3.5 - 3.8m	**S-CAT-12**	**0.57**	< 0.020	< 0.010	< 0.040	< 12	15	58	< 50	---
BIS-16-5	02-Mar-2016	1.6 - 1.8m	**S-CAT-12**	**0.015**	< 0.020	< 0.010	< 0.040	< 12	< 10	84	< 50	---
	02-Mar-2016	3.0 - 3.3m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	52	< 50	---
	02-Mar-2016	4.3 - 4.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIS-16-6	02-Mar-2016	0.1 - 0.4m	**S-CAT-10**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	110	< 50	---
	02-Mar-2016	2.8 - 3.1m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
(Duplicate)	02-Mar-2016	2.8 - 3.1m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	02-Mar-2016	4.2 - 4.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIS-16-7	02-Mar-2016	0.2 - 0.5m	**S-CAT-11**	**83**	**71**	**48**	**280**	**9700**	**5400**	**7100**	**2000**	---
	02-Mar-2016	2.5 - 2.7m	**S-CAT-12**	**44**	**70**	**23**	**82**	**3300**	**470**	**700**	**190**	---
	02-Mar-2016	4.4 - 4.7m	**S-CAT-12**	**1.6**	**1.3**	**0.43**	**2.0**	**110**	13	< 50	< 50	---
BIS-16-8	02-Mar-2016	0.1 - 0.4m	**S-CAT-11**	0.010	< 0.020	< 0.010	< 0.040	< 12	12	110	< 50	---
	02-Mar-2016	1.8 - 2.1m	**S-CAT-12**	**0.24**	**0.069**	**0.016**	< 0.040	< 12	< 10	< 50	< 50	---
BIS-16-9	03-Mar-2016	1.2 - 1.4m	**S-CAT-12**	**0.0081**	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	03-Mar-2016	2.6 - 2.9m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	03-Mar-2016	4.5 - 4.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
(Duplicate)	03-Mar-2016	4.5 - 4.8m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIS-16-10	03-Mar-2016	0.8 - 1.1m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	68	< 50	---
	03-Mar-2016	2.0 - 2.3m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	71	< 50	---
	03-Mar-2016	3.7 - 4.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIS-16-11	03-Mar-2016	1.3 - 1.6m	**S-CAT-12**	**0.0087**	< 0.020	< 0.010	< 0.040	< 12	< 10	54	< 50	---
	03-Mar-2016	2.1 - 2.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	57	< 50	---
	03-Mar-2016	3.3 - 3.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	54	< 50	---
BIS-16-12	04-Mar-2016	0.7 - 1.0m	**S-CAT-12**	**63**	**120**	**56**	**300**	**7200**	**14000**	**19000**	**5600**	---
(Duplicate)	04-Mar-2016	0.7 - 1.0m	**S-CAT-12**	**87**	**150**	**69**	**350**	**6000**	**14000**	**19000**	**5800**	---
	04-Mar-2016	2.4 - 2.7m	**S-CAT-12**	**20**	**23**	**8.8**	**29**	**1200**	**860**	**1200**	**360**	---
	04-Mar-2016	4.3 - 4.6m	**S-CAT-12**	**0.34**	**0.45**	**0.15**	**0.70**	**38**	22	< 50	< 50	---
BIS-16-13	09-Mar-2016	1.2 - 1.6m	**S-CAT-12**	**57**	**160**	**42**	**240**	**6300**	**3300**	**4500**	**1300**	---
	09-Mar-2016	3.0 - 3.5m	**S-CAT-12**	**17**	**12**	**7.5**	**29**	**840**	**300**	**460**	**130**	---
	09-Mar-2016	4.2 - 4.8m	**S-CAT-12**	**0.029**	**0.041**	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
(Duplicate)	09-Mar-2016	4.2 - 4.8m	**S-CAT-12**	**0.61**	**0.81**	**0.25**	**1.2**	**60**	**28**	80	< 50	---
BIS-TH16-1	04-Mar-2016	0.8 - 1.1m	**S-CAT-12**	**0.10**	**0.039**	< 0.010	< 0.040	< 12	11	80	< 50	---
	04-Mar-2016	2.1 - 2.4m	**S-CAT-12**	**0.016**	< 0.020	< 0.010	< 0.040	< 12	< 10	57	< 50	---
	04-Mar-2016	4.5 - 4.8m	**S-CAT-12**	**0.18**	**0.12**	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BIBG16-12	03-Mar-2016	1.0 - 1.3m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	86	< 50	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Coarse-grained Surface soils, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Coarse-grained Sub-Surface soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Coarse-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates)
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Coasre-grained Sub-Surface Soils, excluding protection of potable groundwater, 2001 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Coarse-grained Surface soils, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Coarse-grained Sub-Surface soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Coarse-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates)
(CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Coasre-grained Sub-Surface Soils, excluding protection of potable groundwater, 2001 and updates)

6. Background 95th Percentile Statistical Category:
S-CAT-10: Islands - Organic Surface Soil - 95th Percentile Background
S-CAT-11: Islands - Mineral Surface Soil - 95th Percentile Background
S-CAT-12: Islands - Mineral Subsurface Soil - 95th Percentile Background

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Table 2B
Soil Analytical Results Sump 6: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	PHC Benzene (mg/kg)	PHC Toluene (mg/kg)	PHC Ethylbenzene (mg/kg)	PHC Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTEX (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50+})-Gravimetric (mg/kg)
CCME Residential/Parkland Fine Surface				**60**	**110**	**120**	**65**	**---**	**---**	**---**	**---**	**---**
CCME Residential/Parkland Fine Sub-Surface				**120**	**220**	**240**	**130**	**---**	**---**	**---**	**---**	**---**
CCME Canada Wide Standards Surface				**---**	**---**	**---**	**---**	**210**	**150**	**1300**	**5600**	**5600**
CCME Canada Wide Standards Sub-Surface				**---**	**---**	**---**	**---**	**800**	**1000**	**3500**	**10000**	**10000**
S-CAT-10				**0.0234**	**0.0704**	**0.0436**	**0.288**	**25.2**	**41.2**	**422**	**157**	**---**
S-CAT-11				**0.0182**	**0.0656**	**0.047**	**0.34**	**29.2**	**43.8**	**274**	**90**	**---**
S-CAT-12				**0.005**	**0.02**	**0.01**	**0.04**	**15.5**	**27**	**207**	**86**	**---**
Sump 6												
BIWS02-1	23-Jul-2002	0.0 - 1.5m	**S-CAT-12**	< 0.04	< 0.10	< 0.10	< 0.2	< 10	< 50	< 50	< 50	---
	23-Jul-2002	3.0 - 4.5m	**S-CAT-12**	< 0.04	< 0.10	< 0.10	< 0.2	< 10	< 50	72	< 50	---
BIWS02-2	23-Jul-2002	0.0 - 1.5m	**S-CAT-12**	< 0.04	< 0.10	< 0.10	< 0.2	< 10	< 50	< 50	< 50	---
	23-Jul-2002	3.0 - 4.5m	**S-CAT-12**	0.21	0.35	0.70	3.4	80	460	450	120	---
BI 08-01	26-Jul-2008	0.0 - 0.3m	**S-CAT-10**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	14	< 10	31	---
	26-Jul-2008	0.8 - 1.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	15	< 10	29	---
	26-Jul-2008	2.0 - 2.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	21	26	38	---
BI-08-02-03	26-Jul-2008	0.0 - 0.3m	**S-CAT-10**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	39	50	---
	26-Jul-2008	2.0 - 2.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	14	15	37	---
B1-08-2	26-Jul-2008	0.0 - 0.3m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	59	870	370	---
	26-Jul-2008	2.0 - 2.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	59	16	---
B1-08-3	26-Jul-2008	0.0 - 0.3m	**S-CAT-11**	---	---	---	---	---	---	---	---	---
	26-Jul-2008	2.0 - 2.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	50	12	---
BI-13-1	04-Sep-2013	1.1 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	59	< 50	---
	04-Sep-2013	1.8 - 2.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	65	< 50	---
	04-Sep-2013	3.2 - 3.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	61	< 50	---
	04-Sep-2013	5.1 - 5.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BI-13-2	04-Sep-2013	1.0 - 1.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	04-Sep-2013	1.8 - 2.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	< 50	< 50	---
	04-Sep-2013	3.7 - 4.1m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	04-Sep-2013	5.2 - 5.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
BI-13-3	04-Sep-2013	1.2 - 1.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	53	< 50	---
	04-Sep-2013	2.0 - 2.4m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	04-Sep-2013	3.8 - 4.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	58	< 50	---
	04-Sep-2013	5.6 - 6.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	52	< 50	---
	04-Sep-2013	6.7 - 7.1m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	91	< 50	---
BIWS-16-1	29-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	71	< 50	---
(Duplicate)	29-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	66	< 50	---
	29-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	60	< 50	---
	29-Sep-2016	4.0 - 4.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	14	110	< 50	---
BIWS-16-2	29-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	56	< 50	---
	29-Sep-2016	1.5 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	29-Sep-2016	4.0 - 4.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	73	< 50	---
BIWS-16-3	29-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	29-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---
	29-Sep-2016	3.0 - 3.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	52	< 50	---
BIWS-16-4	30-Sep-2016	0.5 - 1.0m	**S-CAT-12**	0.0072	< 0.020	< 0.010	< 0.040	< 12	89	960	380	2800
	30-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	0.014	< 0.040	< 12	240	1200	410	2000
(Duplicate)	30-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	170	1100	400	2000
	30-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	18	110	< 50	---
BIWS-16-5	30-Sep-2016	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	69	< 50	---
	30-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	69	< 50	---
	30-Sep-2016	3.0 - 3.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	66	< 50	---
BIWS-16-6	30-Sep-2016	0.0 - 0.5m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	14	330	190	---
	30-Sep-2016	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	0.014	< 0.040	< 12	210	1000	380	1800
(Duplicate)	30-Sep-2016	0.5 - 1.0m	**S-CAT-12**	0.0089	< 0.020	0.017	< 0.040	< 12	240	1200	430	2000
	30-Sep-2016	1.5 - 2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	88	< 50	---
BIWS-16-7	30-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	70	< 50	---
	30-Sep-2016	1.5 - 2.0m	**S-CAT-12**	0.015	< 0.020	0.060	< 0.040	< 12	230	400	100	---
	30-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.0086	< 0.020	< 0.010	< 0.040	< 12	< 10	62	< 50	---
BIWS-16-8	30-Sep-2016	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	17	290	110	---
	30-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	54	< 50	---
	30-Sep-2016	3.0 - 3.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	92	< 50	---
BIWS-16-9	30-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	79	< 50	---
	30-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	96	< 50	---
	30-Sep-2016	3.0 - 3.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	62	< 50	---
BIS6-17-1	26-Sep-2017	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	53	< 50	---
	26-Sep-2017	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	10	71	< 50	---
BIS6-17-2	26-Sep-2017	0.0 - 0.5m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---
BIS6-17-3	26-Sep-2017	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	58	< 50	---
	26-Sep-2017	1.5 - 2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	55	< 50	---
BIS6-17-4	26-Sep-2017	0.0 - 0.5m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	68	< 50	---
BIS6-17-5	26-Sep-2017	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	80	< 50	---
	26-Sep-2017	2.5 - 3.0m	**S-CAT-12**	0.12	0.050	0.28	0.22	43	600	470	86	---
(Duplicate)	26-Sep-2017	2.5 - 3.0m	**S-CAT-12**	0.10	0.046	0.22	0.18	78	200	200	< 50	---
	26-Sep-2017	3.0 - 3.5m	**S-CAT-12**	0.25	0.11	0.96	0.94	130	1200	860	590	3200
	26-Sep-2017	4.0 - 4.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
- (CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Surface soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Sub-Surface soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Fine-grained Sub-Surface Soils, excluding protection of potable groundwater, 2001 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
- (CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Surface soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Sub-Surface soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Fine-grained Sub-Surface Soils, excluding protection of potable groundwater, 2001 and updates)

6. Background 95th Percentile Statistical Category:
- S-CAT-10: Islands - Organic Surface Soil - 95th Percentile Background
- S-CAT-11: Islands - Mineral Surface Soil - 95th Percentile Background
- S-CAT-12: Islands - Mineral Subsurface Soil - 95th Percentile Background

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals																
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-2			**18**	**8.0**	**2.5**	**0.04**	**14**	**0.03**	**0.002**	**0.04**	**0.00047**	**0.001**	**0.010**	**12**	**0.001**	**0.000003**	**0.025**	**0.02**	**0.001**	**0.0001**	**0.0002**	**0.029**	**0.03**
W-CAT-7			**35**	**8.3**	**---**	**---**	**11**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BI SW01	18-Aug-2008	W-CAT-7	120	8.0	< 0.003	< 0.003	4	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	18-Aug-2009		340	11.1	0.022	< 0.003	< 2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
(Duplicate)	18-Aug-2009		---	---	---	---	< 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		340	7.61	0.023	< 0.003	< 2	---	---	---	---	---	---	0.11	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Aug-2010		---	---	---	---	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		150	7.96	0.004	< 0.003	< 2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Aug-2011		---	---	---	---	< 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2012		320	---	< 0.0030	< 0.0030	< 2.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Aug-2012		---	---	---	---	< 2.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013		160	---	0.0060	0.0050	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Aug-2013		160	---	0.0090	< 0.0030	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		230	---	< 0.010	< 0.010	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	03-Aug-2014		200	---	< 0.010	< 0.010	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2015		200	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	08-Aug-2015		210	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2016		320	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	08-Aug-2016		310	---	0.017	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2017		210	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	11-Aug-2017		210	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		180	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI SW02	18-Aug-2008	W-CAT-7	60	7.9	0.017	0.004	2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	18-Aug-2009		56	7.72	0.009	< 0.003	< 2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	23-Aug-2010		62	7.94	0.012	< 0.003	< 2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	21-Aug-2011		63	8.11	0.010	< 0.003	< 2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	15-Aug-2012		40	---	0.0078	< 0.0030	2.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013		72	---	0.0050	0.0040	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		66	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI SW03	18-Aug-2008	W-CAT-7	330	7.7	0.007	< 0.003	5	---	---	---	---	---	---	0.31	---	---	---	---	---	---	---	---	---
	18-Aug-2009		510	7.40	0.030	< 0.003	4	---	---	---	---	---	---	0.59	---	---	---	---	---	---	---	---	---
	23-Aug-2010		430	7.96	0.004	< 0.003	< 2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	21-Aug-2011		240	7.89	< 0.003	< 0.003	< 2	---	---	---	---	---	---	0.68	---	---	---	---	---	---	---	---	---
	16-Aug-2012		170	---	< 0.0030	< 0.0030	< 2.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013		130	---	0.0040	< 0.0030	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		250	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		78	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-Aug-2016		260	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2017		230	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2018		170	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	20-Jul-2018		170	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI SW04	18-Aug-2008	W-CAT-7	390	8.0	0.007	< 0.003	5	---	---	---	---	---	---	0.06	---	---	---	---	---	---	---	---	---
	18-Aug-2009		480	7.91	0.012	< 0.003	2	---	---	---	---	---	---	0.07	---	---	---	---	---	---	---	---	---
	23-Aug-2010		560	7.96	0.024	< 0.003	< 2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	21-Aug-2011		440	8.32	0.040	< 0.003	3	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	16-Aug-2012		360	---	< 0.0030	< 0.0030	< 2.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		380	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		350	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-Aug-2016		320	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2017		320	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2018		280	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI SW05	18-Aug-2008	W-CAT-7	900	7.9	0.015	< 0.003	13	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	18-Aug-2009		670	8.19	0.018	< 0.003	< 2	---	---	---	---	---	---	0.09	---	---	---	---	---	---	---	---	---
	23-Aug-2010		460	8.22	0.009	< 0.003	< 10	---	---	---	---	---	---	0.96	---	---	---	---	---	---	---	---	---
	21-Aug-2011		630	7.92	0.008	< 0.003	2	---	---	---	---	---	---	0.10	---	---	---	---	---	---	---	---	---
	16-Aug-2012		99	---	< 0.0030	0.012	< 2.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013		130	---	0.018	< 0.0030	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		790	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		850	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-Aug-2016		230	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2017		300	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2018		170	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI SW06	18-Aug-2008	W-CAT-7	110	7.9	< 0.003	< 0.003	7	---	---	---	---	---	---	0.17	---	---	---	---	---	---	---	---	---
	18-Aug-2009		77	8.27	0.033	< 0.003	< 2	---	---	---	---	---	---	0.07	---	---	---	---	---	---	---	---	---
	23-Aug-2010		50	8.03	0.019	< 0.003	< 2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	21-Aug-2011		51	8.05	< 0.003	< 0.003	< 2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---	---
	16-Aug-2012		230	---	< 0.0030	< 0.0030	< 2.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013		57	---	< 0.0030	< 0.0030	15	0.031	0.00070	< 0.020	< 0.000025	< 0.0010	0.0013	0.10	< 0.00020	---	< 0.00020	0.0019	< 0.00020	< 0.00010	< 0.00020	0.00011	0.0056
	03-Aug-2014		120	---	0.015	< 0.010	6.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		38	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-Aug-2016		41	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2017		660	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2018		480	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI SW-13-1	19-Sep-2013	W-CAT-7	2.2	8.00	< 0.0030	< 0.0030	7.9	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
	04-Aug-2014		4.0	8.04	0.31	< 0.010	4.6	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
	07-Aug-2015		9.5	7.65	< 0.010	< 0.010	4.4	---	---	---	---	---	---	0.079	---	---	---	---	---	---	---	---	---
	11-Aug-2016		1.7	7.79	< 0.010	< 0.010	< 2.0	---	---	---	---	---	---	0.067	---	---	---	---	---	---	---	---	---
	14-Aug-2017		3.9	---	< 0.010	< 0.010	8.3	---	---	---	---	---	---	5.4	---	---	---	---	---	---	---	---	---
	18-Jul-2018		4.1	---	< 0.010	< 0.010	< 2.0	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
BI 08-1-4	21-Aug-2008	W-CAT-2	9.7	7.3	0.025	0.009	5	< 0.001	< 0.001	< 0.02	0.00041	< 0.001	0.014	0.20	< 0.0002	---	0.0023	0.039	< 0.001	< 0.0001	< 0.0002	0.020	0.030
	18-Aug-2009		9	7.32	0.093	0.010	3	0.006	0.0009	0.02	0.00026	< 0.001	0.0093	3.6	< 0.0002	---	0.0014	0.020	0.0009	< 0.0001	< 0.0002	0.016	0.019
(Duplicate)	18-Aug-2009		---	---	---	---	7	0.005	0.0009	< 0.02	0.00028	< 0.001	0.0086	3.0	< 0.0002	---	0.0013	0.021	0.0009	< 0.0001	< 0.0002	0.016	0.017
	23-Aug-2010		9	7.25	0.19	0.015	< 2	0.009	0.0015	0.02	0.00024	< 0.001	0.012	0.22	< 0.0002	---	0.0008	0.023	0.0006	< 0.0001	< 0.0002	0.013	0.009
(Duplicate)	23-Aug-2010		---	---	---	---	6	0.010	0.0015	< 0.02	0.00023	< 0.001	0.011	0.33	< 0.0002	---	0.0008	0.020	0.0006	< 0.0001	< 0.0002	0.013	0.010
	21-Aug-2011		9	---	0.096	0.018	< 2	0.01	< 0.002	< 0.02	0.00016	**< 0.01**	0.002	64	< 0.002	---	0.002	0.014	**< 0.002**	**< 0.001**	**< 0.002**	0.004	< 0.03
(Duplicate)	21-Aug-2011		---	---	---	---	< 2	0.01	< 0.002	< 0.02	0.00015	**< 0.01**	< 0.002	60	< 0.002	---	< 0.002	0.014	**< 0.002**	**< 0.001**	**< 0.002**	0.004	< 0.03
	15-Aug-2012		11	7.95	0.28	< 0.0030	< 2.0	0.0065	0.00067	0.020	0.000098	< 0.0010	0.0054	0.15	< 0.00020	---	0.0069	0.0081	0.00037	< 0.00010	< 0.00020	0.023	0.0046
(Duplicate)	15-Aug-2012		---	---	---	---	< 2.0	0.0045	0.00060	< 0.020	0.000078	< 0.0010	0.0058	0.14	< 0.00020	---	0.0067	0.0096	0.00035	< 0.00010	< 0.00020	0.023	0.0074
BI 08-2-3	21-Aug-2008	W-CAT-2	420	7.2	0.70	0.035	9	< 0.001	0.002	0.03	0.0012	< 0.001	0.0071	7.8	< 0.0002	---	0.0007	0.044	< 0.001	< 0.0001	< 0.0002	0.023	0.042
	18-Aug-2009		1100	7.28	1.8	0.039	3	< 0.005	0.002	0.03	0.0028	< 0.005	0.006	1.3	< 0.001	---	< 0.001	0.038	< 0.001	**< 0.0005**	**< 0.001**	0.017	0.06
	23-Aug-2010		1100	7.10	0.12	0.020	5	0.012	0.0021	< 0.02	0.0027	< 0.001	0.019	7.9	< 0.0002	---	0.0017	0.060	0.0011	< 0.0001	< 0.0002	0.024	0.044
	21-Aug-2011		1000	---	0.010	0.013	< 2	0.02	< 0.002	0.03	0.0026	**< 0.01**	0.005	43	< 0.002	---	< 0.002	0.059	**< 0.002**	**< 0.001**	**< 0.002**	0.021	0.06
	15-Aug-2012		1100	7.57	0.60	0.056	6.6	0.025	0.0013	< 0.020	0.0018	< 0.0010	0.016	34	< 0.00020	---	0.00082	0.049	0.0011	< 0.00010	< 0.00020	0.018	0.031
	23-Aug-2013		310	---	0.021	0.016	18	0.019	0.0011	0.031	0.00071	< 0.0010	0.0021	55	< 0.00020	---	0.00057	0.036	0.00081	< 0.00010	< 0.00020	0.013	0.031
	04-Aug-2014		520	---	0.091	0.013	24	0.023	0.0015	< 0.020	0.00049	0.0011	0.0017	120	< 0.00020	---	0.0012	0.044	0.0010	< 0.00010	< 0.00020	0.011	0.018
	07-Aug-2015		250	---	0.018	0.014	13	0.017	0.00048	0.030	0.00038	< 0.0010	0.0020	19	< 0.00020	---	0.00058	0.022	0.00069	< 0.00010	< 0.00020	0.012	0.024
	07-Aug-2016		220	---	0.033	< 0.010	---	0.0042	0.00040	0.028	0.00051	< 0.0010	0.0035	0.18	< 0.00020	---	0.00061	0.024	0.00035	< 0.00010	< 0.00020	0.012	0.020
	15-Aug-2017		500	---	0.082	0.053	---	0.026	0.00099	< 0.020	0.00035	< 0.0010	0.0014	120	< 0.00020	---	0.00071	0.043	0.00099	< 0.00010	< 0.00020	0.0087	0.020
	18-Jul-2018		780	---	< 0.20	**< 0.20**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI 08-3-2	18-Aug-2008	W-CAT-2	980	7.2	0.005	< 0.003	26	0.002	0.004	< 0.02	< 0.00001	< 0.001	0.0031	42	< 0.0002	---	0.0031	0.021	< 0.001	< 0.0001	< 0.0002	0.015	0.016
	18-Aug-2009		950	7.17	0.004	< 0.003	< 2	0.004	0.0028	< 0.02	0.000024	< 0.001	0.0014	55	< 0.0002	---	0.0017	0.023	0.0008	< 0.0001	< 0.0002	0.0074	0.029
	23-Aug-2010		760	7.14	0.12	0.026	< 2	0.005	0.0056	< 0.02	< 0.00003	< 0.001	0.0008	35	< 0.0002	---	0.0032	0.013	0.0008	< 0.0001	< 0.0002	0.0044	0.007
	21-Aug-2011		810	7.35	0.024	0.008	< 2	0.01	0.011	< 0.02	< 0.00005	**< 0.01**	< 0.002	58	< 0.002	---	0.002	0.008	**< 0.002**	**< 0.001**	**< 0.002**	0.004	< 0.03
	16-Aug-2012		970	7.36	0.0093	0.0072	< 2.0	0.0066	0.0046	< 0.020	0.000061	< 0.0010	0.0016	97	< 0.00020	---	0.0019	0.023	0.00088	< 0.00010	< 0.00020	0.0062	0.013
	25-Aug-2013		820	---	0.039	0.0035	24	0.011	0.0031	< 0.020	0.000056	< 0.0010	0.00068	50	< 0.00020	---	0.0011	0.011	0.00048	< 0.00010	< 0.00020	0.0014	0.0083
	03-Aug-2014		750	---	< 0.010	< 0.010	16	0.0069	0.0021	< 0.020	0.00014	< 0.0010	0.00072	45	< 0.00020	---	0.0024	0.011	0.00033	< 0.00010	< 0.00020	0.0021	0.023

Advisian
WorleyParsons Group

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols: Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Dissolved Metals: Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-2			**18**	**8.0**	**2.5**	**0.04**	**14**	**0.03**	**0.002**	**0.04**	**0.00047**	**0.001**	**0.010**	**12**	**0.001**	**0.000003**	**0.025**	**0.02**	**0.001**	**0.0001**	**0.0002**	**0.029**	**0.03**
W-CAT-7			**35**	**8.3**	**---**	**---**	**11**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BI 08-6-4	18-Aug-2008	**W-CAT-2**	220	7.1	< 0.003	< 0.003	21	< 0.001	0.004	< 0.02	0.00003	< 0.001	0.0058	5.9	< 0.0002	---	0.0097	0.015	< 0.001	< 0.0001	< 0.0002	0.013	0.056
	23-Aug-2010		90	7.08	0.015	0.005	< 2	0.002	0.0011	< 0.02	0.000089	< 0.001	0.0010	36	< 0.0002	---	0.0026	0.013	0.0008	< 0.0001	< 0.0002	0.0045	0.006
	21-Aug-2011		110	7.51	0.010	0.003	< 2	< 0.01	0.003	< 0.02	0.00007	**< 0.01**	< 0.002	63	< 0.002	---	0.002	0.014	**< 0.002**	**< 0.001**	**< 0.002**	0.004	< 0.03
	15-Aug-2012		280	7.44	0.014	< 0.0030	3.4	0.017	0.0044	< 0.020	0.00011	< 0.0010	0.0011	21	< 0.00020	---	0.0088	0.029	0.0011	< 0.00010	< 0.00020	0.0066	0.025
	25-Aug-2013		200	---	0.0062	0.0085	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		190	---	0.10	< 0.010	---	0.015	0.0021	< 0.020	0.00011	< 0.0010	0.0012	60	< 0.00020	---	0.0044	0.013	0.00071	< 0.00010	< 0.00020	0.0046	0.015
	08-Aug-2015		230	---	0.027	0.013	---	0.0097	0.0030	< 0.020	0.000091	< 0.0010	0.00059	48	< 0.00020	---	0.0058	0.015	0.00088	< 0.00010	< 0.00020	0.0050	0.018
	08-Aug-2016		270	---	0.013	0.012	---	0.0098	0.0020	< 0.020	0.000098	< 0.0010	0.00050	76	< 0.00020	---	0.0045	0.014	0.00084	< 0.00010	< 0.00020	0.0046	0.0097
	11-Aug-2017		330	---	< 0.010	< 0.010	---	0.026	0.0071	< 0.020	0.000091	0.0012	0.00096	56	< 0.00020	---	0.0071	0.034	0.0015	< 0.00010	< 0.00020	0.0050	0.017
	17-Jul-2018		360	---	< 0.10	**< 0.10**	---	0.036	0.0069	< 0.020	0.000064	0.0012	0.0015	66	0.00020	---	0.0049	0.036	0.0014	< 0.00010	< 0.00020	0.0013	0.023
BI 08-7-2	18-Aug-2008	**W-CAT-2**	560	6.9	0.026	0.005	13	< 0.001	0.003	0.02	0.00006	< 0.001	0.0049	6.1	< 0.0002	---	0.0055	0.014	< 0.001	< 0.0001	< 0.0002	0.019	0.033
	18-Aug-2009		330	7.53	0.050	0.005	6	0.003	0.0010	< 0.02	0.00088	< 0.001	0.0021	0.19	0.0007	---	0.0031	0.0090	0.0004	< 0.0001	< 0.0002	0.010	0.015
	23-Aug-2010		320	7.13	0.033	0.004	< 10	0.003	0.0019	< 0.02	0.00014	< 0.001	0.0022	4.1	< 0.0002	---	0.0052	0.018	0.0005	< 0.0001	< 0.0002	0.014	0.016
	21-Aug-2011		340	---	0.038	0.005	< 2	0.01	< 0.002	< 0.02	0.00013	**< 0.01**	< 0.002	29	< 0.002	---	0.003	0.022	**< 0.002**	**< 0.001**	**< 0.002**	0.017	0.03
	16-Aug-2012		350	---	< 0.0030	< 0.0030	< 2.0	0.0090	0.0012	< 0.020	0.00017	0.0011	0.0029	22	< 0.00020	---	0.0031	0.021	0.00056	< 0.00010	< 0.00020	0.011	0.014
	24-Aug-2013		190	---	< 0.0030	0.0036	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		160	---	2.7	< 0.010	---	0.046	0.0075	< 0.020	< 0.00020	**< 0.010**	0.0043	46	< 0.0020	---	0.0029	0.019	**< 0.0020**	**< 0.0010**	**< 0.0020**	0.0084	< 0.030
	09-Aug-2015		82	---	0.13	0.012	---	0.026	0.0050	< 0.020	0.000025	0.0018	0.0026	24	< 0.00020	---	0.0026	0.020	0.00088	< 0.00010	< 0.00020	0.0039	0.0069
BI 08-8-4	21-Aug-2008	**W-CAT-2**	1400	7.7	0.008	0.004	55	< 0.001	0.004	0.11	< 0.00001	< 0.001	0.0056	1.1	< 0.0002	---	0.0070	0.018	< 0.001	< 0.0001	< 0.0002	0.015	0.027
	18-Aug-2009		1400	7.89	0.037	0.004	6	0.004	0.0038	0.05	0.000016	< 0.001	0.0025	1.2	< 0.0002	---	0.0077	0.0097	0.0009	< 0.0001	< 0.0002	0.010	0.010
	23-Aug-2010		1200	7.64	0.079	0.004	< 10	0.005	0.0041	0.26	< 0.00003	0.001	0.0006	0.34	< 0.0002	---	0.0054	0.0070	0.0006	< 0.0001	< 0.0002	0.0061	0.005
(Duplicate)	23-Aug-2010		---	---	---	---	5	0.006	0.0040	0.26	0.000053	0.001	0.0004	0.80	< 0.0002	---	0.0040	0.0065	0.0006	< 0.0001	< 0.0002	0.0051	0.004
	21-Aug-2011		930	---	0.003	< 0.003	2	0.01	0.010	0.14	< 0.00005	**< 0.01**	< 0.002	12	< 0.002	---	0.003	0.005	**< 0.002**	**< 0.001**	**< 0.002**	0.002	< 0.03
(Duplicate)	21-Aug-2011		---	---	---	---	5	< 0.01	0.008	0.17	< 0.00005	**< 0.01**	< 0.002	7.4	< 0.002	---	0.005	0.006	**< 0.002**	**< 0.001**	**< 0.002**	0.002	< 0.03
	16-Aug-2012		940	---	0.019	< 0.0030	4.2	0.023	0.0076	0.11	0.000035	0.0016	0.00082	18	< 0.00020	---	0.0027	0.0047	0.00077	< 0.00010	< 0.00020	0.0010	0.0085
(Duplicate)	16-Aug-2012		---	---	---	---	4.2	0.014	0.0076	0.11	< 0.000025	0.0017	0.00072	18	< 0.00020	---	0.0028	0.0047	0.00072	< 0.00010	< 0.00020	0.00092	0.011
	24-Aug-2013		870	---	0.0091	0.0075	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	24-Aug-2013		840	---	0.0056	0.0060	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		710	---	0.037	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	03-Aug-2014		820	---	0.044	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2015		1000	---	0.11	0.020	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	08-Aug-2015		1100	---	0.10	0.013	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2016		1100	---	0.019	0.013	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	08-Aug-2016		1200	---	0.016	0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2017		770	---	0.011	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	11-Aug-2017		770	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2018		1100	---	< 0.10	**< 0.10**	---	0.76	0.018	0.057	0.00027	0.0036	0.011	58	0.0048	---	0.0019	0.011	**0.0010**	< 0.00010	< 0.00020	0.0018	0.041
BI-13-1-4	19-Sep-2013	**W-CAT-2**	9.5	7.09	< 0.0030	0.0082	19	0.0050	0.0034	< 0.020	< 0.000025	< 0.0010	0.00049	54	< 0.00020	---	0.0026	0.014	0.0011	< 0.00010	< 0.00020	0.0023	0.0066
	04-Aug-2014		8.4	6.99	0.063	< 0.010	11	0.028	0.011	0.026	< 0.000020	0.0012	0.00080	52	< 0.00020	---	0.0029	0.011	0.00065	< 0.00010	< 0.00020	0.0083	0.011
	07-Aug-2015		7.7	7.07	0.018	0.014	11	0.018	0.011	0.025	0.000026	< 0.0010	0.00034	49	< 0.00020	---	0.0025	0.014	0.00066	< 0.00010	< 0.00020	0.0048	0.0042
	07-Aug-2016		7.9	7.14	0.053	0.013	< 2.0	0.026	0.012	0.023	< 0.000020	< 0.0010	< 0.00020	47	< 0.00020	---	0.0013	0.011	0.00069	< 0.00010	< 0.00020	0.0034	0.0057
	15-Aug-2017		6.2	---	0.016	< 0.010	8.3	0.0069	0.0014	0.021	0.00010	< 0.0010	0.0015	9.1	< 0.00020	---	0.0031	0.015	0.00080	< 0.00010	< 0.00020	0.011	0.021
	18-Jul-2018		4.6	---	0.034	0.017	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Sep-2018		8.3	---	0.28	< 0.010	7.7	0.0093	0.0035	< 0.020	0.000033	< 0.0010	0.0014	27	< 0.00020	< 0.0000020	0.0022	0.016	0.00040	< 0.00010	< 0.00020	0.0062	0.011
BI-13-11	19-Sep-2013	**W-CAT-7**	31	7.77	< 0.0030	< 0.0030	9.2	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
	03-Aug-2014		36	7.91	0.56	< 0.010	3.9	---	---	---	---	---	---	0.079	---	---	---	---	---	---	---	---	---
	09-Aug-2015		33	7.66	< 0.010	< 0.010	5.9	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
	10-Aug-2016		36	7.92	< 0.010	< 0.010	4.4	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
	14-Aug-2017		58	---	< 0.010	< 0.010	49	---	---	---	---	---	---	0.11	---	---	---	---	---	---	---	---	---
	18-Jul-2018		---	---	---	---	2.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI-13-12	19-Sep-2013	**W-CAT-7**	40	7.95	< 0.0030	< 0.0030	10	---	---	---	---	---	---	< 0.060	---	---	---	---	---	---	---	---	---
BI-13-2-4.5	19-Sep-2013	**W-CAT-2**	20	7.45	0.0036	< 0.0030	21	0.012	0.0074	< 0.020	< 0.000025	0.0013	0.00068	38	< 0.00020	---	0.0054	0.024	0.0014	< 0.00010	< 0.00020	0.0023	0.0049
	04-Aug-2014		22	7.29	< 0.010	< 0.010	12	0.030	0.011	< 0.020	< 0.000020	0.0013	0.00065	70	< 0.00020	---	0.0035	0.011	0.0011	< 0.00010	< 0.00020	0.0022	< 0.0030
	07-Aug-2015		18	7.32	0.012	0.015	15	0.016	0.0086	< 0.020	0.000024	< 0.0010	0.00048	50	< 0.00020	---	0.0036	0.011	0.0012	< 0.00010	< 0.00020	0.0017	0.0041
	07-Aug-2016		16	7.35	< 0.010	< 0.010	< 2.0	0.016	0.011	< 0.020	< 0.000020	0.0028	< 0.00020	51	< 0.00020	---	0.0044	0.0077	0.0013	< 0.00010	< 0.00020	0.0012	0.0063
	15-Aug-2017		16	---	< 0.010	< 0.010	20	0.018	0.0082	< 0.020	< 0.000020	0.0011	0.00061	43	< 0.00020	---	0.0048	0.016	0.0012	< 0.00010	< 0.00020	0.0018	0.0047
	18-Jul-2018		1.8	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BI-13-3-4.5	19-Sep-2013	**W-CAT-2**	11	7.52	0.011	< 0.0030	12	0.013	0.0043	< 0.020	< 0.000025	0.0011	0.00092	21	< 0.00020	---	0.017	0.019	0.00079	< 0.00010	< 0.00020	0.0045	0.0080
(Duplicate)	19-Sep-2013		11	7.54	0.021	< 0.0030	14	0.012	0.0045	< 0.020	< 0.000025	0.0011	0.00072	21	< 0.00020	---	0.017	0.021	0.00076	< 0.00010	< 0.00020	0.0044	0.0083
	04-Aug-2014		13	7.72	0.048	0.010	8.4	0.012	0.0028	< 0.020	0.000063	< 0.0010	0.0013	5.0	< 0.00020	---	0.025	0.018	0.0014	< 0.00010	< 0.00020	0.010	0.016
	07-Aug-2015		11	7.44	0.042	0.015	4.1	0.010	0.0027	< 0.020	0.00010	< 0.0010	0.0012	4.6	< 0.00020	---	0.014	0.019	0.0015	< 0.00010	< 0.00020	0.0098	0.012
	08-Aug-2016		8.5	7.66	0.029	< 0.010	< 2.0	0.0097	0.0027	< 0.020	0.00014	< 0.0010	0.0012	5.0	< 0.00020	---	0.016	0.023	0.0013	< 0.00010	< 0.00020	0.011	0.021
	15-Aug-2017		8.7	---	0.085	< 0.010	9.3	0.0090	0.0012	< 0.020	0.00017	< 0.0010	0.0025	1.0	< 0.00020	---	0.019	0.022	0.0018	< 0.00010	< 0.00020	0.010	0.015
	22-Nov-2017		6.5	---	0.043	< 0.010	3.8	0.0081	0.0016	< 0.020	0.000071	< 0.0010	0.00094	4.0	< 0.00020	< 0.0000020	0.017	0.019	0.0012	< 0.00010	< 0.00020	0.0083	0.012
	18-Jul-2018		7.2	---	0.040	< 0.010	2.3	0.18	0.0070	< 0.020	0.00030	0.0014	0.0091	3.5	0.0016	0.0000051	0.017	0.032	0.0025	< 0.00010	< 0.00020	0.012	0.037
	20-Sep-2018		10	---	0.14	< 0.010	4.2	0.0071	0.00059	< 0.020	0.00015	< 0.0010	0.0045	0.28	< 0.00020	0.0000021	0.012	0.022	0.0010	< 0.00010	< 0.00020	0.0097	0.021
BI-13-5-2	03-Aug-2014	**W-CAT-2**	300	7.52	0.011	< 0.010	18	0.0094	0.0016	< 0.020	0.00010	< 0.0010	0.0029	5.1	< 0.00020	---	0.0057	0.014	0.00049	< 0.00010	< 0.00020	0.0092	0.0097
	09-Aug-2015		---	---	---	---	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-Aug-2016		95	7.98	0.14	< 0.010	3.3	0.0089	0.00057	< 0.020	0.000099	< 0.0010	0.0039	< 0.060	< 0.00020	---	0.0022	0.0059	0.00021	< 0.00010	< 0.00020	0.0023	0.0049
	18-Jul-2018		150	---	0.17	< 0.010	---	0.086	0.00065	< 0.020	0.000069	< 0.0010	0.0040	0.21	0.00023	---	0.0024	0.0045	< 0.00020	< 0.00010	< 0.00020	0.0025	0.0057
BI-13-6-2	03-Aug-2014	**W-CAT-2**	9.8	7.16	0.20	< 0.010	15	0.018	0.0019	< 0.020	0.00012	< 0.0010	0.0046	2.2	< 0.00020	---	0.0036	0.0092	0.00047	< 0.00010	< 0.00020	0.0034	0.011
	09-Aug-2015		8.3	7.40	0.014	0.012	15	0.029	0.0038	< 0.020	0.00011	< 0.0010	0.0034	2.2	0.00041	---	0.0039	0.011	0.00066	< 0.00010	< 0.00020	0.0028	0.0061
	10-Aug-2016		8.5	7.74	0.052	< 0.010	10	0.032	0.0024	< 0.020	0.00015	< 0.0010	0.0036	1.5	0.00035	---	0.0034	0.012	0.00078	< 0.00010	< 0.00020	0.0032	0.0065
BI-14-10-3	04-Aug-2014	**W-CAT-2**	220	6.97	< 0.010	< 0.010	9.1	0.0066	0.0013	0.067	0.000092	< 0.0010	0.0017	2.7	< 0.00020	---	0.0031	0.011	0.00020	< 0.00010	< 0.00020	0.0074	0.028
	09-Aug-2015		96	7.29	0.016	0.012	20	0.0092	0.0074	< 0.020	< 0.000020	< 0.0010	0.0017	10	0.00032	---	0.0014	0.0058	0.00051	< 0.00010	< 0.00020	0.0032	0.0043
	11-Aug-2016		200	7.58	< 0.010	< 0.010	< 2.0	0.0086	0.0027	< 0.020	0.000058	< 0.0010	0.0012	13	< 0.00020	---	0.0022	0.011	0.00042	< 0.00010	< 0.00020	0.0058	0.013
BI-14-8-3	04-Aug-2014	**W-CAT-2**	9.3	7.29	0.46	< 0.010	6.7	0.0097	0.0021	< 0.020	0.00015	< 0.0010	0.0049	8.8	0.00024	---	0.0018	0.011	0.00057	< 0.00010	< 0.00020	0.0077	0.0057
	08-Aug-2015		7.5	7.24	0.084	< 0.010	< 2.0	0.0080	0.0036	< 0.020	0.000026	< 0.0010	< 0.00020	21	0.00020	---	0.0013	0.017	0.00064	< 0.00010	< 0.00020	0.014	0.014
BI-14-9-3	04-Aug-2014	**W-CAT-2**	17	7.55	0.20	< 0.010	23	0.017	0.0023	< 0.020	0.000022	< 0.0010	0.011	6.3	< 0.00020	---	0.0030	0.013	0.00094	< 0.00010	< 0.00020	0.0051	0.011
	08-Aug-2015		19	7.31	< 0.010	< 0.010	3.1	0.012	0.0032	< 0.020	< 0.000020	< 0.0010	< 0.00020	14	0.00025	---	0.0014	0.010	0.0011	< 0.00010	< 0.00020	0.0044	0.0042
	10-Aug-2016		26	7.56	0.12	0.028	9.2	0.021	0.0055	< 0.020	< 0.000020	< 0.0010	0.00070	24	< 0.00020	---	0.0014	0.0082	0.00088	< 0.00010	< 0.00020	0.0056	0.017
BI DP 08-5	18-Aug-2009	**W-CAT-2**	---	---	---	---	2	0.002	0.0018	0.03	0.00017	< 0.001	0.0021	0.35	< 0.0002	---	0.0013	0.012	0.0004	< 0.0001	< 0.0002	0.015	0.020
	23-Aug-2010		73	7.63	0.052	< 0.003	< 10	0.002	0.0013	0.03	0.00024	< 0.001	0.0025	0.07	< 0.0002	---	0.0011	0.012	0.0004	< 0.0001	< 0.0002	0.014	0.014
	21-Aug-2011		64	7.81	0.040	< 0.003	< 2	< 0.01	0.003	0.03	0.00006	**< 0.01**	0.002	5.3	< 0.002	---	< 0.002	0.011	**< 0.002**	**< 0.001**	**< 0.002**	0.013	< 0.03
	16-Aug-2012		52	7.77	0.12	0.0074	< 2.0	---	---	---	---	---	---	0.075	---	---	---	---	---	---	---	---	---
	25-Aug-2013		36	---	0.026	< 0.0030	---	0.0064	0.00085	0.021	0.00020	< 0.0010	0.0026	1.7	< 0.00020	---	0.00047	0.0095	0.00024	< 0.00010	< 0.00020	0.0085	0.018
	03-Aug-2014		61	---	0.32	< 0.010	---	0.0069	0.0023	< 0.020	0.000059	< 0.0010	0.0019	3.9	< 0.00020	---	0.0012	0.014	0.00029	< 0.00010	< 0.00020	0.010	0.016
	09-Aug-2015		130	---	0.040	0.012	---	0.0055	0.00077	< 0.020	0.00018	< 0.0010	0.0044	0.24	< 0.00020	---	0.00097	0.0096	0.00037	< 0.00010	< 0.00020	0.0079	0.012
	10-Aug-2016		130	---	0.017	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2017		140	---	0.033	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2018		130	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIS 02-4-5	22-Aug-2002	**W-CAT-2**	943	7.6	< 0.02	0.013	22	0.059	0.004	0.029	0.00035	< 0.001	0.0057	61.6	0.0010	**< 0.00005**	< 0.005	0.037	0.003	< 0.0001	< 0.0001	0.0125	0.031
	23-Aug-2003		974	6.6	< 0.2	< 0.06	---	---	< 0.005	0.054	**< 0.002**	< 0.007	< 0.009	2.262	**< 0.10**	**< 0.00005**	---	---	< 0.001	---	---	**< 1.0**	0.035
(Duplicate)	23-Aug-2003		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2004		401	7.1	< 2.0	< 0.06	---	< 0.025	**< 0.025**	0.041	0.00107	< 0.005	0.013	15.76	< 0.005	**< 0.00005**	< 0.005	0.048	**< 0.005**	**< 0.0005**	**< 0.0040**	0.014	< 0.005
	24-Aug-2005		468	7.4	< 0.2	< 0.06	40	0.006	< 0.005	< 0.05	0.00140	< 0.007	0.0192	2.26	< 0.001	**< 0.00005**	< 0.006	0.045	0.004	< 0.0001	< 0.0008	0.0148	0.033
	21-Aug-2006		433	7.2	< 0.2	< 0.06	24	< 0.005	< 0.005	< 0.05	0.00122	< 0.007	0.015	3.58	< 0.001	**< 0.00005**	< 0.006	0.050	0.001	< 0.0001	< 0.0008	0.013	0.017
(Duplicate)	21-Aug-2006		---	---	---	---	39	---	< 0.005	< 0.05	0.00112	< 0.007	0.016	3.62	< 0.001	**< 0.00005**	< 0.006	0.050	< 0.001	< 0.0001	---	0.013	0.025
	18-Aug-2009		1100	7.26	0.025	< 0.003	3	< 0.005	0.002	0.06	0.0022	< 0.005	0.006	0.08	< 0.001	---	< 0.001	0.033	< 0.001	**< 0.0005**	**< 0.001**	0.015	0.03
	23-Aug-2010		1100	7.02	0.052	< 0.003	5	0.002	0.0022	0.06	0.0025	< 0.001	0.0060	0.23	< 0.0002	---	0.0006	0.048	0.0004	< 0.0001	< 0.0002	0.017	0.027

Advisian
WorleyParsons Group

Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols: Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Dissolved Metals: Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.000026**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-2			**18**	**8.0**	**2.5**	**0.04**	**14**	**0.03**	**0.002**	**0.04**	**0.00047**	**0.001**	**0.010**	**12**	**0.001**	**0.000003**	**0.025**	**0.02**	**0.001**	**0.0001**	**0.0002**	**0.029**	**0.03**
W-CAT-7			**35**	**8.3**	**---**	**---**	**11**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BIS 97-1-3	15-Jul-1997	**W-CAT-2**	27.5	7.4	---	---	---	0.15	**< 0.04**	0.022	**< 0.002**	0.005	< 0.001	32.3	**< 0.02**	---	< 0.004	0.020	**< 0.03**	**< 0.01**	**< 0.02**	---	0.007
	08-Sep-1998		30.3	7	< 0.02	0.016	---	< 0.02	**< 0.04**	0.025	< 0.0001	0.007	0.002	0.479	0.03	**< 0.00005**	0.007	0.019	0.001	< 0.0001	**< 0.002**	---	< 0.002
	14-Sep-1999		35	7.4	< 0.02	0.006	14	< 0.02	0.007	0.011	0.0001	0.005	< 0.001	17.0	< 0.001	**< 0.00005**	< 0.004	0.021	0.001	< 0.0001	**< 0.02**	---	< 0.002
	20-Sep-2000		20	7.3	0.07	0.009	13	< 0.02	0.002	0.011	< 0.0001	< 0.005	< 0.005	0.878	< 0.001	**< 0.00005**	0.005	0.015	0.002	< 0.0001	**< 0.03**	---	< 0.005
	28-Aug-2001		20.2	7.7	0.17	0.013	32	0.03	**< 0.05**	0.012	**< 0.002**	< 0.005	0.006	0.220	**< 0.03**	---	< 0.005	0.017	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	22-Aug-2002		23.7	7.9	0.24	0.021	12	0.008	0.005	0.014	< 0.00010	0.002	0.0015	8.36	< 0.0005	**< 0.00005**	< 0.005	0.014	0.001	< 0.0001	< 0.0001	0.00464	0.007
	23-Aug-2003		26	7.0	< 0.2	< 0.06	---	---	< 0.005	< 0.050	**< 0.002**	< 0.007	< 0.009	0.655	**< 0.10**	**< 0.00005**	---	---	< 0.001	---	---	**< 1.0**	0.008
	22-Aug-2004		25	---	< 0.2	< 0.06	---	0.010	0.007	0.012	0.000082	< 0.005	< 0.002	1.528	< 0.001	**< 0.00005**	0.006	0.011	0.002	< 0.0001	< 0.0008	0.003	< 0.005
	24-Aug-2005		27.8	7.6	< 0.2	< 0.06	19	0.008	0.007	< 0.05	0.00018	< 0.007	0.006	0.416	< 0.001	**< 0.00005**	< 0.006	0.020	0.002	< 0.0001	< 0.0008	0.006	< 0.005
	21-Aug-2006		22	7.7	< 0.2	< 0.06	114	< 0.005	< 0.005	< 0.05	0.00023	< 0.007	0.003	7.34	< 0.001	**< 0.00005**	< 0.006	0.015	< 0.001	< 0.0001	< 0.0008	0.001	0.005
	19-Aug-2007		18	7.2	< 0.2	< 0.06	14	0.018	0.001	< 0.02	0.00019	< 0.001	0.0004	5.45	< 0.0002	---	0.0017	< 0.0005	< 0.001	< 0.0001	< 0.0002	0.0042	0.052
	18-Aug-2008		22	7.3	0.29	0.029	5	< 0.001	0.001	< 0.02	0.00027	< 0.001	0.0081	4.1	< 0.0002	---	0.0043	0.014	< 0.001	< 0.0001	< 0.0002	0.010	0.043
	18-Aug-2009		22	7.47	0.074	0.006	2	0.003	0.0014	< 0.02	0.00011	< 0.001	0.0027	17	< 0.0002	---	0.0027	0.017	0.0007	< 0.0001	< 0.0002	0.0056	0.015
	23-Aug-2010		25	7.39	0.083	0.012	3	0.001	0.0017	< 0.02	0.00009	< 0.001	0.0011	13	< 0.0002	---	0.0031	0.014	0.0007	0.0001	< 0.0002	0.0053	0.008
	21-Aug-2011		22	---	0.35	0.009	< 2	< 0.01	< 0.002	< 0.02	0.00015	**< 0.01**	0.002	4.5	**< 0.002**	---	0.003	0.014	**< 0.002**	**< 0.001**	**< 0.002**	0.006	< 0.03
	15-Aug-2012		21	7.60	0.13	0.014	< 2.0	0.0084	0.0018	< 0.020	0.00015	< 0.0010	0.0022	29	< 0.00020	---	0.0058	0.013	0.00064	< 0.00010	< 0.00020	0.0037	0.0095
	22-Nov-2017		20	---	0.050	0.019	14	0.0094	0.0021	< 0.020	0.000030	< 0.0010	0.00099	22	< 0.00020	< 0.0000020	0.0051	0.0092	0.0012	< 0.00010	< 0.00020	0.0019	0.0041
	20-Jul-2018		16	---	0.83	< 0.010	6.5	0.0039	0.0010	< 0.020	< 0.000020	< 0.0010	0.0017	1.8	< 0.00020	< 0.0000020	0.0045	0.0063	0.00045	< 0.00010	< 0.00020	0.0016	0.0053
	20-Sep-2018		22	---	0.011	< 0.010	7.6	0.012	0.0016	< 0.020	0.000046	< 0.0010	0.0019	27	< 0.00020	0.0000028	0.0041	0.0072	0.00056	< 0.00010	< 0.00020	0.0010	0.0058
BIS 97-2-4	08-Sep-1998	**W-CAT-2**	97.7	7.1	2.07	0.046	---	0.03	0.09	0.014	**< 0.002**	0.004	0.004	0.082	**< 0.02**	---	< 0.004	0.013	**< 0.03**	**< 0.01**	**< 0.02**	---	< 0.002
	20-Oct-1998		---	---	---	---	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-1999		180	7.3	2.44	0.017	11	< 0.02	0.001	0.020	0.0004	0.005	0.003	0.018	< 0.001	**< 0.00005**	< 0.004	< 0.008	0.003	< 0.0001	**< 0.02**	---	< 0.002
	20-Sep-2000		460	7.3	0.36	0.008	14	0.04	0.001	0.014	0.0003	< 0.005	0.006	0.146	< 0.001	**< 0.00005**	< 0.005	< 0.008	0.001	< 0.0001	**< 0.03**	---	< 0.005
	28-Aug-2001		509	7.4	0.25	0.013	7	< 0.02	**< 0.05**	0.014	**< 0.002**	< 0.005	< 0.005	0.013	**< 0.03**	---	< 0.005	0.009	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	22-Aug-2002		913	7.7	0.12	< 0.005	21	0.213	< 0.001	0.015	0.00037	< 0.001	0.0083	0.666	0.0008	**< 0.00005**	< 0.005	0.011	0.002	< 0.0001	< 0.0001	0.0179	0.008
	23-Aug-2003		1480	6.8	< 0.2	< 0.06	---	---	< 0.005	< 0.050	**< 0.002**	< 0.007	< 0.009	0.050	**< 0.10**	**< 0.00005**	---	---	< 0.001	---	---	**< 1.0**	< 0.005
	22-Aug-2004		3130	---	< 2.0	< 0.06	---	< 0.050	**< 0.050**	0.018	0.00256	< 0.005	0.067	37.25	**< 0.010**	**< 0.00005**	< 0.005	0.073	**< 0.010**	**< 0.0010**	**< 0.0080**	0.033	< 0.005
	24-Aug-2005		1310	7.5	0.5	< 0.06	31	< 0.005	< 0.005	< 0.05	0.00107	< 0.007	0.0197	0.287	< 0.001	**< 0.00005**	< 0.006	0.026	0.002	< 0.0001	< 0.0008	0.0147	0.009
	21-Aug-2006		1890	7.6	< 0.2	< 0.06	41	< 0.005	< 0.005	< 0.05	0.00203	< 0.007	0.014	0.292	< 0.001	**< 0.00005**	< 0.006	0.033	< 0.001	< 0.0001	< 0.0008	0.015	0.020
	19-Aug-2007		1550	7.0	0.2	< 0.06	19	0.004	0.001	0.02	0.00142	0.002	0.0141	0.09	< 0.0002	---	0.0004	0.0153	0.004	< 0.0001	< 0.0002	0.0217	0.019
(Duplicate)	19-Aug-2007		---	---	---	---	< 1	0.005	< 0.001	< 0.02	0.00148	0.008	0.0147	30.3	< 0.0002	---	0.0003	0.0164	0.004	< 0.0001	< 0.0002	0.0190	0.022
	18-Aug-2008		690	7.2	0.059	0.005	20	< 0.001	< 0.001	< 0.02	0.00035	< 0.001	0.0053	0.50	< 0.0002	---	0.0012	0.012	< 0.001	< 0.0001	< 0.0002	0.012	0.025
	18-Aug-2009		2300	6.98	0.010	0.003	4	0.003	0.0030	< 0.02	0.000070	< 0.001	0.0023	83	< 0.0002	---	0.0010	0.034	0.0008	< 0.0001	< 0.0002	0.016	0.016
	23-Aug-2010		1500	6.84	0.066	0.013	< 2	0.001	0.0027	< 0.02	< 0.00003	< 0.001	0.0010	59	< 0.0002	---	0.0017	0.033	0.0006	< 0.0001	< 0.0002	0.015	0.006
BIS 97-3-5	15-Jul-1997	**W-CAT-2**	59.5	7.5	---	---	---	0.07	**< 0.04**	0.024	**< 0.002**	0.005	0.001	16.1	**< 0.02**	---	< 0.004	0.039	**< 0.03**	**< 0.01**	**< 0.02**	---	0.008
	08-Sep-1998		122	7	0.17	0.022	---	0.03	**< 0.04**	0.025	**< 0.0001**	0.008	0.001	0.181	0.02	**< 0.00005**	< 0.004	0.025	< 0.001	< 0.0001	**< 0.002**	---	0.002
	20-Oct-1998		---	---	---	---	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	14-Sep-1999		73	6.8	0.02	0.008	10	< 0.02	0.001	0.031	0.0004	0.006	< 0.001	4.26	< 0.001	**< 0.00005**	< 0.004	0.017	0.002	< 0.0001	**< 0.02**	---	0.003
	20-Sep-2000		130	7	0.08	0.014	11	< 0.02	0.001	0.012	0.0003	< 0.005	< 0.005	0.995	< 0.001	**< 0.00005**	< 0.005	0.019	0.002	< 0.0001	**< 0.03**	---	0.006
	28-Aug-2001		117	7.6	0.15	0.009	3	0.04	**< 0.05**	0.024	**< 0.002**	< 0.005	< 0.005	0.089	**< 0.03**	---	< 0.005	0.015	**< 0.03**	**< 0.01**	**< 0.03**	---	< 0.005
	22-Aug-2002		181	7.8	0.05	0.012	10	1.05	0.004	0.019	0.00036	0.004	0.0051	12.3	0.0029	0.00077	< 0.005	0.029	0.001	< 0.0001	< 0.0001	0.0116	0.034
	23-Aug-2003		147	6.7	< 0.2	< 0.06	---	---	< 0.005	< 0.050	**< 0.002**	< 0.007	< 0.009	0.075	**< 0.10**	**< 0.00005**	---	---	0.002	---	---	**< 1.0**	0.015
	22-Aug-2004		123	---	< 2.0	< 0.06	---	< 0.015	**< 0.015**	0.016	0.000078	< 0.005	0.014	11.71	< 0.003	**< 0.00005**	< 0.005	0.028	**< 0.003**	**< 0.0003**	**< 0.0024**	0.009	< 0.005
	24-Aug-2005		139	7.6	< 0.2	< 0.06	15	0.005	< 0.005	< 0.05	0.00024	< 0.007	0.0119	3.68	< 0.001	**< 0.00005**	< 0.006	0.027	0.002	< 0.0001	< 0.0008	0.01	0.009
	21-Aug-2006		112	7.5	< 0.2	< 0.06	26	< 0.005	< 0.005	< 0.05	0.00052	< 0.007	0.008	4.34	< 0.001	**< 0.00005**	< 0.006	0.030	< 0.001	< 0.0001	< 0.0008	0.009	0.017
	19-Aug-2007		205	7.2	< 0.2	< 0.06	< 10	0.003	0.001	< 0.02	0.00050	0.006	0.0133	0.29	< 0.0002	---	0.0017	0.0157	0.002	< 0.0001	< 0.0002	0.0129	0.025
	18-Aug-2008		82	7.3	0.040	0.006	7	0.001	< 0.001	< 0.02	0.00034	< 0.001	0.0099	0.21	< 0.0002	---	0.0027	0.015	< 0.001	< 0.0001	< 0.0002	0.010	0.049
BIS-10-3-DP	29-Sep-2010	**W-CAT-2**	110	7.83	< 0.03	< 0.03	---	---	---	---	---	---	---	0.10	---	---	---	---	---	---	---	---	---
	16-Aug-2012		130	7.93	0.079	0.011	---	---	---	---	---	---	---	0.080	---	---	---	---	---	---	---	---	---
	24-Aug-2013		100	7.92	< 0.0030	0.0045	19	0.047	0.0079	0.033	0.000073	< 0.0010	0.0024	2.0	< 0.00020	---	0.0057	0.016	0.0013	< 0.00010	< 0.00020	0.0060	0.0055
	03-Aug-2014		130	7.64	0.048	< 0.010	45	0.020	0.0021	< 0.020	0.000059	< 0.0010	0.0034	0.89	< 0.00020	---	0.0054	0.0080	0.00038	< 0.00010	< 0.00020	0.0060	0.0080
	08-Aug-2015		140	7.55	0.011	< 0.010	< 4.0	0.026	0.0029	< 0.020	0.00015	< 0.0010	0.0030	0.51	< 0.00020	---	0.0042	0.011	0.00044	< 0.00010	< 0.00020	0.0053	0.0076
	08-Aug-2016		120	7.61	0.017	< 0.010	---	0.022	0.0023	< 0.020	0.000098	< 0.0010	0.0022	0.83	< 0.00020	---	0.0036	0.010	0.00049	< 0.00010	< 0.00020	0.0062	0.0073
	11-Aug-2017		110	---	0.020	< 0.010	---	---	---	---	---	---	---	0.16	---	---	---	---	---	---	---	---	---
	15-Jul-2018		130	---	< 0.010	< 0.010	---	0.012	0.0012	< 0.020	0.00011	< 0.0010	0.0037	0.31	< 0.00020	---	0.0028	0.0079	0.00036	< 0.00010	< 0.00020	0.0034	0.0068
BIS-10-4-DP	29-Sep-2010	**W-CAT-2**	19	7.85	0.14	0.005	---	---	---	---	---	---	---	0.14	---	---	---	---	---	---	---	---	---
	16-Aug-2012		29	7.67	0.046	0.011	---	---	---	---	---	---	---	1.0	---	---	---	---	---	---	---	---	---
	24-Aug-2013		25	7.82	< 0.0030	0.0048	16	0.010	0.0019	< 0.020	0.00011	< 0.0010	0.0023	0.44	< 0.00020	---	0.0023	0.0094	0.00071	< 0.00010	< 0.00020	0.010	0.0080
BIS-10-2-3	29-Sep-2010	**W-CAT-2**	550	7.51	0.003	< 0.003	10	< 0.001	0.0018	0.54	< 0.0003	< 0.001	0.0017	0.24	< 0.0002	---	0.0078	0.012	0.0010	< 0.0001	< 0.0002	0.017	0.004
	21-Aug-2011		400	7.75	< 0.003	< 0.003	17	< 0.01	0.005	1.0	< 0.00005	**< 0.01**	< 0.002	7.7	< 0.002	---	0.008	0.017	**< 0.002**	**< 0.001**	**< 0.002**	0.011	< 0.03
	16-Aug-2012		190	7.58	< 0.0030	< 0.0030	10	0.0040	0.0049	0.78	0.000028	< 0.0010	0.0018	3.7	< 0.00020	---	0.0097	0.019	0.00052	< 0.00010	< 0.00020	0.0060	0.022
	25-Aug-2013		38	---	< 0.0030	< 0.0030	20	0.011	0.0078	0.34	< 0.000025	< 0.0010	0.00043	2.6	< 0.00020	---	0.0043	0.0084	0.00029	< 0.00010	< 0.00020	0.0027	0.0035
	03-Aug-2014		7.9	---	< 0.010	< 0.010	9.2	0.0087	0.0046	0.16	< 0.000020	< 0.0010	< 0.00020	0.34	< 0.00020	---	0.0011	0.00070	< 0.00020	< 0.00010	< 0.00020	0.00039	0.0037
	08-Aug-2015		60	---	< 0.010	< 0.010	6.4	< 0.0030	0.0059	0.13	< 0.000020	< 0.0010	< 0.00020	8.5	< 0.00020	---	0.0039	0.0059	0.00058	< 0.00010	< 0.00020	0.0044	0.0055
BIS-10-1-3	29-Sep-2010	**W-CAT-2**	550	10.6	0.021	0.027	29	0.11	0.0096	0.21	< 0.00003	< 0.001	< 0.0002	< 0.06	< 0.0002	---	0.029	0.014	0.0010	< 0.0001	< 0.0002	0.0008	< 0.003
(Duplicate)	29-Sep-2010		---	---	---	---	31	0.18	0.0089	0.18	< 0.00003	< 0.001	< 0.0002	< 0.06	< 0.0002	---	0.034	0.012	0.0010	< 0.0001	< 0.0002	< 0.0001	< 0.003
	21-Aug-2011		580	9.52	< 0.003	< 0.003	27	0.03	0.008	0.25	< 0.00005	**< 0.01**	< 0.002	< 0.06	< 0.002	---	0.028	0.017	0.002	**< 0.001**	**< 0.002**	< 0.001	< 0.03
	16-Aug-2012		490	9.65	< 0.0030	< 0.0030	20	0.12	0.0088	0.21	0.000033	< 0.0010	0.00034	0.084	< 0.00020	---	0.036	0.0071	0.00084	< 0.00010	< 0.00020	0.00021	< 0.0030
(Duplicate)	16-Aug-2012		---	---	---	---	19	0.14	0.0090	0.20	0.000032	< 0.0010	0.00041	0.077	< 0.00020	---	0.036	0.0072	0.00099	< 0.00010	< 0.00020	0.00018	< 0.0030
	25-Aug-2013		480	---	< 0.015	0.021	33	0.21	0.011	0.092	0.000046	< 0.0010	0.00082	0.34	0.00034	---	0.044	0.013	0.0021	< 0.00010	< 0.00020	0.00012	< 0.0030
(Duplicate)	25-Aug-2013		490	---	0.016	0.023	54	0.21	0.0098	0.090	0.000033	< 0.0010	0.00062	0.20	0.00028	---	0.043	0.013	0.0022	< 0.00010	< 0.00020	< 0.00010	< 0.0030
	03-Aug-2014		530	9.11	< 0.010	< 0.010	33	0.044	0.011	0.22	0.00011	< 0.0010	0.00034	0.21	< 0.00020	---	0.026	0.0096	0.0010	< 0.00010	< 0.00020	0.00046	< 0.0030
(Duplicate)	03-Aug-2014		540	8.74	< 0.010	< 0.010	32	0.043	0.012	0.22	< 0.000020	< 0.0010	< 0.00020	0.27	< 0.00020	---	0.026	0.0096	0.0010	< 0.00010	< 0.00020	0.00054	< 0.0030
	09-Aug-2015		490	10.7	0.021	0.010	46	0.092	0.011	0.065	0.000022	< 0.0010	0.0014	0.068	0.00030	---	0.033	0.0098	0.0089	< 0.00010	< 0.00020	0.00017	< 0.0030
(Duplicate)	09-Aug-2015		490	10.7	0.027	< 0.010	38	0.066	0.012	0.075	< 0.000020	< 0.0010	0.0012	< 0.060	0.00035	---	0.032	0.0097	0.0057	< 0.00010	< 0.00020	0.00028	< 0.0030
BIS-10-3-3	29-Sep-2010	**W-CAT-2**	190	7.20	0.012	< 0.003	< 2	0.002	0.0014	0.03	0.00010	< 0.001	0.0041	0.33	< 0.0002	---	0.0024	0.030	0.0008	< 0.0001	< 0.0002	0.017	0.014
	21-Aug-2011		130	7.82	0.008	< 0.003	< 2	< 0.01	0.002	0.02	0.00019	**< 0.01**	0.003	3.4	< 0.002	---	< 0.002	0.041	**< 0.002**	**< 0.001**	**< 0.002**	0.017	< 0.03
	15-Aug-2012		110	7.55	0.0053	< 0.0030	< 2.0	0.0070	0.00095	< 0.020	0.00026	< 0.0010	0.0073	0.73	< 0.00020	---	0.0014	0.031	0.00058	< 0.00010	< 0.00020	0.0071	0.013
	24-Aug-2013		100	---	0.025	0.0047	10	0.011	0.0018	0.034	0.00013	< 0.0010	0.0022	3.8	< 0.00020	---	0.0020	0.030	0.0010	< 0.00010	< 0.00020	0.0090	0.011
	03-Aug-2014		110	---	0.052	< 0.010	8.1	0.0078	0.00075	< 0.020	0.00018	< 0.0010	0.0056	0.17	< 0.00020	---	0.0026	0.015	0.00041	< 0.00010	< 0.00020	0.0076	0.011
	08-Aug-2015		100	---	0.025	< 0.010	2.1	< 0.0030	0.00068	0.021	0.00013	< 0.0010	0.0034	0.10	< 0.00020	---	0.0021	0.014	0.00043	< 0.00010	< 0.00020	0.0060	0.0081
BIS-16-7-5	08-Aug-2016	**W-CAT-2**	610	7.28	0.054	0.033	200	0.0077	0.0038	< 0.020	0.000023	< 0.0010	0.00057	50	< 0.00020	---	0.0066	0.0061	0.00083	< 0.00010	< 0.00020	0.0076	0.011
	11-Aug-2017		620	---	< 0.010	< 0.010	110	0.015	0.011	< 0.020	< 0.000020	< 0.0010	0.00056	43	< 0.00020	---	0.0069	0.0026	0.00077	< 0.00010	< 0.00020	0.0062	0.0035
	15-Jul-2018		590	---	< 0.10	**< 0.10**	48	0.0084	0.011	< 0.020	< 0.000020	< 0.0010	0.00059	51	< 0.00020	---	0.0072	0.0025	0.00085	< 0.00010	< 0.00020	0.0052	0.0052
BIS-16-8-3	08-Aug-2016	**W-CAT-2**	13	6.91	0.016	0.011	< 2.0	0.014	0.0011	0.042	0.00034	< 0.0010	0.0042	0.29	< 0.00020	---	0.0023	0.034	0.00065	< 0.00010	< 0.00020	0.015	0.032
	11-Aug-2017		14	---	< 0.010	< 0.010	15	0.019	0.0016	0.023	0.000091	< 0.0010	0.0019	4.3	< 0.00020	---	0.0016	0.042	0.00082	< 0.00010	< 0.00020	0.027	0.026
	15-Jul-2018		12	---	< 0.010	< 0.010	10	0.027	0.0015	< 0.020	0.00092	< 0.0010	0.0029	13	0.00031	---	0.0020	0.045	0.0010	< 0.00010	< 0.00020	0.021	0.026
BIS-16-10-4	11-Aug-2016	**W-CAT-2**	600	7.48	< 0.010	< 0.010	3.8	0.018	0.0011	< 0.020	0.00011	< 0.0010	0.0022	7.7	< 0.00020	---	0.0051	0.026	0.0010	< 0.00010	< 0.00020	0.020	0.014
	11-Aug-2017		480	---	< 0.010	< 0.010	12	0.011	0.0011	< 0.020	0.00022	< 0.0010	0.0049	3.4	< 0.00020	---	0.0045	0.017	0.00048	< 0.00010	< 0.00020	0.021	0.0055
	20-Jul-2018		330	---	0.14	0.021	8.4	0.0092	0.00063	< 0.020	0.00016	< 0.0010	0.0035	0.96	< 0.00020	---	0.0030	0.011	0.00043	< 0.00010	< 0.00020	0.011	0.011
BIS-16-11-4	10-Aug-2016	**W-CAT-2**	190	7.38	< 0.010	< 0.010	4.5	0.014	0.0025	< 0.020	0.000055	< 0.0010	0.0014	53	< 0.00020	---	0.0026	0.022	0.00088	< 0.00010	< 0.00020	0.017	0.016
	11-Aug-2017		96	---	< 0.010	< 0.010	20	0.012	0.0021	< 0.020	0.000057	< 0.0010	0.0016	72	< 0.00020	---	0.0038	0.019	0.0011	< 0.00010	< 0.00020	0.011	0.011
	20-Jul-2018		420	---	< 0.10	**< 0.10**	15	0.0076	0.0015	< 0.020	0.00020	< 0.0010	0.0015	51	< 0.00020	---	0.0031	0.019	0.00096	< 0.00010	< 0.00020	0.012	0.013
BIS-16-12-5	08-Aug-2016	**W-CAT-2**	540	7.33	< 0.010	< 0.010	150	0.0054	0.0037	< 0.020	< 0.000020	< 0.0010	< 0.00020	32	< 0.00020	---	0.0038	0.011	0.00068	< 0.00010	< 0.00020	0.0093	0.014
	11-Aug-2017		520	---	< 0.010	< 0.010	33	0.010	0.012	< 0.020	< 0.000020	< 0.0010	< 0.00020	29	< 0.00020	---	0.0030	0.0027	0.00050	< 0.00010	< 0.00020	0.0062	< 0.0030
BIS6-17-SW01	27-Sep-2017	**W-CAT-7**	6.4	---	< 0.010	< 0.010	---	0.0042	0.00082	< 0.020	< 0.000020	< 0.0010	< 0.00020	0.082	< 0.00020	---	0.00026	0.00083	< 0.00020	< 0.00010	< 0.00020	0.00011	< 0.0030
	18-Jul-2018		3.7	---	< 0.010	< 0.010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIWS-16-1-4	03-Oct-2016	**W-CAT-2**	250	7.05	0.020	< 0.010	9.0	0.011	0.0020	0.039	0.00015	< 0.0010	0.0011	48	< 0.00020	---	0.0013	0.070	0.00086	< 0.00010	< 0.00020	0.013	0.027
	15-Aug-2017		180	---	< 0.050	< 0.050	14	0.0056	0.0022	< 0.020	< 0.000020	< 0.0010	0.0014	69	< 0.00020	---	0.00068	0.035	0.00056	< 0.00010	< 0.00020	0.0093	0.020
	18-Jul-2018		230	---	< 0.10	**< 0.10**	7.8	0.0037	0.0030	0.020	0.000055	< 0.0010	0.00053	81	< 0.00020	---	0.00087	0.035	0.00067	< 0.00010	< 0.00020	0.0074	0.013

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-2: Bear, Goose, and Frenchy's Islands - Surficial Sediments - 95th Percentile Background
W-CAT-7: Bear Island Surface Water - 95th

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Table 4
Water Analytical Results: Total Metals

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Total Metals														
			Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-2			**0.03**	**0.002**	**0.04**	**0.00047**	**0.001**	**0.010**	**12**	**0.001**	**0.025**	**0.02**	**0.001**	**0.0001**	**0.0002**	**0.029**	**0.03**
W-CAT-7			**0.64**	**0.005**	**0.02**	**0.00010**	**0.001**	**0.003**	**3.9**	**0.001**	**0.003**	**0.009**	**0.0006**	**---**	**0.0002**	**0.003**	**0.025**
BI SW01	18-Aug-2008	**W-CAT-7**	0.26	0.002	< 0.02	0.00003	< 0.001	0.0008	1.1	0.0005	0.0007	0.0020	< 0.001	< 0.0001	0.0002	0.0001	0.013
	18-Aug-2009		0.022	0.0013	< 0.02	0.000009	< 0.001	0.0006	0.25	< 0.0002	< 0.0002	0.0022	< 0.0002	< 0.0001	< 0.0002	0.0002	0.004
(Duplicate)	18-Aug-2009		0.029	0.0013	< 0.02	0.000009	< 0.001	0.0006	0.30	< 0.0002	< 0.0002	0.0024	< 0.0002	< 0.0001	< 0.0002	0.0002	< 0.003
	23-Aug-2010		0.038	0.0012	< 0.02	0.000013	< 0.001	0.0008	0.66	0.0003	0.0007	0.0018	< 0.0002	0.0002	< 0.0002	0.0001	0.003
(Duplicate)	23-Aug-2010		0.010	0.0008	< 0.02	0.000012	< 0.001	0.0005	0.24	< 0.0002	0.0004	0.0013	< 0.0002	< 0.0001	< 0.0002	0.0001	< 0.003
	21-Aug-2011		0.016	0.0043	< 0.02	0.000009	< 0.001	0.0004	0.26	< 0.0002	< 0.0002	0.0013	< 0.0002	< 0.0001	< 0.0002	< 0.0001	0.005
(Duplicate)	21-Aug-2011		0.004	0.0040	< 0.02	< 0.000005	< 0.001	0.0003	0.06	< 0.0002	< 0.0002	0.0011	< 0.0002	< 0.0001	< 0.0002	< 0.0001	0.006
	16-Aug-2012		0.0098	0.0018	< 0.020	< 0.000025	< 0.0010	0.00038	2.0	< 0.00020	< 0.00020	0.0016	0.00027	< 0.00010	< 0.00020	0.00016	0.014
(Duplicate)	16-Aug-2012		0.014	0.0021	< 0.020	< 0.000025	< 0.0010	0.00052	3.9	< 0.00020	< 0.00020	0.0019	0.00028	< 0.00010	< 0.00020	< 0.00010	0.014
	23-Aug-2013		0.022	0.0013	< 0.020	< 0.000025	< 0.0010	0.00021	1.1	< 0.00020	< 0.00020	0.0013	0.00026	< 0.00010	< 0.00020	< 0.00010	< 0.0030
(Duplicate)	23-Aug-2013		0.020	0.0013	< 0.020	< 0.000025	< 0.0010	< 0.00020	0.95	< 0.00020	< 0.00020	0.0012	0.00024	< 0.00010	< 0.00020	< 0.00010	< 0.0030
	03-Aug-2014		0.025	0.00099	< 0.020	< 0.000020	< 0.0010	0.00049	1.7	< 0.00020	< 0.00020	< 0.00050	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0042
(Duplicate)	03-Aug-2014		0.032	0.0014	< 0.020	< 0.000020	< 0.0010	0.00055	3.1	< 0.00020	< 0.00020	< 0.00050	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0056
	08-Aug-2015		0.013	0.0012	< 0.020	< 0.000020	< 0.0010	0.00025	1.8	< 0.00020	< 0.00020	0.0012	0.00024	< 0.00010	< 0.00020	< 0.00010	< 0.0030
(Duplicate)	08-Aug-2015		0.015	0.0013	< 0.020	< 0.000020	< 0.0010	0.00031	1.8	< 0.00020	< 0.00020	0.0011	0.00026	< 0.00010	< 0.00020	< 0.00010	< 0.0030
BI SW02	18-Aug-2008	**W-CAT-7**	0.026	< 0.001	< 0.02	< 0.00001	< 0.001	0.0003	0.24	< 0.0002	0.0011	0.0019	< 0.001	< 0.0001	< 0.0002	0.0007	0.064
	18-Aug-2009		0.031	0.0009	< 0.02	0.000009	< 0.001	0.0008	0.17	< 0.0002	0.0007	0.0020	< 0.0002	< 0.0001	< 0.0002	0.0005	0.003
	23-Aug-2010		0.001	0.0006	< 0.02	< 0.000005	< 0.001	0.0004	< 0.06	< 0.0002	0.0008	0.0008	< 0.0002	< 0.0001	< 0.0002	0.0005	< 0.003
	21-Aug-2011		0.002	0.0044	< 0.02	< 0.000005	< 0.001	< 0.0002	< 0.06	< 0.0002	0.0004	0.0013	< 0.0002	< 0.0001	< 0.0002	0.0003	0.003
	15-Aug-2012		0.0071	0.0014	< 0.020	< 0.000025	< 0.0010	0.00021	< 0.060	< 0.00020	< 0.00020	0.00059	< 0.00020	< 0.00010	< 0.00020	0.00011	0.0038
BI SW03	18-Aug-2008	**W-CAT-7**	0.42	0.002	< 0.02	0.00003	0.001	0.0013	1.3	0.0005	< 0.0002	0.0026	< 0.001	< 0.0001	< 0.0002	0.0003	0.20
	18-Aug-2009		0.019	0.0020	< 0.02	0.000011	< 0.001	0.0006	4.4	< 0.0002	0.0006	0.0050	< 0.0002	< 0.0001	< 0.0002	0.0013	< 0.003
	23-Aug-2010		0.002	0.0009	< 0.02	0.000009	< 0.001	0.0008	< 0.06	0.0008	0.0003	0.0011	< 0.0002	< 0.0001	< 0.0002	0.0003	< 0.003
	21-Aug-2011		0.003	0.0092	< 0.02	0.000011	< 0.001	0.0010	0.14	< 0.0002	0.0004	0.0039	0.0003	< 0.0001	< 0.0002	0.0005	0.006
	16-Aug-2012		**< 0.010**	0.0018	< 0.020	< 0.000025	< 0.0010	0.00032	5.3	< 0.00020	0.0029	0.0054	0.00043	< 0.00010	< 0.00020	0.011	0.0045
BI SW04	18-Aug-2008	**W-CAT-7**	2.9	0.005	< 0.02	0.00018	0.005	0.0062	5.7	0.0031	0.0006	0.0097	< 0.001	< 0.0001	< 0.0002	0.0006	0.049
	18-Aug-2009		0.013	0.0012	< 0.02	< 0.000005	< 0.001	0.0004	0.16	< 0.0002	0.0002	0.0027	< 0.0002	< 0.0001	< 0.0002	0.0003	< 0.003
	23-Aug-2010		0.002	0.0009	< 0.02	0.000006	< 0.001	0.0004	< 0.06	< 0.0002	< 0.0002	0.0011	< 0.0002	< 0.0001	< 0.0002	0.0002	< 0.003
	21-Aug-2011		0.005	0.0048	< 0.02	0.000006	< 0.001	0.0003	0.09	< 0.0002	< 0.0002	0.0014	< 0.0002	< 0.0001	< 0.0002	0.0001	0.004
	16-Aug-2012		0.011	0.0015	< 0.020	< 0.000025	< 0.0010	0.00030	0.15	< 0.00020	< 0.00020	0.00069	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.0041

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Table 4
Water Analytical Results: Total Metals

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Total Metals														
			Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-2			**0.03**	**0.002**	**0.04**	**0.00047**	**0.001**	**0.010**	**12**	**0.001**	**0.025**	**0.02**	**0.001**	**0.0001**	**0.0002**	**0.029**	**0.03**
W-CAT-7			**0.64**	**0.005**	**0.02**	**0.00010**	**0.001**	**0.003**	**3.9**	**0.001**	**0.003**	**0.009**	**0.0006**	**---**	**0.0002**	**0.003**	**0.025**
BI SW05	18-Aug-2008	**W-CAT-7**	0.25	0.002	< 0.02	< 0.00001	< 0.001	0.0009	0.58	< 0.0002	< 0.0002	0.0020	< 0.001	< 0.0001	< 0.0002	0.0013	**0.20**
	18-Aug-2009		0.007	0.0015	< 0.02	0.000008	< 0.001	0.0005	0.10	< 0.0002	< 0.0002	0.0027	< 0.0002	< 0.0001	< 0.0002	0.0004	< 0.003
	23-Aug-2010		0.004	0.0011	**0.03**	0.000005	< 0.001	0.0005	0.07	< 0.0002	0.0002	0.0012	< 0.0002	< 0.0001	< 0.0002	0.0001	< 0.003
	21-Aug-2011		0.019	**0.0080**	< 0.02	0.000013	< 0.001	0.0006	0.80	< 0.0002	0.0003	0.0026	0.0002	< 0.0001	< 0.0002	0.0004	0.006
	16-Aug-2012		0.089	0.0041	< 0.020	0.000047	< 0.0010	0.0017	**9.1**	0.00027	**0.0041**	0.011	0.00050	< 0.00010	< 0.00020	0.0027	0.013
	03-Aug-2014		0.020	0.0014	< 0.020	0.000021	< 0.0010	0.0012	0.24	< 0.00020	**0.0042**	0.0018	< 0.00020	< 0.00010	< 0.00020	**0.0038**	0.0074
	09-Aug-2015		0.0074	0.0013	< 0.020	0.000034	< 0.0010	0.00041	0.067	< 0.00020	0.00040	0.0013	< 0.00020	< 0.00010	< 0.00020	0.0010	< 0.0030
	10-Aug-2016		0.0060	0.00074	< 0.020	< 0.000020	< 0.0010	< 0.00020	0.090	< 0.00020	< 0.00020	< 0.00050	< 0.00020	< 0.00010	< 0.00020	< 0.00010	< 0.0030
	11-Aug-2017		0.0062	0.0014	< 0.020	0.000030	< 0.0010	< 0.00020	0.18	< 0.00020	< 0.00020	0.00052	< 0.00020	< 0.00010	< 0.00020	< 0.00010	< 0.0030
BI SW06	18-Aug-2008	**W-CAT-7**	0.20	0.002	< 0.02	0.00004	< 0.001	0.0012	0.37	< 0.0002	< 0.0002	0.0023	< 0.001	< 0.0001	< 0.0002	0.0002	**0.34**
	18-Aug-2009		0.007	0.0008	< 0.02	< 0.000005	< 0.001	0.0004	0.08	< 0.0002	0.0003	0.0015	< 0.0002	< 0.0001	< 0.0002	0.0002	0.006
	23-Aug-2010		0.021	0.0008	< 0.02	0.000015	< 0.001	0.0006	0.26	< 0.0002	0.0005	0.0023	< 0.0002	< 0.0001	< 0.0002	0.0003	0.005
	21-Aug-2011		0.036	0.0037	< 0.02	0.000039	< 0.001	0.0005	0.23	< 0.0002	0.0003	0.0029	< 0.0002	< 0.0001	< 0.0002	0.0003	0.008
	16-Aug-2012		0.10	0.0034	< 0.020	< 0.000025	< 0.0010	0.00085	1.3	0.00021	0.00054	0.0037	0.00024	< 0.00010	< 0.00020	0.00028	0.0088
	03-Aug-2014		0.012	0.00092	< 0.020	< 0.000020	< 0.0010	0.00070	0.082	< 0.00020	< 0.00020	< 0.00050	< 0.00020	< 0.00010	< 0.00020	0.00014	0.0052
	09-Aug-2015		0.046	0.0011	< 0.020	0.000028	< 0.0010	0.00043	0.66	< 0.00020	0.00029	0.0012	< 0.00020	< 0.00010	< 0.00020	< 0.00010	< 0.0030
BI SW-13-1	19-Sep-2013	**W-CAT-7**	0.020	0.00054	< 0.020	< 0.000025	< 0.0010	0.00083	0.072	0.0010	0.00082	0.0013	< 0.00020	< 0.00010	< 0.00020	0.00021	< 0.0030
	04-Aug-2014		0.027	0.00095	< 0.020	< 0.000020	< 0.0010	0.0010	0.13	< 0.00020	0.00056	0.0010	< 0.00020	< 0.00010	< 0.00020	0.00014	0.015
	07-Aug-2015		0.34	0.0011	< 0.020	0.000062	< 0.0010	0.0013	1.1	0.00050	0.00069	0.0025	< 0.00020	< 0.00010	< 0.00020	0.00021	0.0061
	11-Aug-2016		0.037	0.0011	< 0.020	< 0.000020	< 0.0010	0.00054	0.38	< 0.00020	0.00049	0.0015	< 0.00020	< 0.00010	< 0.00020	0.00015	< 0.0030
	14-Aug-2017		0.26	0.0039	< 0.020	0.000048	< 0.0010	0.00034	**7.5**	0.00048	0.00065	0.0021	< 0.00020	< 0.00010	< 0.00020	0.00024	0.0049
	18-Jul-2018		0.0081	0.00072	< 0.020	< 0.000020	< 0.0010	0.00076	0.067	< 0.00020	0.00069	0.0014	< 0.00020	< 0.00010	< 0.00020	0.00021	0.0041
BI-13-11	19-Sep-2013	**W-CAT-7**	0.011	0.00067	< 0.020	< 0.000025	< 0.0010	0.00032	0.062	< 0.00020	0.00061	0.0011	< 0.00020	< 0.00010	< 0.00020	0.00024	0.0031
	03-Aug-2014		0.18	0.0015	< 0.020	0.000020	< 0.0010	0.0012	0.83	0.00046	0.00025	0.0022	< 0.00020	< 0.00010	< 0.00020	< 0.00010	0.014
	09-Aug-2015		0.039	0.0010	< 0.020	0.000020	< 0.0010	0.00040	0.15	< 0.00020	0.00032	0.0011	< 0.00020	< 0.00010	< 0.00020	0.00012	< 0.0030
	10-Aug-2016		0.037	0.0016	< 0.020	< 0.000020	< 0.0010	0.00053	0.29	< 0.00020	0.00051	0.0028	< 0.00020	< 0.00010	< 0.00020	0.00022	0.012
	14-Aug-2017		**8.3**	**0.0073**	**0.28**	**0.00049**	**0.013**	**0.0094**	**76**	**0.0080**	0.0016	**0.093**	**0.0017**	< 0.00010	< 0.00020	0.00085	**0.34**
	18-Jul-2018		0.085	0.0020	< 0.020	0.000021	< 0.0010	0.00073	0.43	0.00027	0.00039	0.0026	< 0.00020	< 0.00010	< 0.00020	0.00023	0.0054
BI-13-12	19-Sep-2013	**W-CAT-7**	0.091	0.0012	< 0.020	< 0.000025	< 0.0010	0.00048	0.52	< 0.00020	0.00059	0.0017	< 0.00020	< 0.00010	< 0.00020	0.00025	0.0057
BIS 97-1-3	15-Jul-1997	**W-CAT-2**	**0.33**	**< 0.04**	< 0.04	**< 0.002**	**0.009**	< 0.002	**35.4**	**< 0.03**	< 0.004	0.02	**< 0.03**	**< 0.03**	**< 0.03**	---	0.01
BIS 97-3-5	15-Jul-1997	**W-CAT-2**	**0.24**	**< 0.04**	< 0.04	**< 0.002**	**0.010**	0.004	**17.8**	**< 0.03**	< 0.004	**0.04**	**< 0.03**	**< 0.03**	**< 0.03**	---	0.01
BIS6-17-SW01	27-Sep-2017	**W-CAT-7**	0.043	0.00087	< 0.020	< 0.000020	< 0.0010	0.00033	0.16	< 0.00020	0.00030	0.00087	< 0.00020	< 0.00010	< 0.00020	0.00012	0.0045

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Table 4
Water Analytical Results: Total Metals

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Total Metals														
			Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-2			**0.03**	**0.002**	**0.04**	**0.00047**	**0.001**	**0.010**	**12**	**0.001**	**0.025**	**0.02**	**0.001**	**0.0001**	**0.0002**	**0.029**	**0.03**
W-CAT-7			**0.64**	**0.005**	**0.02**	**0.00010**	**0.001**	**0.003**	**3.9**	**0.001**	**0.003**	**0.009**	**0.0006**	**---**	**0.0002**	**0.003**	**0.025**

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-2: Bear, Goose, and Frenchy's Islands - Surficial Sediments - 95th Percentile Background
W-CAT-7: Bear Island Surface Water - 95th Percentile Background

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH										
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**	**0.0034**
W-CAT-2			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**	**0.00010**	**0.00005**	**0.000010**	**0.000009**	**0.0000075**	**0.00001**	**0.00005**	**0.0001**	**0.00006**	**0.000020**	**0.0002**
W-CAT-7			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BI SW01	18-Aug-2008	**W-CAT-7**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013		< 0.00040	0.00052	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Aug-2013		< 0.00040	0.00056	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	03-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI SW02	18-Aug-2008	**W-CAT-7**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	15-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI SW03	18-Aug-2008	**W-CAT-7**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI SW04	18-Aug-2008	**W-CAT-7**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI SW05	18-Aug-2008	**W-CAT-7**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI SW06	18-Aug-2008	**W-CAT-7**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI SW-13-1	19-Sep-2013	**W-CAT-7**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	07-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2017		< 0.00040	0.0014	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI 08-1-4	21-Aug-2008	**W-CAT-2**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	15-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	15-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI 08-2-3	21-Aug-2008	**W-CAT-2**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	15-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	07-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI 08-3-2	18-Aug-2008	**W-CAT-2**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI 08-6-4	18-Aug-2008	**W-CAT-2**	0.17	0.012	0.018	0.013	0.25	0.7	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		0.0084	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	15-Aug-2012		0.18	< 0.00040	0.0030	< 0.00080	< 0.1	0.11	---	---	---	---	---	---	---	---	---	---	---
BI 08-7-2	18-Aug-2008	**W-CAT-2**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		0.0005	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2012		0.00043	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI 08-8-4	21-Aug-2008	**W-CAT-2**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	3.3	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2009		0.0098	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.4	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		0.014	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Aug-2010		0.015	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.2	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		0.012	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.6	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Aug-2011		0.026	< 0.0004	< 0.0004	< 0.0008	< 0.1	0.5	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2012		0.024	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.29	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Aug-2012		0.02	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.30	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		0.043	0.00080	0.00089	0.0054	< 0.1	0.23	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	03-Aug-2014		0.017	< 0.00040	< 0.00040	0.0022	< 0.1	0.31	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2015		0.031	< 0.00040	0.00048	< 0.00080	< 0.1	0.16	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	08-Aug-2015		0.031	< 0.00040	0.00050	< 0.00080	< 0.1	0.16	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2016		0.031	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.33	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	08-Aug-2016		0.033	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.46	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2017		0.052	0.00050	0.0015	0.0075	< 0.10	0.46	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	11-Aug-2017		0.051	0.00048	0.0015	0.0074	< 0.10	0.49	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2018		0.033	< 0.00040	0.00043	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI-13-1-4	19-Sep-2013	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	07-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	07-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	15-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	20-Sep-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI-13-11	19-Sep-2013	**W-CAT-7**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	10-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	14-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI-13-12	19-Sep-2013	**W-CAT-7**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH										
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**	**0.0034**
W-CAT-2			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**	**0.00010**	**0.00005**	**0.000010**	**0.000009**	**0.0000075**	**0.00001**	**0.00005**	**0.0001**	**0.00006**	**0.000020**	**0.0002**
W-CAT-7			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BI-13-2-4.5	19-Sep-2013	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	07-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	07-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	15-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI-13-3-4.5	19-Sep-2013	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Sep-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	07-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2016		0.00042	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	15-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	22-Nov-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	20-Sep-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI-13-5-2	03-Aug-2014	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	10-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI-13-6-2	03-Aug-2014	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	10-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI-14-10-3	04-Aug-2014	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI-14-8-3	04-Aug-2014	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BI-14-9-3	04-Aug-2014	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.15	---	---	---	---	---	---	---	---	---	---	---
	10-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	0.39	---	---	---	---	---	---	---	---	---	---	---
BI DP 08-4	18-Aug-2009	**W-CAT-2**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
BI DP 08-5	18-Aug-2009	**W-CAT-2**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BIS 02-4-5	22-Aug-2002	**W-CAT-2**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	23-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2004		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2005		< 0.0005	< 0.0005	< 0.0005	< 0.0015	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	21-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
BIS 97-1-3	28-Aug-2001	**W-CAT-2**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2002		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2004		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2005		< 0.0005	< 0.0005	< 0.0005	< 0.0015	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2007		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2008		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	20-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	15-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	22-Nov-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	20-Sep-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.00010	< 0.000050	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	< 0.00020
BIS 97-2-4	28-Aug-2001	**W-CAT-2**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2002		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2004		< 0.0005	< 0.0005	< 0.0005	(0.00070-0.0012)	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2005		< 0.0005	< 0.0005	< 0.0005	< 0.0015	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2007		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	19-Aug-2007		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2008		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2009		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2010		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
BIS 97-3-5	28-Aug-2001	**W-CAT-2**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2002		< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---
	23-Aug-2003		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	22-Aug-2004		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2005		< 0.0005	< 0.0005	< 0.0005	< 0.0015	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2006		< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	19-Aug-2007		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2008		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
BIS-10-3-DP	29-Sep-2010	**W-CAT-2**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BIS-10-4-DP	29-Sep-2010	**W-CAT-2**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	---	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BIS-10-2-3	29-Sep-2010	**W-CAT-2**	0.027	0.078	0.096	0.66	0.88	13	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		0.048	0.081	0.031	0.42	0.64	50	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2012		0.024	0.015	0.015	0.095	0.2	33	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013		0.084	0.089	0.05	0.29	0.23	3.5	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		0.071	0.11	0.11	0.64	1.1	110	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2015		0.0049	0.0044	0.0041	0.024	0.15	24	---	---	---	---	---	---	---	---	---	---	---
BIS-10-1-3	29-Sep-2010	**W-CAT-2**	0.68	0.39	0.046	0.23	0.64	48	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	29-Sep-2010		0.65	0.37	0.044	0.22	1.6	46	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		0.58	0.16	0.034	0.16	2.6	24	---	---	---	---	---	---	---	---	---	---	---
	16-Aug-2012		0.64	0.22	0.047	0.18	0.58	32	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	16-Aug-2012		0.63	0.2	0.046	0.17	0.69	38	---	---	---	---	---	---	---	---	---	---	---
	25-Aug-2013		0.72	0.43	0.054	0.24	0.5	22	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	25-Aug-2013		0.73	0.44	0.055	0.25	0.67	14	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		0.38	0.17	0.028	0.16	0.22	32	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	03-Aug-2014		0.42	0.18	0.037	0.18	0.33	39	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		0.68	0.7	0.12	0.65	1.8	420	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	09-Aug-2015		0.62	0.66	0.14	0.78	9.6	870	---	---	---	---	---	---	---	---	---	---	---
BIS-10-3-3	29-Sep-2010	**W-CAT-2**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---	---	---
	15-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	24-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	03-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	08-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BIS-16-7-5	08-Aug-2016	**W-CAT-2**	14	5.1	0.5	2	< 0.1	0.43	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2017		5.6	1.5	0.34	1.4	2.4	0.39	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2018		4.8	0.83	0.33	1.1	1.6	0.14	---	---	---	---	---	---	---	---	---	---	---

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC: Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	PAH: Acenaphthene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.0044**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**	**0.0034**
W-CAT-2			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**	**0.00010**	**0.00005**	**0.000010**	**0.000009**	**0.0000075**	**0.00001**	**0.00005**	**0.0001**	**0.00006**	**0.000020**	**0.0002**
W-CAT-7			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BIS-16-8-3	08-Aug-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	15-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BIS-16-10-4	11-Aug-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BIS-16-11-4	10-Aug-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BIS-16-12-5	08-Aug-2016	**W-CAT-2**	**5.3**	**3.5**	**0.45**	**1.9**	< 0.1	**0.50**	---	---	---	---	---	---	---	---	---	---	---
	11-Aug-2017		**3.2**	**0.0093**	**0.35**	**0.39**	**1.9**	**0.52**	---	---	---	---	---	---	---	---	---	---	---
BIS6-17-SW01	27-Sep-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
BIWS-16-1-4	03-Oct-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.00010	---	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020	---
	15-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---
	18-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

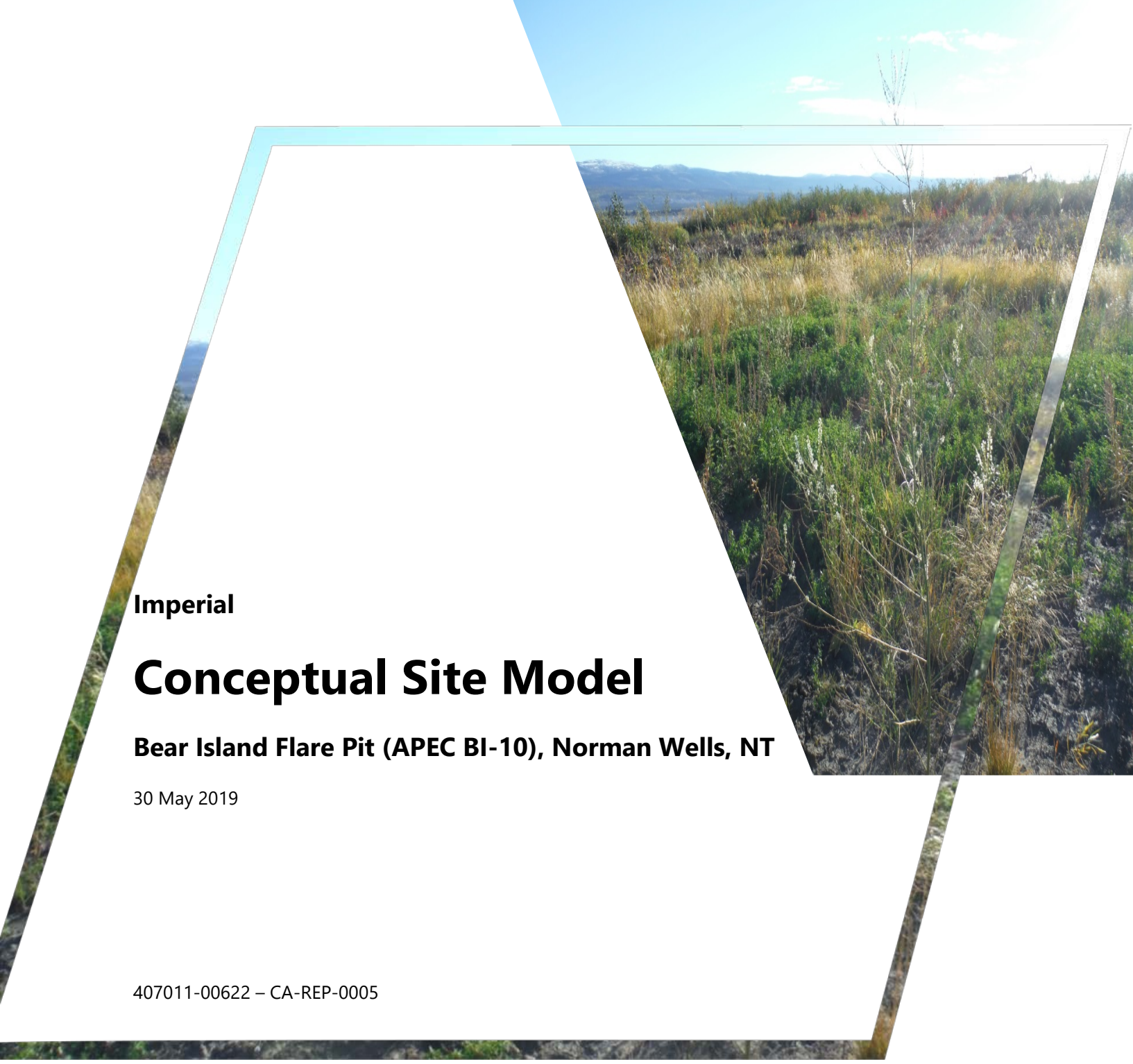
Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-2: Bear, Goose, and Frenchy's Islands - Surficial Sediments - 95th Percentile Background
W-CAT-7: Bear Island Surface Water - 95th Percentile Background

Appendix 11
Conceptual Site Model: Bear Island Flare Pit



Imperial

Conceptual Site Model

Bear Island Flare Pit (APEC BI-10), Norman Wells, NT

30 May 2019

407011-00622 – CA-REP-0005

Advisian
Suite 500, 151 Canada Olympic Rd SW
Calgary, AB T3B 6B7 CANADA
Phone: +1 403 247 0200
Facsimile: +1 403 247 4811
www.advisian.com

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Project No. 407011-00622-CA-REP-0005 - Conceptual Site Model: Bear Island Flare Pit (APEC BI-10), Norman Wells, NT

Rev	Description	Originator Approval	Reviewer Approval	Project Manager Approval	Date
0	Issued as Final	L. Glatiotis	M. Brown	S. Gibb	30-May-19

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Figure 5A Site Plan 3-D Visualization

Figure 5B Cross Section A-A' (North to South)

Figure 6A Soil Analytical Results: Inorganic Parameters

Figure 6B Soil Analytical Results: Organic Parameters

Figure 6C Excavation Soil Analytical Results: Organic Parameters

Figure 7A Groundwater and Surface Water Analytical Results: Inorganic Parameters

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Figure 8 Conceptual Site Model

Figure 9 Conceptual Exposure Model, Current Land Use and Site Conditions

Tables

Table 1 Soil Analytical Results: Inorganic Parameters

Table 2 Soil Analytical Results: Organic Parameters

Table 3 Water Analytical Results: Inorganic Parameters

Table 4 Water Analytical Results: Total Metals

Table 5 Water Analytical Results: Organic Parameters

1. Conceptual Site Model Summary

Site Description

LAND USE

Site Description:	Situated to the North of the former Bear Island Battery and current N-pad injection wells N-42X, N-40X, M-42X, M-39X. Access Road to the West of the site (Figure 1 and Figure 2).
Current Land Use:	CCME Industrial land use.
Future Land Use:	CCME Parkland land use.

HISTORICAL LAND USE

Infrastructure type:	Flare pit, possible former drilling pad (Figure 2).
Notes:	Used for disposal/combustion of fluids/gases from Battery (petroleum hydrocarbons [PHCs], polycyclic aromatic hydrocarbons [PAHs]), and buried metal debris.
Years Active:	From air photos, interpreted as pre-1979 to 1993 (Figure 2).

SITE SETTING

Topography and Drainage:	Steep slope at south end of site, rising up to N-Pad and former Bear Island Battery (Figures 2, 3, and 5A). Remainder of site is generally flat, then slopes north (down) to an unnamed creek. Site is subject to ice scouring and flooding during Mackenzie River spring breakup.
Nearby Surface Water Bodies (Distance and Direction):	Unnamed Creek flows North along the East side of the site (approximately 35 m to the East of the former flare pit), then roughly Northwest (approximately 20 m to the North of the former flare pit at closest point) to join with the Mackenzie River (~180 m North of the former flare pit).

SOIL AND GROUNDWATER CONDITIONS

Surficial Materials:	Silty clay, sandy silt (Figures 5A/B).
Depth to Permafrost:	0.6 to 1.5 mbgs, discontinuous.
Depth to Bedrock:	Not encountered to depth of 9 mbgs investigated.
Bedrock Lithology:	Not encountered.
Number of Groundwater-Bearing Zones:	1
Number of Piezometers:	4 current, 3 historical now destroyed/decommissioned.
Free Product in Upper GW-Bearing Zone:	Not encountered.
Free Product in Second GW-Bearing Zone:	N/A.

First Groundwater-Bearing Zone

Primary Soil Type/Lithology:	Unconsolidated silty sand, sand, and/or silt.
Dominant Grain Size:	Coarse (assumed porosity n=0.2).
Depth to Groundwater Surface:	~2 metres below top of casing (wells have not been surveyed).
Hydraulic Conductivity (Minimum):	9.9×10^{-6} m/s
Hydraulic Conductivity (Maximum):	3.6×10^{-5} m/s
Hydraulic Conductivity (Geometric Mean K):	1.9×10^{-5} m/s
Vertical Hydraulic Gradient:	Not assessed (underlain by discontinuous permafrost; wells have only been installed in uppermost water bearing zone).
Lateral Hydraulic Gradient (I):	Not assessed (current monitoring network distribution and lack of survey on current wells does not allow for interpretation of hydraulic gradient and/or flow velocity).
Groundwater Flow Direction and Velocity:	Groundwater is inferred to flow north towards the Mackenzie River. Current monitoring does not provide hydraulic gradient data to determine flow velocity.

HISTORICAL ENVIRONMENTAL ACTIVITIES

Soil and groundwater characterization and impact delineation (2011 to present). Locations of soils boreholes and water monitoring wells shown on Figures 4A/B.

Remedial excavation - partially complete (2014) with depth limited by groundwater seepage in base of excavation. Estimated 1,174 m^3 of impacted soil removed. Backfilled with sand sourced from Islands 4 and 5. Excavation shown in Figures 4A/B and 6C.

CURRENT STATUS

Remaining soil impacts (Figures 6A-C)

Sources and Impacts

SOURCES

Historical Sources:	Flare Pit (APEC BI-10, Appendix 4). Below-ground utility corridor (still in place) runs North-South to the East of the Flare Pit. Two flare lines from the former Bear Island Battery northward to the flare pit have been abandoned.
Current Sources:	Impacted soil (secondary source). Potential leaks/spills from below-ground utilities running North-South to the East of the former Flare Pit.

KNOWN ENVIRONMENTAL CONCERNS

a. Soil

Potential Contaminants of Concern:	Petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs), metals, salinity.
Proven Contaminants of Concern:	PHCs (F1-F4+). PAHs (fluorene, naphthalene, phenanthrene).
Lateral Delineation:	Lateral delineation of PHCs and PAHs has been achieved between former flare pit and Unnamed Creek, North of former flare pit. Lateral delineation of PHCs has also been achieved to the South between former flare line and below-ground utility corridor (BIFP-16-11). Lateral delineation of PHCs and PAHs historically achieved to the West, NW and SW of the former flare pit (Figures 6A-C).
Vertical Delineation:	Not achieved in excavated area due to soil saturation at depth. Not achieved to the south of the former flare pit, between the former flare line and below-ground

	utility corridor (BIFP-14-TP1, BIFP-14-TP2, BIFP-14-TP3, BIFP-16-11).
b. Groundwater	
Potential Contaminants of Concern:	PHCs, PAHs, metals, phenols, salinity.
Proven Contaminants of Concern:	PHCs (benzene). Metals (partially attributed to background concentrations). Phenols (partially attributable to background).
Presence of Free Product:	No free phase was observed during recent events.
Lateral Delineation:	Achieved to the North, East and South of identified benzene impact at BIFP-12-1-3; not achieved to the West (Figures 7A/B).
Vertical Delineation:	The upper groundwater-bearing zone (to approximately 2-3 mbgs) is currently instrumented. Permafrost has been observed in a few boreholes at depths between 0.6 and 1.5 mbgs and may provide a hydraulic barrier underlying the former flare pit issues at depth.

Migration Pathways and Receptors

MIGRATION PATHWAYS

Summarized in Figures 8 and 9.

Potential pathways include leaching from soil to groundwater, lateral migration in groundwater, discharge to surface water, shallow vapour migration in soil, water and wind erosion.

RECEPTORS

Summarized in Figures 8 and 9.

Main receptor of interest is the Unnamed Creek, in relation to human, wildlife and freshwater aquatic life receptors. Plants and soil invertebrates may also be receptors in the rooting zone of shallow soils.

EXPOSURE PATHWAYS

Summarized in Figures 8 and 9.

Synopsis of Conceptual Risk

In terms of soil-related exposure pathways, the remedial excavation has removed most PHC impacted source soils underlying the former flare pit footprint, to depths up to a maximum of 4.0 m (Figure 6C). Due to physical obstacles to further excavation including operational well sites on the former battery to the south, several pipelines east of the flare pit, the high water table and proximity to adjacent surface water bodies, some residual soil impacts exceeding PHC guidelines remain in place. Risks related to potential exposure pathways for human, ecological, microbial and wildlife direct contact or ingestion have been reduced by the partial flare pit excavation and subsequent placement of clean backfill, but not eliminated. The pathway for leaching from soil to groundwater is active, however measured PHC values in groundwater north of the excavation footprint do not exceed applied parkland guidelines.

In terms of groundwater-related exposure pathways, PHC concentrations exceeding the applied guidelines have not been observed. Any PHCs present in groundwater are not believed to have reached the closest surface water body (Unnamed Creek) and associated receptors. However, phenols and certain total metals are elevated at the creek north of the former flare pit. For this reason, the exposure scenarios related to wildlife watering and freshwater aquatic life are considered active. The exposure scenarios related to groundwater or surface water use for drinking water are considered inactive.

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Figures

FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-SITEAIRPHOTO2017.DWG

AIR PHOTO SOURCE: PLANET LABS GEOMATICS CORP.,
DATE: APRIL 6 AND 30, 2017

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IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND FLARE PIT, NORMAN WELLS, NT

SITE LOCATION MAP

Date:	29-MAY-19	Drawn by:	BMF	Edited by:	-	App'd by:	

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FIG No
1

REV
B

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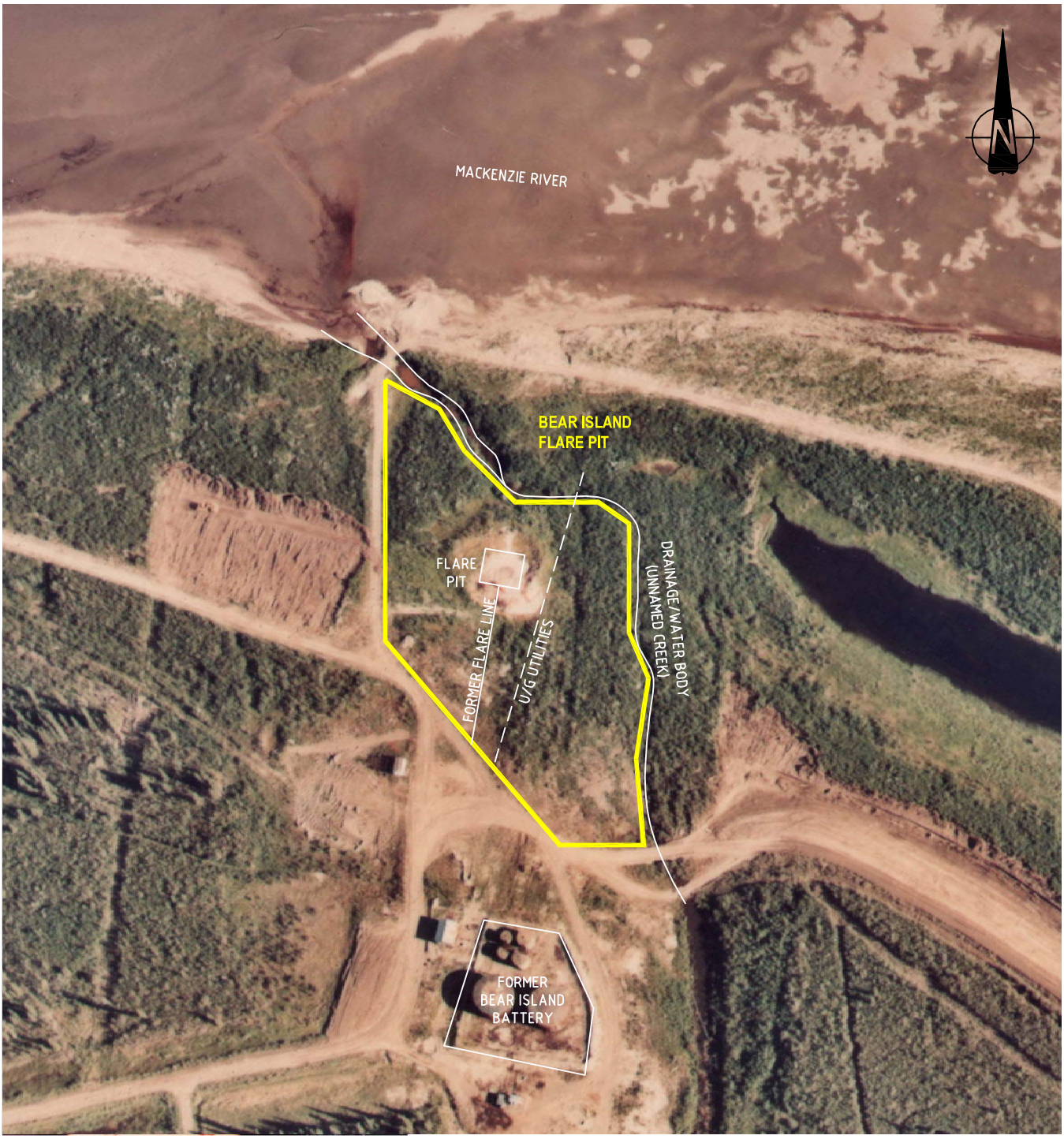
SAVE DATE & TIME: 17/5/2019 2:17:59 PM ISSUING OFFICE: eCAD



m 0 50 100 150 m

1:2500

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND FLARE PIT, NORMAN WELLS, NT

HISTORICAL AIR PHOTO 1979

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FIG No: 2
REV: A

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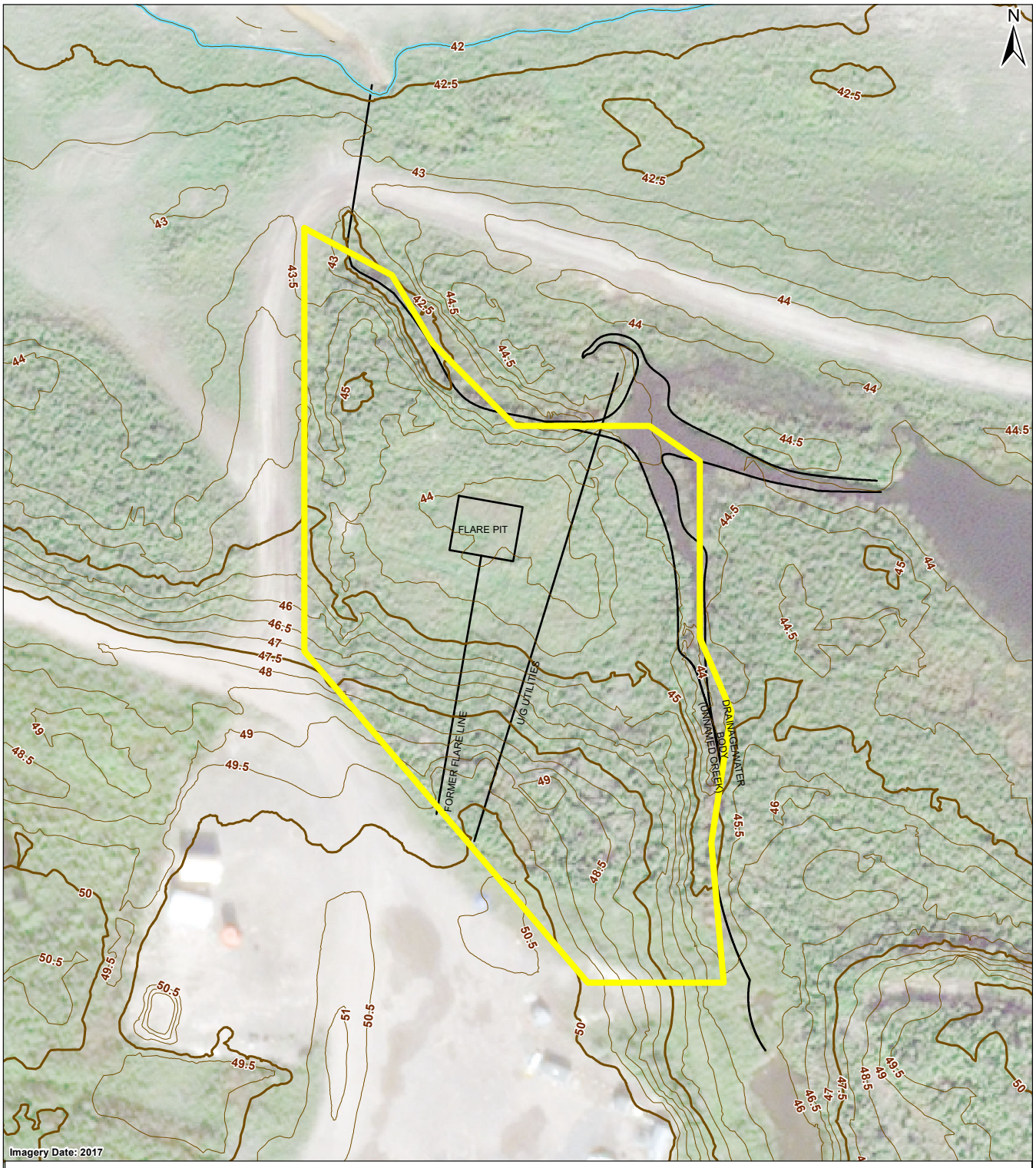

Mean High Water Elevation of the Mackenzie River
(Generally Corresponding to Lease Boundary/O.W.H.M as per UMA Engineering Ltd. Files 010166101 [Rev 0 dated 95-10-16] and 98100003 [Rev 1 dated 98-10-08])

Site Boundary

Elevation Contour (2.5m interval)

Elevation Contour (0.5m interval)

Source:
Airborne Imaging; 2012

0 25 50
Metres

1:1,500

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND FLARE PIT, NORMAN WELLS, NT

SITE PLAN SHOWING TOPOGRAPHY

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FIG No 3

REV A

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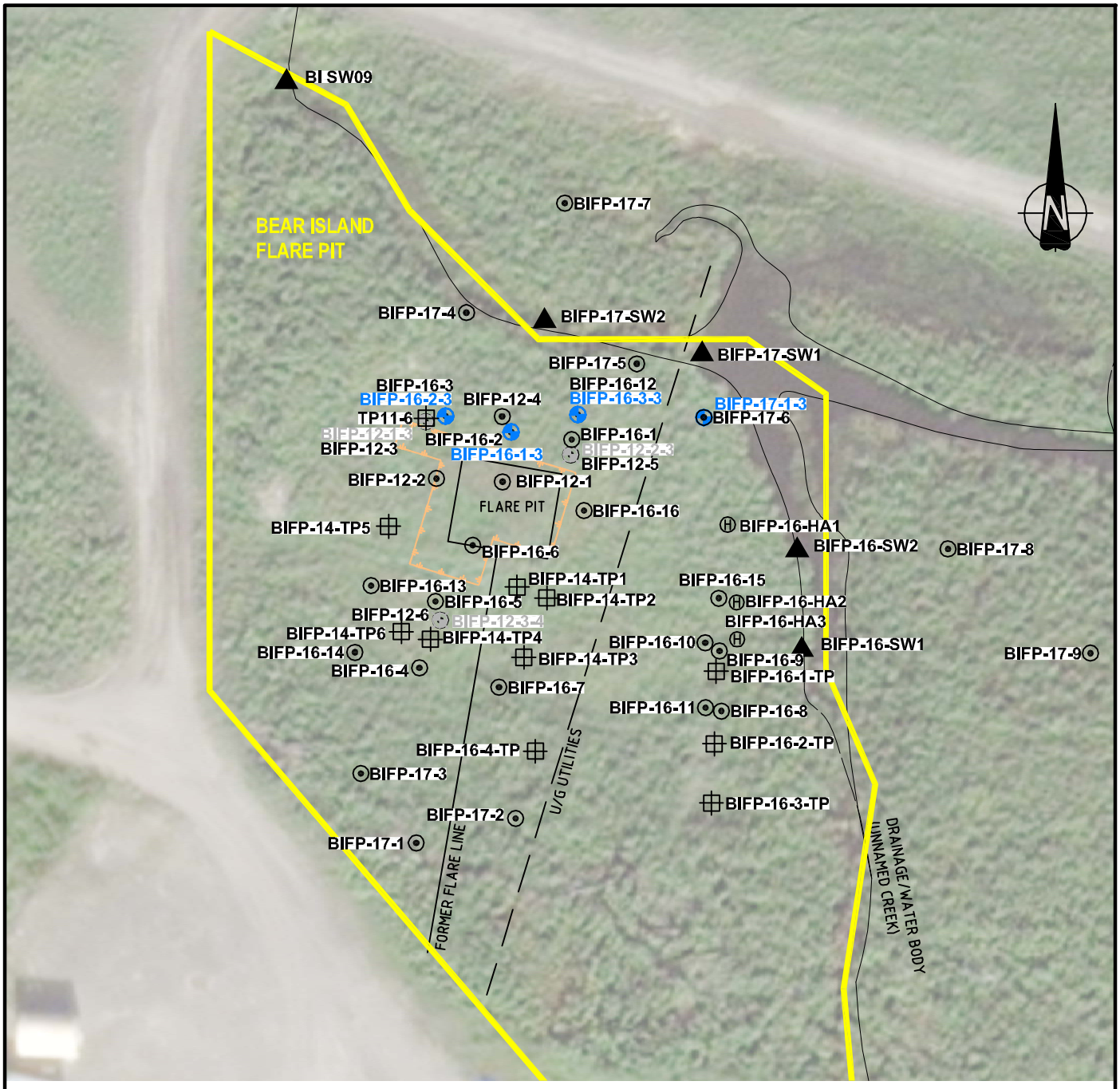
SAVE DATE & TIME: 2019-05-03 1:21:45 PM
USER NAME: Tom Graham
ISSUING OFFICE: CALGARY GIS

FILE LOCATION: N:\PROJECTS\ImperialOil\NormanWells\MXDs\407011-00622.500\Conceptual Site Model\BIFP\BIFP_Topography_RevA.mxd



LEGEND

- MONITORING WELL LOCATION
- SOIL SAMPLING LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- SURFACE WATER SAMPLE LOCATION
- TEST PIT LOCATION
- HAND AUGER LOCATION
- APPROXIMATE PERIMETER OF FORMER EXCAVATION

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

m 0 10 20 30 40 50 m

1:1000

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND FLARE PIT, NORMAN WELLS, NT

SITE PLAN SHOWING SAMPLING LOCATIONS

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FIG No 4A

REV C

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SAVE DATE & TIME: 14/5/2019 10:34:26 AM
USER NAME: blan.fink
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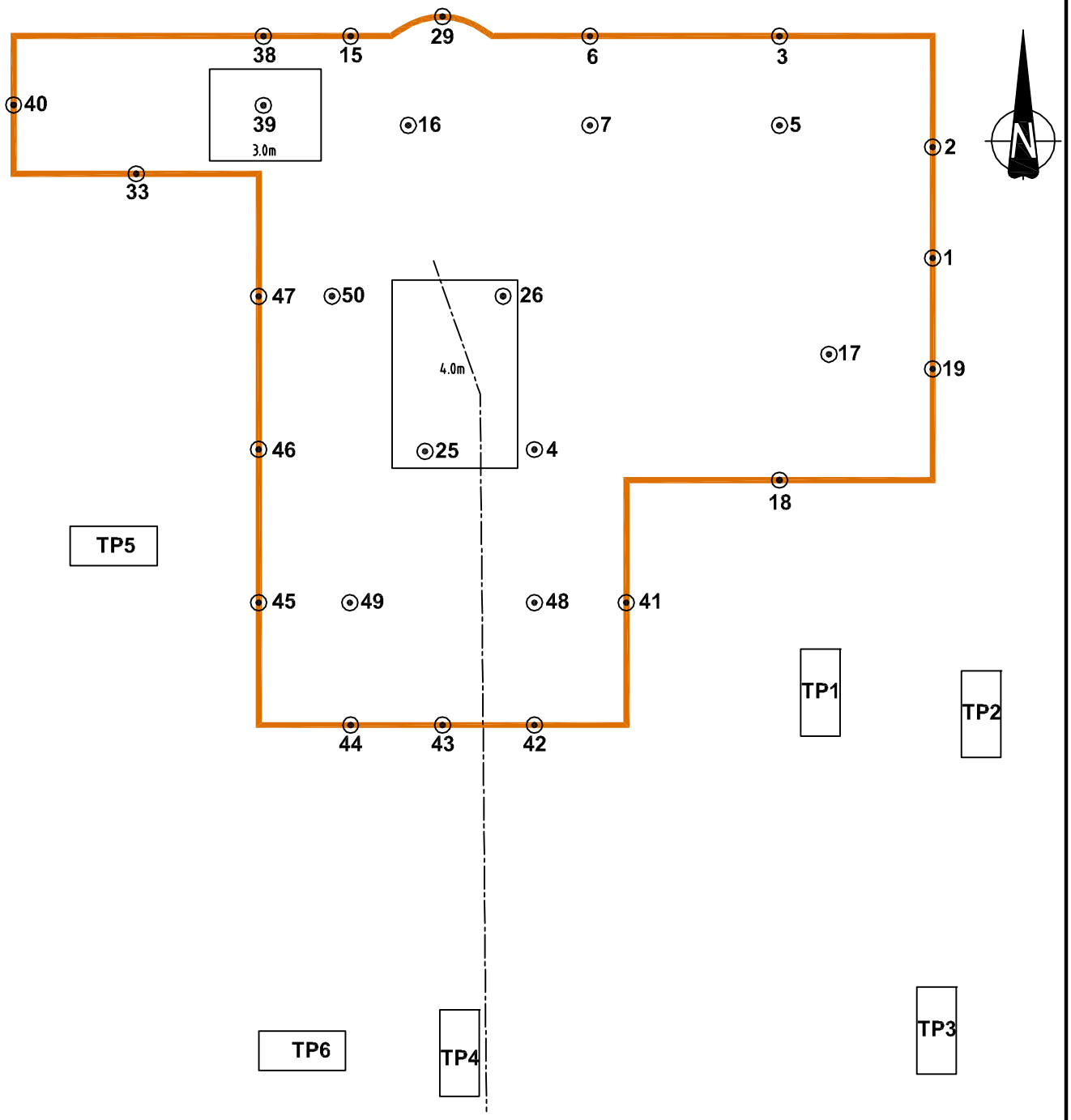
FILE LOCATION: U:\CAL\GBS\407011-00622\500 - 2019 REGULATORY AND SUPPORT\11.0_FIGURES_&_MAPS\11.4_CAD_FILES\00622-500-00-EN-DWG-2018-BEARISLAND_CSM.DWG



m 0 5 10 m

APPROXIMATELY 1:200

LEGEND

- BURIED FLARE LINE
- EXCAVATION OUTLINE
- SOIL SAMPLING LOCATION
- TP — TEST PIT LOCATION

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND FLARE PIT, NORMAN WELLS, NT

EXCAVATION SITE PLAN SHOWING SAMPLING LOCATIONS

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FIG No 4B | REV B

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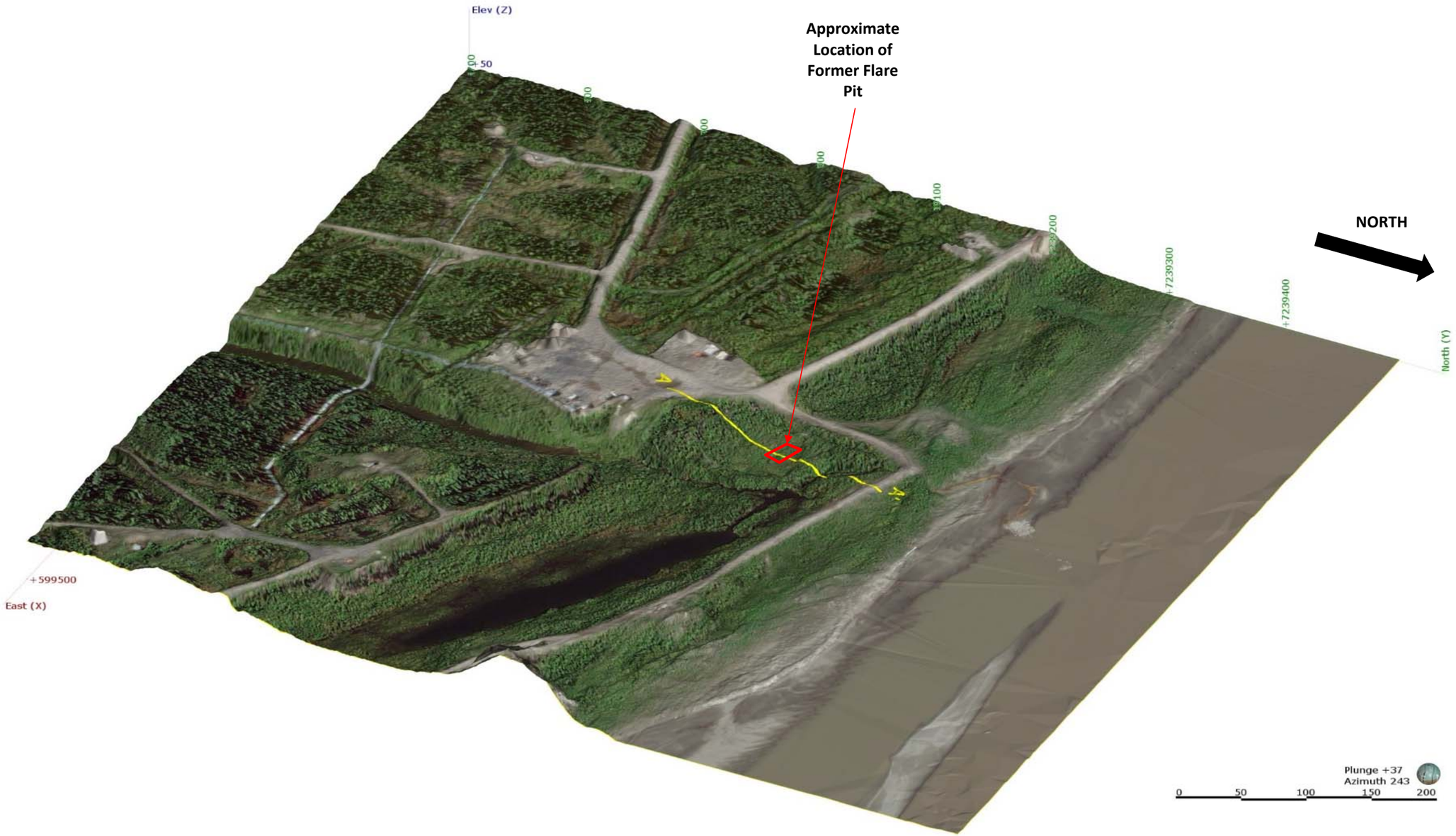

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND FLARE PIT, NORMAN WELLS, NT

SITE PLAN 3-D VISUALIZATION

Date: 10-May-19	Drawn by: AM	Edited by: LG	App'd by: MB

OneWay to zero harm

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FIG No. **5A** REV **A**

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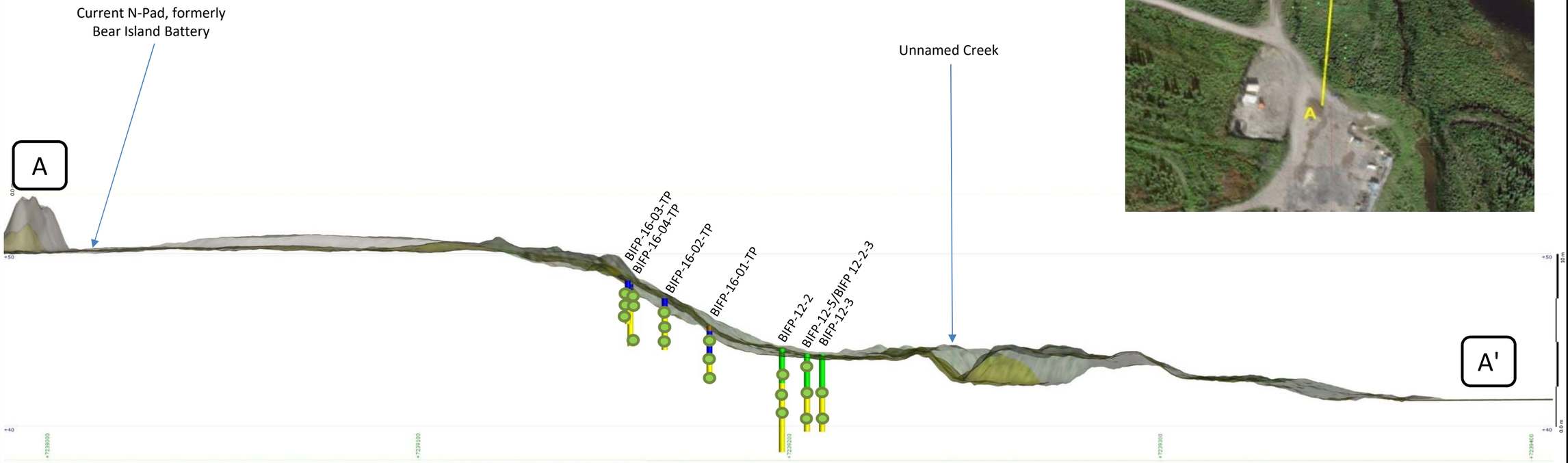
FILE DIRECTORY: U:\CALGBS\407011-00622\0400-CONCEPTUAL SITE MODEL\11.0_FIGURES_&_MAPS\11.5_PDF_FINAL_FIGURES\BIFP

NORTH



Unit

- CLAY
- TOPSOIL/FILL/ORGANICS
- SAND
- SILT

LOCATION WHERE SOIL SAMPLES ANALYZED FOR PETROLEUM HYDROCARBON PARAMETERS MET GUIDELINES, SHOWN IN GREEN

LOCATION WHERE SOIL SAMPLES ANALYZED FOR PETROLEUM HYDROCARBONS HAD ONE OR MORE PARAMETERS EXCEED GUIDELINES, SHOWN IN RED

Notes: 1) 5x Vertical Exaggeration.
2) Cross-Section width is 50 m.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND FLARE PIT, NORMAN WELLS, NT

CROSS-SECTION A-A' (SOUTH TO NORTH)

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FIG No. 5B
REV A

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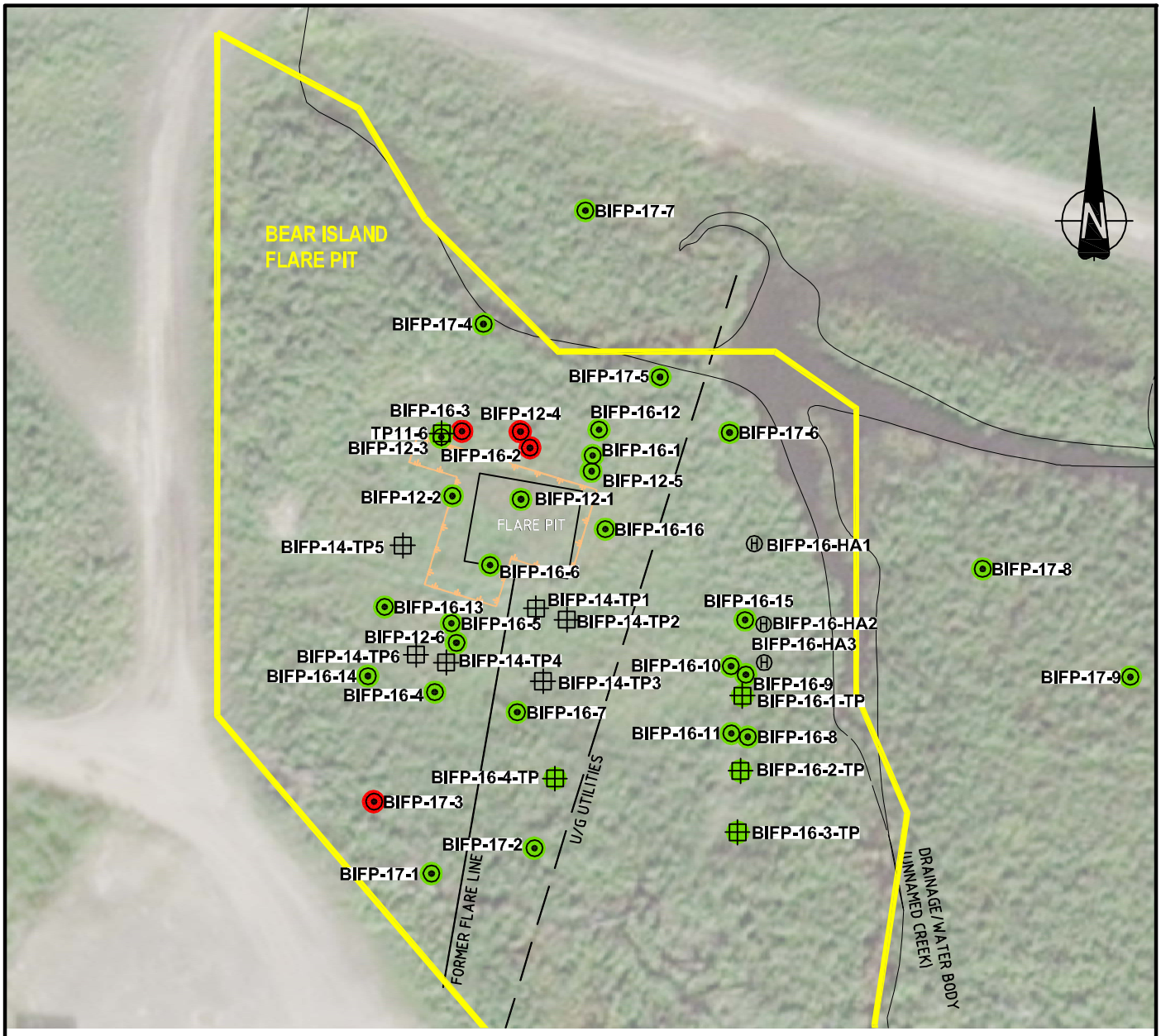
FILE DIRECTORY: U:\CAL\GBS\407011-00622\0400-CONCEPTUAL SITE MODEL\11.0_FIGURES_&_MAPS\11.5_PDF_FINAL_FIGURES\BIFP



LEGEND

- SOIL SAMPLING LOCATION
- TEST PIT LOCATION
- HAND AUGER LOCATION
- APPROXIMATE PERIMETER OF FORMER EXCAVATION

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLICABLE ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLICABLE ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED, SHOWN IN RED

m 0 10 20 30 40 50 m

1:1000

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND FLARE PIT, NORMAN WELLS, NT

SOIL ANALYTICAL RESULTS: INORGANIC PARAMETERS

Date:	Drawn by:	Edited by:	App'd by:
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WorleyParsons Project No.: 407011-00622-500

FIG No: 6A

REV: A

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SAVE DATE & TIME: 7/5/2019 10:14:50 AM
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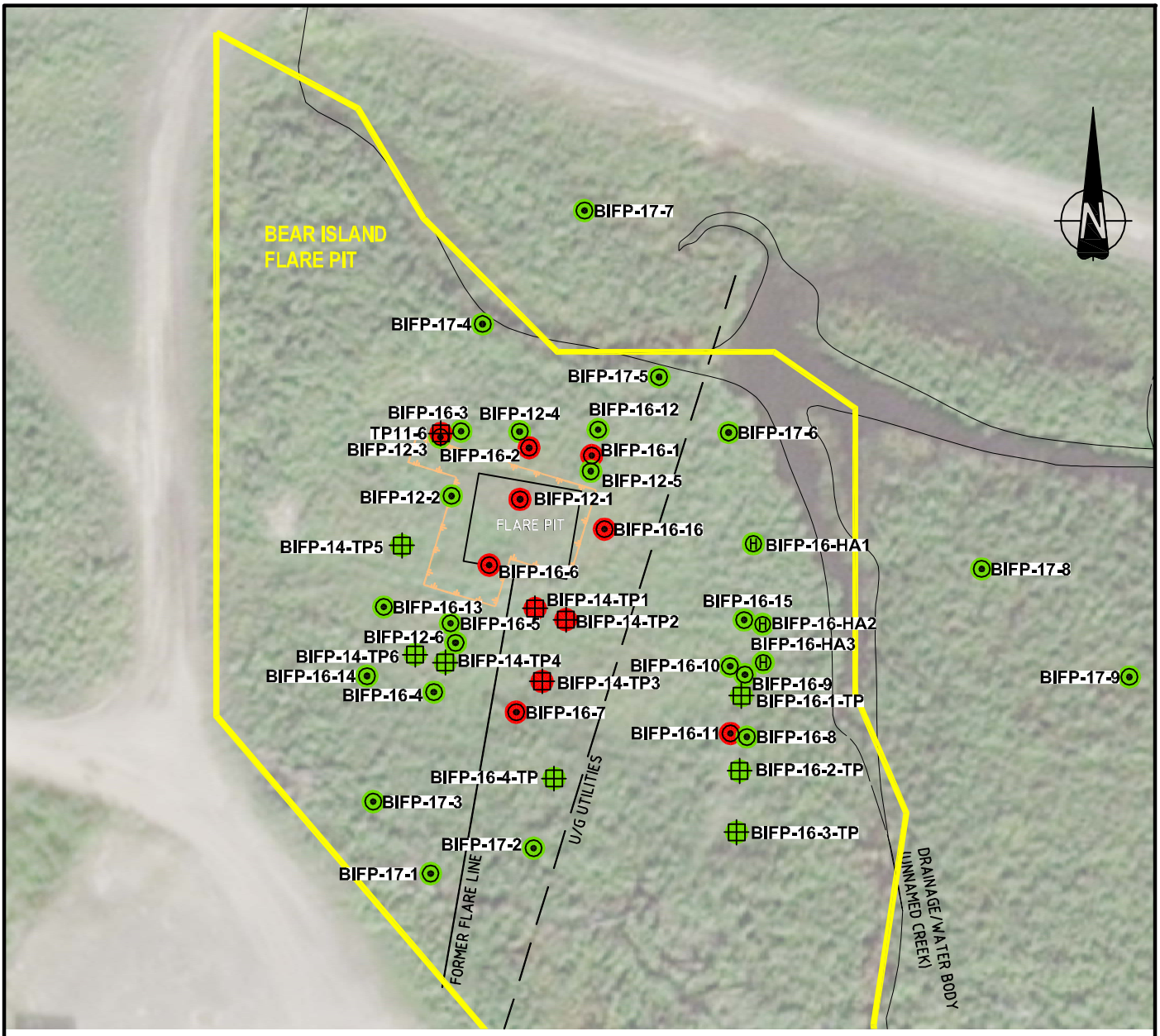

LEGEND

- SOIL SAMPLING LOCATION
- TEST PIT LOCATION
- HAND AUGER LOCATION
- APPROXIMATE PERIMETER OF FORMER EXCAVATION

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLICABLE ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLICABLE ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED, SHOWN IN RED

m 0 10 20 30 40 50 m

1:1000

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND FLARE PIT, NORMAN WELLS, NT

SOIL ANALYTICAL RESULTS: ORGANIC PARAMETERS

Date:	Drawn by:	Edited by:	App'd by:
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FIG No 6B | REV B

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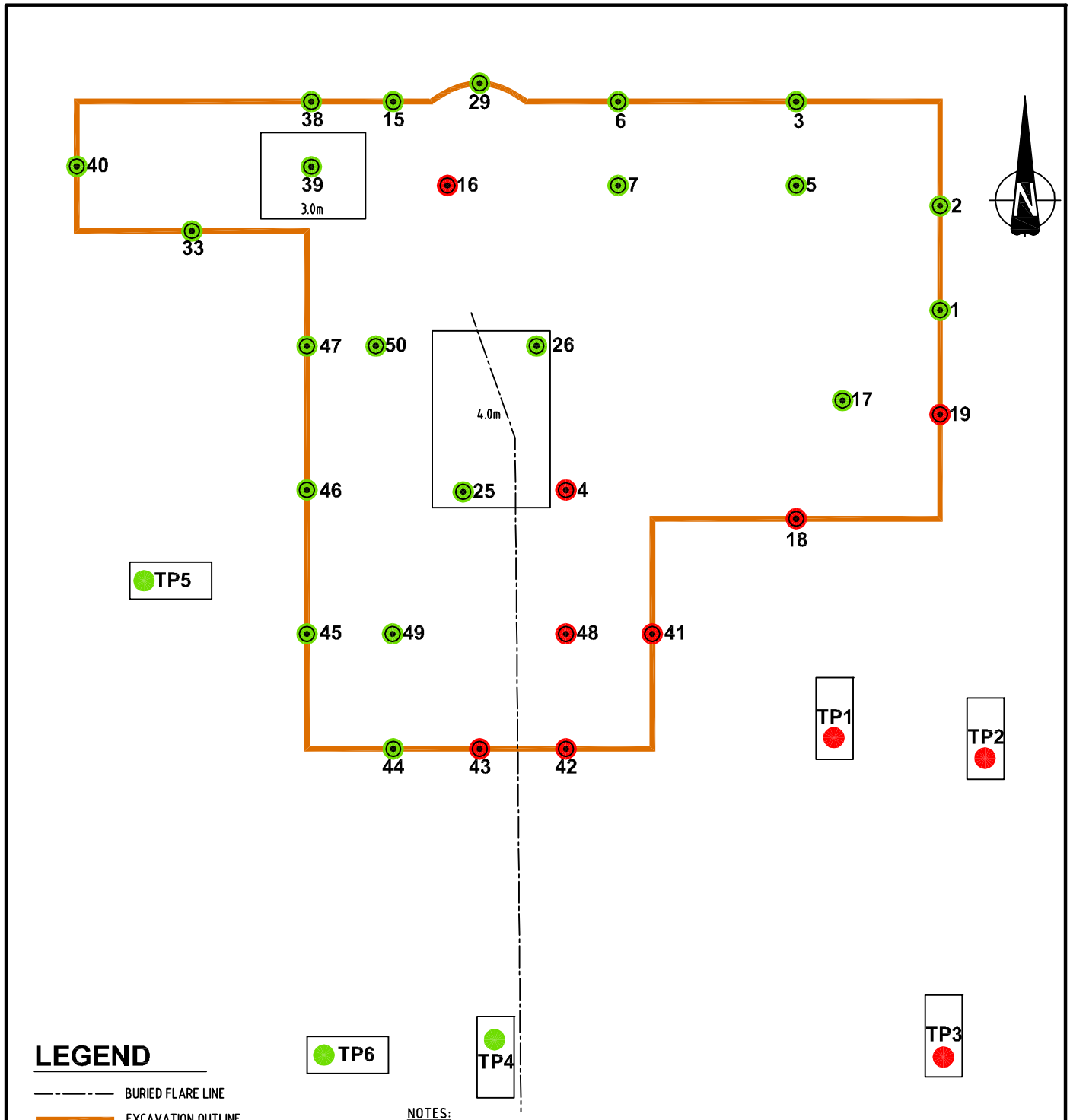

LEGEND

- BURIED FLARE LINE
- EXCAVATION OUTLINE
- EXCAVATION SAMPLING LOCATION (BIFP-14-XX)
- TP — TEST PIT LOCATION (BIFP-14-XXX)

ANALYTICAL RESULTS

- LOCATION WHERE ALL SOIL SAMPLES MET APPLICABLE ASSESSMENT CRITERIA FOR ALL PARAMETERS THAT WERE ANALYZED, SHOWN IN GREEN.
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDED APPLICABLE ASSESSMENT CRITERIA FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED, SHOWN IN RED

m 0 5 10 m

APPROXIMATELY 1:200

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND FLARE PIT, NORMAN WELLS, NT

EXCAVATION SOIL ANALYTICAL RESULTS: ORGANIC PARAMETERS

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FIG No 6C | REV C

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SAVE DATE & TIME: 14/5/2019 11:19:23 AM
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ISSUING OFFICE: eCAD

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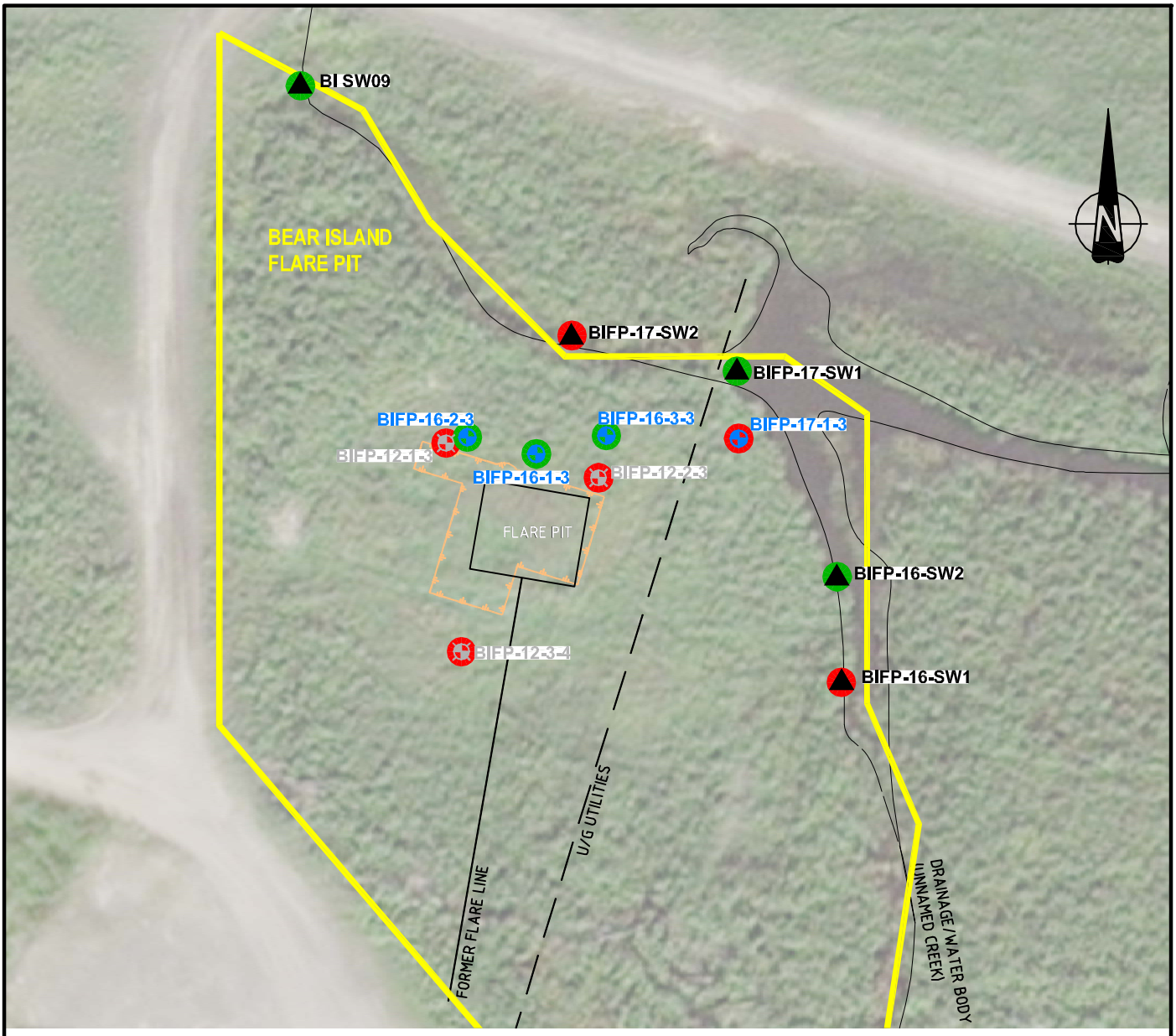

LEGEND

- MONITORING WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- SURFACE WATER SAMPLE LOCATION
- APPROXIMATE PERIMETER OF FORMER EXCAVATION

ANALYTICAL RESULTS

- LOCATION WHERE GROUNDWATER SAMPLE MET APPLIED ASSESSMENT CRITERIA AND/OR BACKGROUND FOR ALL PARAMETERS THAT WERE ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN GREEN.
- LOCATION WHERE GROUNDWATER SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA AND/OR BACKGROUND FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN RED
- LOCATION NOT SAMPLED IN MOST RECENT SAMPLING EVENT

m 0 10 20 30 40 50 m

1:1000

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND FLARE PIT, NORMAN WELLS, NT

GROUNDWATER AND SURFACE WATER ANALYTICAL RESULTS: INORGANIC PARAMETERS

Date:	29-MAY-19	Drawn by:	OTHERS	Edited by:	BMF	App'd by:	
Advisian WorleyParsons Group				WorleyParsons Project No.	407011-00622-500		
				FIG No	7A	REV	C

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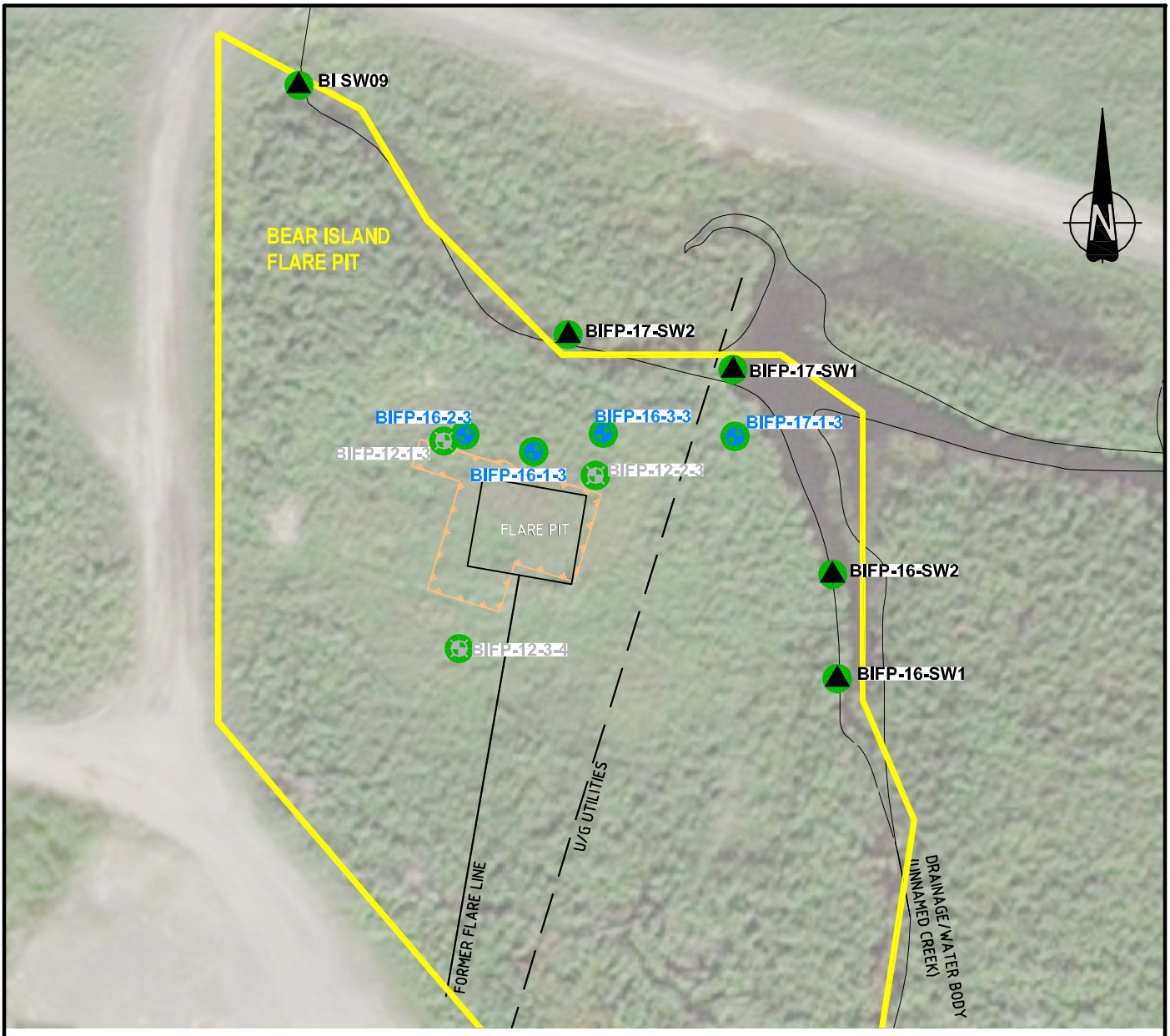

LEGEND

- MONITORING WELL LOCATION
- ABANDONED OR DESTROYED MONITORING WELL LOCATION
- SURFACE WATER SAMPLE LOCATION
- APPROXIMATE PERIMETER OF FORMER EXCAVATION

ANALYTICAL RESULTS

- LOCATION WHERE GROUNDWATER SAMPLE MET APPLIED ASSESSMENT CRITERIA AND/OR BACKGROUND FOR ALL PARAMETERS THAT WERE ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN GREEN.
- LOCATION WHERE GROUNDWATER SAMPLE EXCEEDED APPLIED ASSESSMENT CRITERIA AND/OR BACKGROUND FOR AT LEAST ONE PARAMETER THAT WAS ANALYZED IN MOST RECENT SAMPLING EVENT, SHOWN IN RED
- LOCATION NOT SAMPLED IN MOST RECENT SAMPLING EVENT

m 0 10 20 30 40 50 m

1:1000

NOTES:
1. WHERE GUIDELINE EXCEEDS APPLICABLE BACKGROUND CONCENTRATION, GUIDELINE HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
2. WHERE APPLICABLE BACKGROUND CONCENTRATION EXCEEDS GUIDELINE, BACKGROUND CONCENTRATION HAS BEEN ADOPTED AS ASSESSMENT CRITERIA FOR A GIVEN LOCATION/PARAMETER.
3. WHERE NO GUIDELINE IS AVAILABLE FOR A GIVEN PARAMETER, BACKGROUND CONCENTRATIONS ARE PRESENTED FOR COMPARISON ONLY AND NOT ADOPTED AS ASSESSMENT CRITERIA.

SOURCES:
1. SITE PLAN AS PER UMA ENGINEERING LTD. FILES 010166101 (REV 0 DATED 95-10-16) AND 98100003 (REV 1 DATED 98-10-08)
2. WORLEYPARSONS SURVEY 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND FLARE PIT, NORMAN WELLS, NT

GROUNDWATER AND SURFACE WATER ANALYTICAL RESULTS: ORGANIC PARAMETERS

Date:	Drawn by:	Edited by:	App'd by:
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FIG No: 7B
REV: B

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ISSUING OFFICE: eCAD

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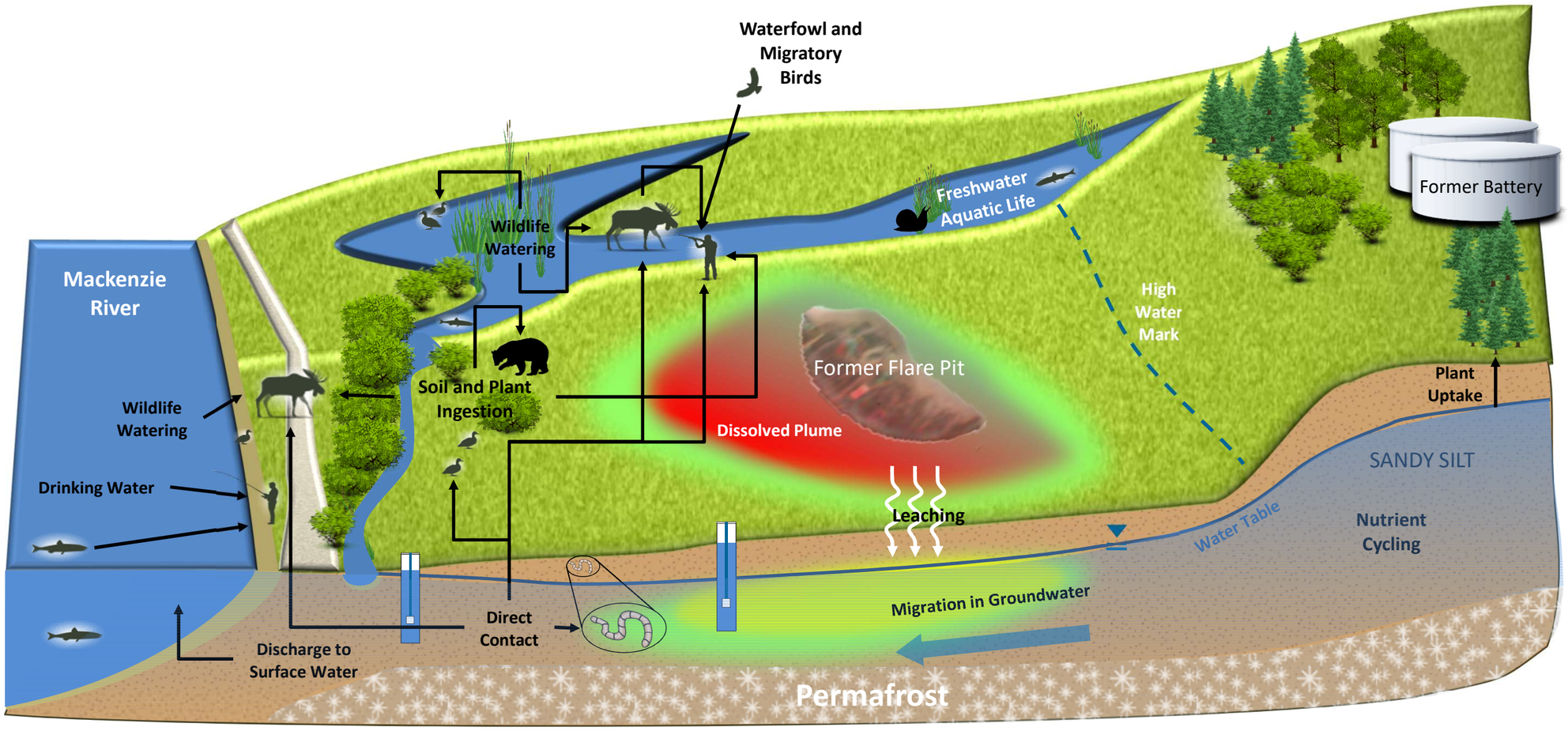

Health Canada, 2015. Conceptual Site Model Builder, Version 1.0. Developed by eSolutions Group Ltd. 2015.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND FLARE PIT, NORMAN WELLS, NT

CONCEPTUAL SITE MODEL

Date:	Drawn by:	Edited by:	App'd by:
10-May-19	AH	LG	MB

OneWay™ to zero harm

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WorleyParsons Project No.
407011-00622-500

FIG No. 8

REV A

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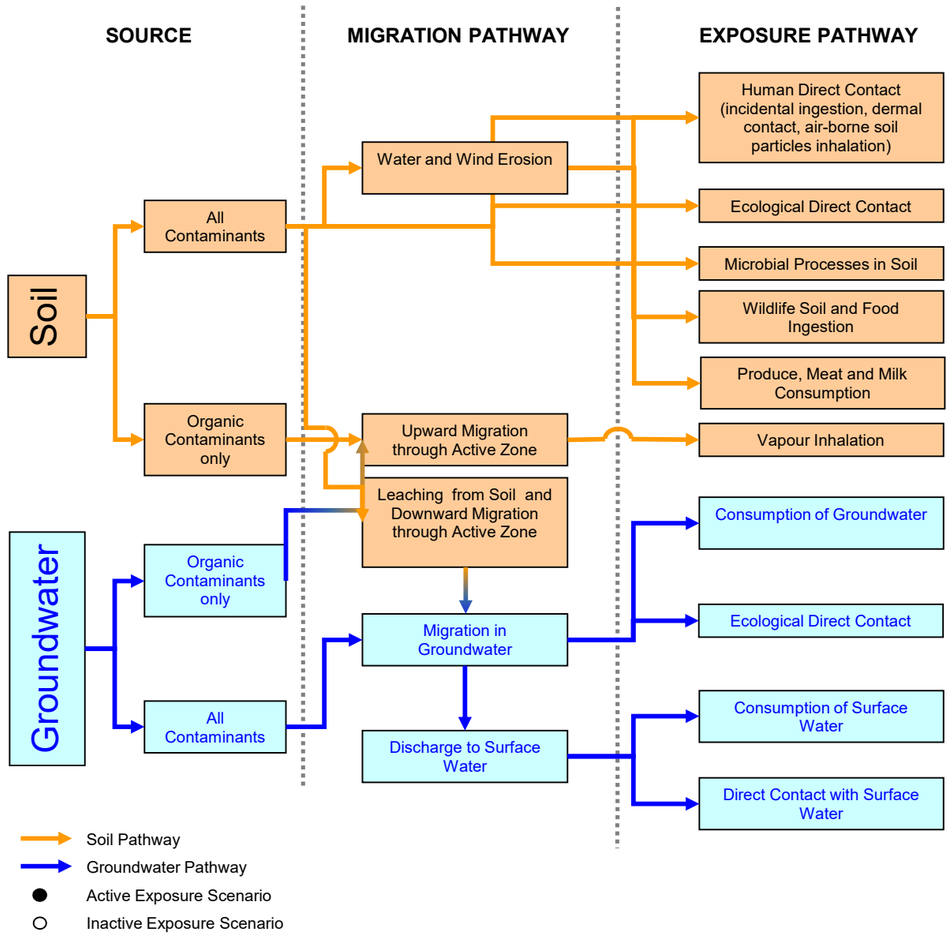
Bear Island Flare Pit - Conceptual Exposure Model Flow Chart (Current Land Use and Site Conditions)



RECEPTORS			
Humans	Wildlife	Plant and Soil Invertebrates	Freshwater Aquatic Life
●			
		●	
		●	
	●		
●[1]			
○			
		●	
○	●		
			●

Notes: 1) Although the current land use is industrial, it is recognized that due to the size of the site and the geographical features of the area (i.e. river, creek, etc.) animals may move on and off of the site, and hunters are able to hunt in close proximity to the site. As such, meat consumption through hunting should be considered as an active exposure pathway.

IMPERIAL
CONCEPTUAL SITE MODEL
BEAR ISLAND FLARE PIT, NORMAN WELLS, NT

CONCEPTUAL EXPOSURE MODEL
CURRENT LAND USE AND SITE CONDITIONS

Date:	Drawn by:	Edited by:	App'd by:
10-May-19	AH	LG	MB

OneWay™ to zero harm

Advision
WorleyParsons Group

WorleyParsons Project No.
407011-00622-500

FIG No. 9

REV A

" This drawing is prepared solely for the use of our customer as specified in the accompanying report.
WorleyParsons Canada Services Ltd. assumes no liability to any other party for any representations contained in this drawing."

FILE LOCATION: CALGARY

FILE DIRECTORY: U:\CALGBS\407011-00622\0400-CONCEPTUAL SITE MODEL\11.0_FIGURES_&_MAPS\11.5_PDF_FINAL_FIGURES\BIFP

Tables

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity			Total Metals																			
				Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Residential/Parkland Fine Surface [#1]				2	5	(6 - 8)	20	12	500	4	10	64	0.4	50	63	140	6.6	10	45	1	20	1	50	23	130	250
CCME Residential/Parkland Fine Sub-Surface [#2]				2	5	(6 - 8)	20	12	500	4	10	64	0.4	50	63	140	6.6	10	45	1	20	1	50	23	130	250
S-CAT-11				2.9	1.04	7.76	1	8.8	353	0.62	0.9	21.5	0.15	9.54	21.8	12.6	0.07	3.2	29.6	0.88	---	0.3	---	1	29.4	108.5
S-CAT-12				2.5	0.64	7.76	1	9.25	368	0.6	0.7	18	0.15	9.4	22.9	11	0.06	2.4	29.9	0.8	---	0.3	---	1	30	99.9
TP11-6	10-Aug-2011	2.0 - 2.5m	**S-CAT-12**	0.53	0.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-12-1	24-Jul-2012	0.5 - 1.0m	**S-CAT-12**	0.68	2.9	6.95	< 1.0	8.1	290	0.43	0.50	14	< 0.15	7.9	17	9.4	< 0.050	1.7	24	0.53	< 1.0	< 0.30	< 1.0	< 1.0	25	85
	24-Jul-2012	2.0 - 2.5m	**S-CAT-12**	0.65	0.55	6.68	< 1.0	4.9	200	< 0.40	0.42	11	< 0.15	6.5	12	6.6	< 0.050	1.8	20	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	20	61
	24-Jul-2012	4.0 - 4.5m	**S-CAT-12**	0.41	0.23	6.76	< 1.0	7.3	190	< 0.40	0.58	12	< 0.15	7.6	17	8.0	< 0.050	2.1	23	0.59	< 1.0	< 0.30	< 1.0	1.0	21	76
BIFP-12-2	24-Jul-2012	1.0 - 1.5m	**S-CAT-12**	0.56	0.67	6.87	< 1.0	8.3	290	0.42	0.59	15	< 0.15	8.3	17	9.7	< 0.050	1.8	25	0.57	< 1.0	< 0.30	1.0	< 1.0	25	90
	24-Jul-2012	2.0 - 2.5m	**S-CAT-12**	0.33	0.88	6.81	< 1.0	6.5	160	< 0.40	0.32	9.6	< 0.15	6.0	9.5	6.0	< 0.050	1.6	18	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	18	57
	24-Jul-2012	3.0 - 3.5m	**S-CAT-12**	0.44	4.3	6.93	< 1.0	7.0	180	< 0.40	0.37	11	< 0.15	6.8	12	6.6	< 0.050	1.5	20	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	21	67
BIFP-12-3	25-Jul-2012	1.0 - 1.5m	**S-CAT-12**	0.32	0.31	6.60	< 1.0	8.1	320	0.47	0.46	15	< 0.15	8.3	19	9.6	< 0.050	1.9	26	0.63	< 1.0	< 0.30	< 1.0	< 1.0	26	81
	25-Jul-2012	2.5 - 3.0m	**S-CAT-12**	0.41	0.24	6.91	< 1.0	5.2	130	< 0.40	0.23	9.3	< 0.15	5.2	8.0	5.1	< 0.050	1.4	16	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	16	46
	25-Jul-2012	4.0 - 4.5m	**S-CAT-12**	0.23	0.21	7.03	< 1.0	5.1	140	< 0.40	0.35	9.6	< 0.15	6.1	9.3	5.5	< 0.050	1.5	18	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	19	54
(Duplicate)	25-Jul-2012	4.0 - 4.5m	**S-CAT-12**	0.44	0.21	6.78	< 1.0	5.3	140	< 0.40	0.39	10	< 0.15	7.3	11	6.4	< 0.050	1.9	20	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	19	61
BIFP-12-4	24-Jul-2012	0.5 - 1.0m	**S-CAT-12**	0.57	5.4	6.98	< 1.0	9.4	340	0.49	0.52	15	< 0.15	8.6	19	10	< 0.050	1.9	26	0.62	< 1.0	< 0.30	< 1.0	< 1.0	27	89
	24-Jul-2012	2.0 - 2.5m	**S-CAT-12**	0.26	2.4	6.82	< 1.0	6.9	180	< 0.40	0.31	10	< 0.15	6.6	10	6.5	< 0.050	1.7	19	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	19	61
BIFP-12-5	25-Jul-2012	0.5 - 1.0m	**S-CAT-12**	0.32	0.37	6.99	< 1.0	10	300	0.45	0.53	15	< 0.15	8.5	18	9.7	< 0.050	1.9	26	0.60	< 1.0	< 0.30	< 1.0	< 1.0	26	85
	25-Jul-2012	1.5 - 2.0m	**S-CAT-12**	0.30	0.23	6.80	< 1.0	7.7	270	< 0.40	0.48	13	< 0.15	7.7	17	8.9	< 0.050	1.9	24	0.57	< 1.0	< 0.30	< 1.0	< 1.0	23	79
	25-Jul-2012	3.5 - 4.0m	**S-CAT-12**	0.19	0.23	7.24	< 1.0	4.5	92	< 0.40	0.20	7.7	< 0.15	4.9	5.8	4.4	< 0.050	1.1	14	< 0.50	< 1.0	< 0.30	< 1.0	< 1.0	15	40
BIFP-12-6	25-Jul-2012	0.7 - 1.2m	**S-CAT-12**	1.0	0.43	7.15	< 1.0	7.2	280	< 0.40	0.42	14	< 0.15	7.3	16	7.9	< 0.050	1.7	23	0.55	< 1.0	< 0.30	< 1.0	< 1.0	24	73
	25-Jul-2012	2.5 - 3.0m	**S-CAT-12**	0.47	0.43	6.85	< 1.0	7.7	220	< 0.40	0.77	12	< 0.15	8.5	17	7.7	< 0.050	2.3	24	0.67	< 1.0	< 0.30	< 1.0	1.6	22	74
BIFP-16-1	24-Sep-2016	0.5 - 1.0m	**S-CAT-12**	0.26	0.54	6.92	0.61	8.2	340	0.49	0.52	16	< 0.080	9.1	20	10	0.051	2.0	27	0.64	< 0.20	0.15	< 1.0	0.93	24	90
	24-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.25	0.52	6.81	0.57	9.0	320	0.46	0.53	16	< 0.080	9.7	20	10	< 0.050	2.2	28	0.63	< 0.20	0.15	< 1.0	0.93	25	90
	24-Sep-2016	2.5 - 3.0m	**S-CAT-12**	0.30	0.48	7.00	0.51	6.3	170	< 0.40	0.46	11	< 0.080	7.0	13	7.0	< 0.050	1.7	20	< 0.50	< 0.20	0.11	< 1.0	0.84	18	65
BIFP-16-1-TP	11-Mar-2016	1.0m	**S-CAT-12**	0.60	0.40	7.26	0.69	9.6	370	0.58	0.59	18	< 0.080	9.6	21	11	0.051	2.3	30	0.82	< 0.20	0.19	< 1.0	1.1	30	98
	11-Mar-2016	2.0m	**S-CAT-12**	0.43	0.40	7.10	0.58	7.3	240	< 0.40	0.45	13	< 0.080	7.4	14	7.6	< 0.050	1.8	22	0.52	< 0.20	0.11	< 1.0	0.81	22	72
	11-Mar-2016	3.0m	**S-CAT-12**	0.45	0.46	7.14	0.71	9.6	280	0.45	0.54	15	< 0.080	9.6	17	10	< 0.050	2.5	28	0.64	< 0.20	0.14	< 1.0	1.0	26	91
BIFP-16-2	24-Sep-2016	0.5 - 1.0m	**S-CAT-12**	0.35	0.62	6.82	0.57	13	340	0.49	0.53	16	< 0.080	9.2	19	10	< 0.050	2.1	28	0.63	< 0.20	0.14	< 1.0	0.88	29	93
	24-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.29	0.52	6.78	0.66	9.4	330	0.48	0.59	16	< 0.080	9.8	21	11	< 0.050	2.3	29	0.73	< 0.20	0.16	< 1.0	1.0	26	96
	24-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.53	0.52	6.83	< 0.50	5.4	200	< 0.40	0.36	9.6	< 0.080	6.2	12	6.1	< 0.050	1.3	19	< 0.50	< 0.20	< 0.10	< 1.0	0.85	19	56
BIFP-16-2-TP	12-Mar-2016	1.0m	**S-CAT-12**	0.30	0.46	7.34	0.52	6.6	170	< 0.40	0.46	9.2	< 0.080	7.0	12	6.5	< 0.050	1.7	19	< 0.50	< 0.20	0.11	< 1.0	0.80	16	59
	12-Mar-2016	2.0m	**S-CAT-12**	0.40	0.49	7.28	< 0.50	5.7	100	< 0.40	0.27	7.8	< 0.080	5.6	7.9	5.1	< 0.050	1.7	17	< 0.50	< 0.20	< 0.10	< 1.0	0.81	15	50
	12-Mar-2016	3.0m	**S-CAT-12**	0.60	0.46	7.27	< 0.50	5.6	150	< 0.40	0.35	9.9	< 0.080	6.7	10	6.0	< 0.050	1.5	19	< 0.50	< 0.20	< 0.10	< 1.0	0.81	17	58
BIFP-16-3	24-Sep-2016	0.5 - 1.0m	**S-CAT-12**	0.31	3.8	7.12	0.63	9.7	340	0.51	0.56	16	< 0.080	9.5	20	11	< 0.050	2.2	28	0.66	< 0.20	0.14	< 1.0	0.96	26	94
	24-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.49	6.8	6.71	0.57	8.0	330	0.45	0.54	15	< 0.080	8.9	19	9.8	< 0.050	2.1	26	0.63	< 0.20	0.14	< 1.0	0.99	24	87
	24-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.36	1.8	7.20	< 0.50	6.0	170	< 0.40	0.26	9.3	< 0.080	6.0	7.9	5.8	< 0.050	1.5	16	< 0.50	< 0.20	< 0.10	< 1.0	0.68	18	55
BIFP-16-3-TP	12-Mar-2016	1.0m	**S-CAT-12**	1.1	0.33	7.46	0.58	7.7	280	0.42	0.49	13	< 0.080	7.4	16	8.2	< 0.050	2.0	23	0.60	< 0.20	0.13	< 1.0	0.89	24	76
	12-Mar-2016	2.0m	**S-CAT-12**	1.1	0.32	7.39	0.55	7.7	210	< 0.40	0.47	12	< 0.080	7.5	15	7.8	< 0.050	1.9	23	0.54	< 0.20	0.12	< 1.0	0.81	20	73
	12-Mar-2016	2.5m	**S-CAT-12**	1.1	0.31	7.25	0.77	10	260	0.47	0.65	14	< 0.080	9.9	18	10	< 0.050	2.7	29	0.69	< 0.20	0.17	< 1.0	1.3	26	100

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity			Total Metals																			
				Electrical Conductivity (dS/m)	Sodium Adsorption Ratio (none)	pH (pH units)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Residential/Parkland Fine Surface [#1]				2	5	(6 - 8)	20	12	500	4	10	64	0.4	50	63	140	6.6	10	45	1	20	1	50	23	130	250
CCME Residential/Parkland Fine Sub-Surface [#2]				2	5	(6 - 8)	20	12	500	4	10	64	0.4	50	63	140	6.6	10	45	1	20	1	50	23	130	250
S-CAT-11				2.9	1.04	7.76	1	8.8	353	0.62	0.9	21.5	0.15	9.54	21.8	12.6	0.07	3.2	29.6	0.88	---	0.3	---	1	29.4	108.5
S-CAT-12				2.5	0.64	7.76	1	9.25	368	0.6	0.7	18	0.15	9.4	22.9	11	0.06	2.4	29.9	0.8	---	0.3	---	1	30	99.9
BIFP-16-4	24-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.35	0.38	7.51	0.53	7.1	200	< 0.40	0.48	11	< 0.080	6.9	13	7.4	< 0.050	1.8	21	0.53	< 0.20	0.11	< 1.0	0.88	19	69
	24-Sep-2016	2.5 - 3.0m	**S-CAT-12**	0.31	0.44	7.55	< 0.50	5.6	160	< 0.40	0.41	8.8	< 0.080	5.3	10	6.1	< 0.050	1.5	16	< 0.50	< 0.20	< 0.10	< 1.0	0.79	16	56
	24-Sep-2016	3.5 - 4.0m	**S-CAT-12**	0.45	0.62	7.37	< 0.50	4.6	110	< 0.40	0.23	7.9	< 0.080	4.8	6.2	4.9	< 0.050	1.3	14	< 0.50	< 0.20	< 0.10	< 1.0	0.57	14	43
BIFP-16-4-TP	13-Mar-2016	1.0m	**S-CAT-12**	0.47	0.36	7.42	0.57	7.3	240	< 0.40	0.51	13	< 0.080	7.5	15	8.2	< 0.050	1.8	22	0.53	< 0.20	0.13	< 1.0	0.81	22	77
	13-Mar-2016	2.0m	**S-CAT-12**	1.0	0.32	7.47	0.72	8.6	250	0.41	0.56	14	< 0.080	8.5	16	9.1	< 0.050	2.2	26	0.64	< 0.20	0.13	< 1.0	1.0	26	84
	13-Mar-2016	3.7m	**S-CAT-12**	0.88	0.62	7.33	0.66	8.8	220	< 0.40	0.54	13	< 0.080	8.4	15	8.3	< 0.050	2.2	26	0.58	< 0.20	0.12	< 1.0	1.1	25	85
BIFP-16-5	24-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.49	0.53	7.26	0.59	8.4	310	0.42	0.52	15	< 0.080	7.9	18	9.6	< 0.050	2.1	25	0.67	< 0.20	0.13	< 1.0	0.92	22	82
	24-Sep-2016	2.5 - 3.0m	**S-CAT-12**	0.34	0.47	6.83	< 0.50	7.2	200	< 0.40	0.48	8.8	< 0.080	5.7	11	6.3	< 0.050	1.8	17	< 0.50	< 0.20	< 0.10	< 1.0	0.97	16	58
	24-Sep-2016	3.0 - 3.5m	**S-CAT-12**	0.22	0.49	7.27	< 0.50	5.0	110	< 0.40	0.25	7.3	< 0.080	4.7	6.5	4.7	< 0.050	1.4	14	< 0.50	< 0.20	< 0.10	< 1.0	0.58	14	44
	24-Sep-2016	4.0 - 4.5m	**S-CAT-12**	0.41	0.52	7.28	< 0.50	5.3	140	< 0.40	0.33	8.6	< 0.080	6.6	8.6	5.7	< 0.050	1.6	17	< 0.50	< 0.20	< 0.10	< 1.0	0.80	16	58
BIFP-16-6	25-Sep-2016	1.7 - 2.5m	**S-CAT-12**	0.37	0.46	7.07	0.53	5.2	270	< 0.40	0.50	12	< 0.080	6.5	13	6.7	< 0.050	1.8	20	< 0.50	< 0.20	0.11	< 1.0	0.84	26	65
	25-Sep-2016	5.5 - 6.0m	**S-CAT-12**	0.49	0.59	7.14	< 0.50	5.8	170	< 0.40	0.33	10	< 0.080	6.1	9.0	6.0	< 0.050	1.4	18	< 0.50	< 0.20	< 0.10	< 1.0	0.69	19	58
	25-Sep-2016	7.0 - 7.5m	**S-CAT-12**	0.43	0.50	7.03	< 0.50	5.7	160	< 0.40	0.32	9.7	< 0.080	6.5	9.0	5.8	< 0.050	1.5	18	< 0.50	< 0.20	< 0.10	< 1.0	0.70	20	57
BIFP-16-7	25-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.96	0.48	7.24	0.59	7.8	340	0.45	0.51	15	< 0.080	8.1	24	8.9	< 0.050	1.9	24	0.60	< 0.20	0.14	< 1.0	0.93	26	83
	25-Sep-2016	2.5 - 3.0m	**S-CAT-12**	0.81	0.87	7.41	< 0.50	4.4	110	< 0.40	0.23	8.7	< 0.080	5.6	9.5	4.7	< 0.050	1.2	15	< 0.50	< 0.20	< 0.10	< 1.0	0.62	16	44
	25-Sep-2016	5.5 - 6.0m	**S-CAT-12**	0.95	0.57	7.07	< 0.50	6.2	180	< 0.40	0.39	10	< 0.080	6.5	11	6.3	< 0.050	1.5	18	< 0.50	< 0.20	< 0.10	< 1.0	0.77	20	62
BIFP-16-8	25-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.42	0.37	7.02	0.68	9.3	370	0.61	0.57	18	< 0.080	9.6	23	11	< 0.050	2.2	29	0.72	< 0.20	0.16	< 1.0	1.0	33	94
	25-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.29	0.56	7.07	< 0.50	6.0	260	< 0.40	0.40	12	< 0.080	6.6	14	6.8	< 0.050	1.7	19	< 0.50	< 0.20	0.10	< 1.0	0.86	23	66
	25-Sep-2016	4.0 - 4.5m	**S-CAT-12**	0.79	0.51	6.87	< 0.50	5.7	160	< 0.40	0.34	9.1	< 0.080	5.9	10	5.7	< 0.050	1.4	17	< 0.50	< 0.20	< 0.10	< 1.0	0.70	18	55
BIFP-16-9	25-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.27	0.42	7.08	0.68	9.3	360	0.55	0.53	17	< 0.080	9.2	20	10	< 0.050	2.2	28	0.73	< 0.20	0.17	< 1.0	0.99	31	93
	26-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.28	0.44	6.94	0.53	6.3	220	< 0.40	0.51	12	< 0.080	7.8	15	7.5	0.055	1.7	23	< 0.50	< 0.20	0.11	< 1.0	0.94	21	70
	26-Sep-2016	4.0 - 4.5m	**S-CAT-12**	0.43	0.31	6.74	0.65	7.8	250	0.41	0.63	14	< 0.080	8.4	20	9.3	0.062	2.5	25	0.69	< 0.20	0.14	< 1.0	1.1	24	86
BIFP-16-10	26-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.34	0.42	7.07	0.61	8.4	300	0.46	0.74	14	< 0.080	8.8	21	10	0.067	1.9	27	0.66	< 0.20	0.14	< 1.0	1.0	25	85
	26-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.25	0.47	7.00	< 0.50	6.1	180	< 0.40	0.38	11	< 0.080	6.6	12	6.4	< 0.050	1.8	19	< 0.50	< 0.20	< 0.10	< 1.0	0.91	19	64
	26-Sep-2016	3.0 - 3.5m	**S-CAT-12**	0.28	0.55	6.83	< 0.50	5.2	150	< 0.40	0.26	11	< 0.080	5.4	8.1	5.2	< 0.050	1.5	15	< 0.50	< 0.20	< 0.10	< 1.0	0.68	16	50
BIFP-16-11	26-Sep-2016	0.2 - 0.7m	**S-CAT-11**	0.70	0.33	7.17	0.59	8.4	330	0.50	0.47	15	< 0.080	8.2	20	9.0	< 0.050	1.9	25	0.57	< 0.20	0.14	< 1.0	0.85	29	82
	26-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.70	0.37	6.79	0.55	7.1	220	0.51	0.46	12	< 0.080	7.9	18	8.1	0.052	1.9	23	0.55	< 0.20	0.12	< 1.0	0.90	21	76
	26-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.87	0.59	6.96	< 0.50	6.1	120	< 0.40	0.37	9.5	< 0.080	7.4	11	6.4	< 0.050	2.2	20	< 0.50	< 0.20	< 0.10	< 1.0	0.80	18	61
BIFP-16-12	26-Sep-2016	0.5 - 1.0m	**S-CAT-12**	0.32	0.61	7.34	0.64	9.7	330	0.46	0.54	14	< 0.080	8.4	19	9.3	< 0.050	2.8	26	0.61	< 0.20	0.12	< 1.0	0.92	24	83
	26-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.35	0.36	6.78	0.60	8.1	370	0.46	0.55	15	< 0.080	8.4	22	9.4	< 0.050	2.0	25	0.63	< 0.20	0.15	< 1.0	1.0	28	86
	26-Sep-2016	2.2 - 2.7m	**S-CAT-12**	0.37	0.39	6.83	< 0.50	5.9	180	< 0.40	0.39	9.6	< 0.080	6.8	11	5.9	< 0.050	1.6	18	< 0.50	< 0.20	< 0.10	< 1.0	0.84	19	55
	26-Sep-2016	3.0 - 3.5m	**S-CAT-12**	0.20	0.42	7.02	< 0.50	5.0	120	< 0.40	0.24	8.8	< 0.080	6.0	7.0	4.7	< 0.050	1.3	16	< 0.50	< 0.20	< 0.10	< 1.0	0.61	18	51
BIFP-16-13	01-Oct-2016	1.0 - 1.5m	**S-CAT-12**	0.54	0.45	7.18	0.55	8.2	300	0.44	0.47	15	< 0.080	8.8	18	9.2	0.059	1.9	26	0.63	< 0.20	0.13	< 1.0	0.94	24	82
	01-Oct-2016	2.5 - 3.0m	**S-CAT-12**	0.31	0.46	7.42	< 0.50	5.0	100	< 0.40	0.22	8.1	< 0.080	6.3	7.4	4.8	< 0.050	1.4	16	< 0.50	< 0.20	< 0.10	< 1.0	0.62	15	48
	01-Oct-2016	3.0 - 3.5m	**S-CAT-12**	0.33	0.39	6.77	< 0.50	5.6	120	< 0.40	0.36	9.9	< 0.080	8.4	8.6	5.6	< 0.050	1.6	19	< 0.50	< 0.20	< 0.10	< 1.0	1.0	18	58
BIFP-16-14	01-Oct-2016	1.0 - 1.5m	**S-CAT-12**	1.4	0.34	7.58	0.60	8.1	230	0.41	0.57	13	< 0.080	8.1	17	8.5	0.059	2.1	25	0.64	< 0.20	0.12	< 1.0	1.1	24	79
	01-Oct-2016	2.5 - 3.0m	**S-CAT-12**	1.4	0.36	7.64	0.51	6.9	180	< 0.40	0.40	12	< 0.080	7.6	13	7.3	0.051	1.7	22	< 0.50	< 0.20	< 0.10	< 1.0	0.84	22	70
	01-Oct-2016	3.0 - 4.0m	**S-CAT-12**	1.3	0.39	7.44	< 0.50	4.8	84	< 0.40	0.18	8.3	< 0.080	4.6	6.1	4.5	< 0.050	1.1	14	< 0.50	< 0.20	< 0.10	< 1.0	0.51	15	45

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Table 1
Soil Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Salinity: Electrical Conductivity (dS/m)	Salinity: Sodium Adsorption Ratio (none)	Salinity: pH (pH units)	Total Metals: Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (Total) (mg/kg)	Chromium (hexavalent) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
CCME Residential/Parkland Fine Surface [#1]				**2**	**5**	**(6 - 8)**	**20**	**12**	**500**	**4**	**10**	**64**	**0.4**	**50**	**63**	**140**	**6.6**	**10**	**45**	**1**	**20**	**1**	**50**	**23**	**130**	**250**
CCME Residential/Parkland Fine Sub-Surface [#2]				**2**	**5**	**(6 - 8)**	**20**	**12**	**500**	**4**	**10**	**64**	**0.4**	**50**	**63**	**140**	**6.6**	**10**	**45**	**1**	**20**	**1**	**50**	**23**	**130**	**250**
S-CAT-11				**2.9**	**1.04**	**7.76**	**1**	**8.8**	**353**	**0.62**	**0.9**	**21.5**	**0.15**	**9.54**	**21.8**	**12.6**	**0.07**	**3.2**	**29.6**	**0.88**	**---**	**0.3**	**---**	**1**	**29.4**	**108.5**
S-CAT-12				**2.5**	**0.64**	**7.76**	**1**	**9.25**	**368**	**0.6**	**0.7**	**18**	**0.15**	**9.4**	**22.9**	**11**	**0.06**	**2.4**	**29.9**	**0.8**	**---**	**0.3**	**---**	**1**	**30**	**99.9**
BIFP-16-15	01-Oct-2016	1.0 - 1.5m	**S-CAT-12**	0.35	0.44	7.15	0.56	8.6	310	0.48	0.53	16	< 0.080	9.1	19	9.6	**0.069**	2.0	26	0.63	< 0.20	0.14	< 1.0	0.93	26	88
	01-Oct-2016	2.0 - 2.5m	**S-CAT-12**	0.25	0.51	7.24	< 0.50	6.0	180	< 0.40	0.32	11	< 0.080	6.5	9.8	6.0	< 0.050	1.7	18	< 0.50	< 0.20	< 0.10	< 1.0	0.72	18	59
BIFP-16-16	01-Oct-2016	0.0 - 0.5m	**S-CAT-11**	0.55	0.44	6.77	0.58	**9.0**	340	0.52	0.63	17	< 0.080	9.4	21	10	0.061	2.2	29	0.67	< 0.20	0.16	< 1.0	1.0	28	95
	01-Oct-2016	1.0 - 1.5m	**S-CAT-12**	0.37	0.52	6.78	0.53	8.2	310	0.43	0.52	15	< 0.080	8.3	18	9.0	0.060	1.9	25	0.61	< 0.20	0.14	< 1.0	0.98	24	84
	01-Oct-2016	8.5 - 9.0m	**S-CAT-12**	0.42	**0.78**	7.62	0.65	11	290	**0.71**	0.46	**22**	< 0.080	**12**	**30**	**12**	0.060	2.1	**35**	0.79	< 0.20	0.14	< 1.0	**1.3**	**32**	**100**
BIFP-17-1	25-Sep-2017	1.0 - 1.5m	**S-CAT-12**	0.90	0.38	7.37	0.58	7.6	300	0.44	0.59	14	< 0.080	8.1	17	8.6	---	1.9	24	0.59	< 0.20	0.15	< 1.0	0.90	23	90
	25-Sep-2017	4.5 - 5.0m	**S-CAT-12**	1.7	0.34	7.56	0.52	7.3	220	< 0.40	0.43	12	< 0.080	7.5	15	8.5	---	1.8	22	< 0.50	< 0.20	0.11	< 1.0	0.80	21	73
	25-Sep-2017	5.5 - 6.0m	**S-CAT-12**	0.77	0.42	7.62	< 0.50	6.2	180	< 0.40	0.44	9.9	< 0.080	6.0	11	6.5	---	1.6	18	< 0.50	< 0.20	< 0.10	< 1.0	0.78	17	61
BIFP-17-2	25-Sep-2017	0.5 - 1.0m	**S-CAT-12**	0.38	0.51	7.47	0.62	7.4	290	< 0.40	0.50	13	< 0.080	7.5	16	8.3	---	1.9	23	0.56	< 0.20	0.13	< 1.0	0.92	22	75
BIFP-17-3	25-Sep-2017	1.0 - 1.5m	**S-CAT-12**	**2.9**	0.38	7.49	0.59	7.4	270	0.42	0.52	13	< 0.080	7.4	16	8.2	---	1.9	23	0.61	< 0.20	0.13	< 1.0	0.97	22	77
	25-Sep-2017	4.0 - 4.5m	**S-CAT-12**	1.6	0.31	7.58	0.54	6.9	210	< 0.40	0.50	11	< 0.080	7.1	14	7.5	---	1.9	21	0.53	< 0.20	0.12	< 1.0	0.94	21	71
	25-Sep-2017	5.0 - 5.5m	**S-CAT-12**	0.54	**0.85**	7.70	< 0.50	6.2	170	< 0.40	0.39	11	< 0.080	6.4	9.9	6.1	---	1.7	18	< 0.50	< 0.20	< 0.10	< 1.0	0.82	18	61
BIFP-17-4	25-Sep-2017	1.0 - 1.5m	**S-CAT-12**	0.35	0.49	7.47	0.54	7.6	240	< 0.40	0.48	13	< 0.080	7.9	16	8.4	---	1.8	23	0.56	< 0.20	0.12	< 1.0	0.81	21	74
	25-Sep-2017	2.0 - 2.5m	**S-CAT-12**	0.38	0.62	7.55	< 0.50	5.3	140	< 0.40	0.36	8.9	< 0.080	5.8	10	5.7	---	1.4	17	< 0.50	< 0.20	< 0.10	< 1.0	0.66	16	58
BIFP-17-5	25-Sep-2017	0.5 - 1.0m	**S-CAT-12**	0.37	0.53	7.64	0.54	7.4	300	0.43	0.48	14	< 0.080	7.9	17	8.5	---	1.8	24	0.54	< 0.20	0.13	< 1.0	0.83	23	76
	25-Sep-2017	1.5 - 2.0m	**S-CAT-12**	0.39	0.45	7.45	0.62	8.3	300	0.44	0.56	14	< 0.080	8.5	18	9.3	---	2.0	25	0.58	< 0.20	0.13	< 1.0	0.89	23	83
BIFP-17-6	25-Sep-2017	0.5 - 1.0m	**S-CAT-12**	0.42	0.44	7.61	0.54	7.4	280	0.40	0.54	13	< 0.080	7.8	17	8.6	---	1.8	23	0.54	< 0.20	0.13	< 1.0	0.83	21	80
	25-Sep-2017	2.5 - 3.0m	**S-CAT-12**	0.27	0.47	7.61	< 0.50	6.0	160	< 0.40	0.33	9.0	< 0.080	6.1	9.4	5.9	---	1.5	17	< 0.50	< 0.20	< 0.10	< 1.0	0.75	16	56
BIFP-17-7	26-Sep-2017	0.5 - 1.0m	**S-CAT-12**	0.39	0.45	7.52	0.56	8.1	300	0.43	0.46	13	< 0.080	8.2	18	9.0	---	1.9	24	0.59	< 0.20	0.13	< 1.0	0.85	22	80
	26-Sep-2017	1.5 - 2.0m	**S-CAT-12**	0.33	0.51	7.48	< 0.50	5.8	170	< 0.40	0.37	9.7	< 0.080	6.2	11	6.3	---	1.5	18	< 0.50	< 0.20	< 0.10	< 1.0	0.68	17	56
BIFP-17-8	26-Sep-2017	0.5 - 1.0m	**S-CAT-12**	0.49	0.40	7.46	0.63	7.9	290	0.44	0.51	14	< 0.080	8.3	18	9.6	---	1.9	25	0.62	< 0.20	0.14	< 1.0	0.90	23	82
	26-Sep-2017	1.0 - 1.5m	**S-CAT-12**	0.46	0.47	7.50	< 0.50	7.1	230	0.40	0.43	13	< 0.080	7.7	15	8.2	---	1.7	23	0.53	< 0.20	0.13	< 1.0	0.80	21	73
BIFP-17-9	26-Sep-2017	0.5 - 1.0m	**S-CAT-12**	0.80	0.36	7.39	0.67	8.5	350	0.51	0.66	15	< 0.080	9.3	20	10	---	1.5	28	0.75	< 0.20	0.15	< 1.0	0.99	25	91
	26-Sep-2017	1.5 - 2.0m	**S-CAT-12**	0.47	0.50	7.49	0.63	7.8	320	0.44	0.61	14	< 0.080	8.3	18	9.0	---	2.1	25	0.62	< 0.20	0.14	< 1.0	0.95	23	85
(Duplicate)	26-Sep-2017	1.5 - 2.0m	**S-CAT-12**	0.47	0.41	7.47	0.64	8.3	300	0.44	0.56	14	< 0.080	8.2	18	9.1	---	2.1	25	0.60	< 0.20	0.14	< 1.0	0.90	23	83

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Surface soils, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Sub-Surface soils, 1999 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Surface soils, 1999 and updates)
(CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Sub-Surface soils, 1999 and updates)

6. Background 95th Percentile Statistical Category:
S-CAT-11: Islands - Mineral Surface Soil - 95th Percentile Background
S-CAT-12: Islands - Mineral Subsurface Soil - 95th Percentile Background

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									PAH															
				Benzene	Toluene	Ethylbenzene	Xylenes (Total)	PHC F1 (C_6-C_{10}) - BTE	PHC F2 (C_{10}-C_{16})	PHC F3 (C_{16}-C_{34})	PHC F4 (C_{34}-C_{50})	PHC F4 (C_{34}-C_{50})-Gra	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)Anthracene	Benzo(a)Pyrene	Benzo(a)Pyrene Total	Benzo(a)Pyrene Total	Benzo(k)Fluoranthene	Chrysene	Dibenzo(a,h)Anthrace	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyre	Calculate CCME IACR	Naphthalene	Phenanthrene	Pyrene
	(dd-mmm-yyyy)			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(none)	(mg/kg)	(mg/kg)	(mg/kg)
CCME Residential/Parkland Fine Surface				60	110	120	65	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Residential/Parkland Fine Sub-Surface				120	220	240	130	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Canada Wide Standards Surface				---	---	---	---	210	150	1300	5600	5600	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME Canada Wide Standards Sub-Surface				---	---	---	---	800	1000	3500	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-11				0.0182	0.0656	0.047	0.34	29.2	43.8	274	90	---	0.005	0.005	0.004	0.008	0.008	---	---	---	0.0176	0.007	0.012	0.01	0.011	---	0.0395	0.0379	0.0192
S-CAT-12				0.005	0.02	0.01	0.04	15.5	27	207	86	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.034	0.005	0.008	0.005	0.0064	---	0.025	0.059	0.0164
TP11-6	10-Aug-2011	2.0 - 2.5m	**S-CAT-12**	1.1	< 0.020	0.030	< 0.040	28	290	920	460	2000	0.013	0.012	0.010	< 0.0050	< 0.0050	< 0.1	0.0072	< 0.0050	0.035	< 0.0050	0.016	0.056	< 0.0050	0.12	0.073	0.095	0.031
BIFP-12-1	24-Jul-2012	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	0.019	< 0.040	< 12	1100	21000	35000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jul-2012	2.0 - 2.5m	**S-CAT-12**	1.0	< 0.030	5.4	9.3	710	4000	8600	15000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jul-2012	4.0 - 4.5m	**S-CAT-12**	0.059	< 0.020	0.020	< 0.040	< 12	< 10	30	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-12-2	24-Jul-2012	1.0 - 1.5m	**S-CAT-12**	0.034	< 0.020	0.029	0.077	< 12	68	660	420	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jul-2012	2.0 - 2.5m	**S-CAT-12**	3.5	< 0.020	< 0.010	< 0.040	< 12	< 10	30	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jul-2012	3.0 - 3.5m	**S-CAT-12**	2.4	< 0.020	0.017	< 0.040	< 12	< 10	17	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-12-3	25-Jul-2012	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	19	65	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Jul-2012	2.5 - 3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	23	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-12-4	24-Jul-2012	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	18	270	180	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jul-2012	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	20	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-12-5	25-Jul-2012	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	65	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Jul-2012	1.5 - 2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	36	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Jul-2012	3.5 - 4.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	13	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-12-6	25-Jul-2012	0.7 - 1.2m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	32	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Jul-2012	2.5 - 3.0m	**S-CAT-12**	0.075	< 0.020	< 0.010	< 0.040	< 12	20	55	< 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-14-1	02-Mar-2014	2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0072	< 0.0050	0.0077	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.12	0.0084	0.016	0.0076
BIFP-14-2	02-Mar-2014	2.0m	**S-CAT-12**	0.012	< 0.020	< 0.010	< 0.040	< 12	60	260	110	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0075	< 0.0050	0.0092	< 0.0050	< 0.0050	< 0.0050	0.0057	0.12	0.018	0.022	0.0092
BIFP-14-3	02-Mar-2014	2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	15	97	< 50	---	< 0.0050	< 0.0050	< 0.0040	0.0058	0.0058	< 0.10	0.015	< 0.0050	0.016	0.0052	0.0095	< 0.0050	0.0063	0.24	0.015	0.034	0.019
BIFP-14-4	02-Mar-2014	2.5m	**S-CAT-12**	0.59	< 0.020	< 0.010	0.21	< 12	120	410	190	---	0.0053	0.010	< 0.0040	< 0.0060	< 0.0050	< 0.10	0.0076	< 0.0050	0.020	< 0.0050	0.0076	0.042	< 0.0050	0.14	0.14	0.11	0.024
BIFP-14-5	02-Mar-2014	2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0072	< 0.0050	0.0085	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.12	0.0079	0.017	0.0081
BIFP-14-6	02-Mar-2014	2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	38	460	210	---	< 0.0050	< 0.0050	< 0.0040	0.0052	0.0069	< 0.10	0.017	< 0.0050	0.015	0.0052	0.011	0.0054	0.0072	0.24	0.014	0.033	0.025
(Duplicate)	02-Mar-2014	2.0m	**S-CAT-12**	0.017	< 0.020	< 0.010	< 0.040	< 12	76	570	290	---	0.0068	0.0060	< 0.0040	0.010	0.011	< 0.10	0.026	< 0.0050	0.024	0.0089	0.016	0.0098	0.012	0.32	0.021	0.042	0.047
BIFP-14-7	02-Mar-2014	2.0m	**S-CAT-12**	0.057	< 0.020	< 0.010	< 0.040	< 12	30	280	180	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0064	< 0.0050	0.0054	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.082	< 0.0050	0.0088	< 0.0050
BIFP-14-15	07-Mar-2014	2.0m	**S-CAT-12**	0.41	< 0.020	< 0.010	< 0.040	15	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0058	< 0.0050
BIFP-14-16	07-Mar-2014	2.5m	**S-CAT-12**	1.0	< 0.020	0.74	0.56	20	30	56	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	0.11	0.011	< 0.0050
BIFP-14-17	09-Mar-2014	2.5m	**S-CAT-12**	0.76	< 0.020	< 0.010	0.38	< 12	29	110	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	0.011	0.010	< 0.0050
BIFP-14-18	09-Mar-2014	2.0m	**S-CAT-12**	1.3	< 0.020	0.028	0.098	< 12	37	450	280	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0076	< 0.0050	0.0094	< 0.0050	0.0065	0.0094	0.0063	0.12	0.030	0.036	0.015
BIFP-14-19	09-Mar-2014	2.0m	**S-CAT-12**	0.61	< 0.020	< 0.010	< 0.040	< 12	47	640	300	---	< 0.0050	0.0074	< 0.0040	0.0050	0.0050	< 0.10	0.010	< 0.0050	0.018	< 0.0050	0.0085	0.019	0.0057	0.13	0.045	0.083	0.019
(Duplicate)	09-Mar-2014	2.0m	**S-CAT-12**	0.60	< 0.020	< 0.010	0.35	< 12	12	120	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-14-25	15-Mar-2014	4.0m	**S-CAT-12**	0.15	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0067	< 0.0050	0.0055	< 0.0050	< 0.0050	0.0051	< 0.0050	0.097	0.016	0.018	0.0069

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									PAH																
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTE (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50})-Gra (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total (mg/kg)	Benzo(a)Pyrene Total (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)Anthrace (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyre (mg/kg)	Calculate CCME IACR (none)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME Residential/Parkland Fine Surface				60	110	120	65	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Residential/Parkland Fine Sub-Surface				120	220	240	130	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Canada Wide Standards Surface				---	---	---	---	210	150	1300	5600	5600	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME Canada Wide Standards Sub-Surface				---	---	---	---	800	1000	3500	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-11				0.0182	0.0656	0.047	0.34	29.2	43.8	274	90	---	0.005	0.005	0.004	0.008	0.008	---	---	---	0.0176	0.007	0.012	0.01	0.011	---	0.0395	0.0379	0.0192
S-CAT-12				0.005	0.02	0.01	0.04	15.5	27	207	86	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.034	0.005	0.008	0.005	0.0064	---	0.025	0.059	0.0164
BIFP-14-26	18-Mar-2014	4.0m	**S-CAT-12**	0.88	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0064	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.078	0.0050	0.0087	< 0.0050
(Duplicate)	18-Mar-2014	4.0m	**S-CAT-12**	0.93	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-14-29	18-Mar-2014	2.0m	**S-CAT-12**	0.57	< 0.020	< 0.010	< 0.040	< 12	39	470	270	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0055	< 0.10	0.011	< 0.0050	0.012	< 0.0050	0.0071	0.0056	0.0076	0.15	0.016	0.028	0.023
BIFP-14-33	19-Mar-2014	2.0m	**S-CAT-12**	1.7	< 0.020	< 0.010	< 0.040	< 12	20	140	69	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0071	< 0.0050	0.0073	< 0.0050	0.0052	< 0.0050	< 0.0050	0.12	0.0054	0.015	0.011
BIFP-14-38	29-Mar-2014	2.0m	**S-CAT-12**	0.14	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0075	< 0.0050
BIFP-14-39	29-Mar-2014	3.0m	**S-CAT-12**	2.8	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0075	< 0.0050
BIFP-14-40	29-Mar-2014	2.0m	**S-CAT-12**	1.2	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0070	< 0.0050	0.0057	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.11	0.0053	0.013	0.0083
BIFP-14-41	02-Apr-2014	2.0m	**S-CAT-12**	4.4	< 0.030	16	29	920	9400	29000	14000	---	0.69	< 0.53	< 0.32	< 0.24	0.15	0.25	0.25	< 0.0050	0.91	< 0.11	0.23	2.5	0.050	2.8	12	6.5	1.0
BIFP-14-42	02-Apr-2014	2.0m	**S-CAT-12**	2.6	< 0.020	16	22	1100	9100	17000	6000	---	0.16	< 0.18	< 0.10	< 0.066	0.021	< 0.10	0.034	< 0.0050	0.14	< 0.0050	0.079	0.74	< 0.0050	0.55	1.4	1.5	0.27
(Duplicate)	02-Apr-2014	2.0m	**S-CAT-12**	4.4	< 0.050	26	42	830	12000	26000	9300	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-14-43	02-Apr-2014	2.0m	**S-CAT-12**	0.52	< 0.020	2.1	2.2	140	950	1900	650	2200	0.083	< 0.057	< 0.021	< 0.017	0.0083	< 0.10	0.015	< 0.0050	0.060	< 0.0050	0.020	0.24	< 0.0050	0.22	1.2	0.52	0.072
BIFP-14-44	02-Apr-2014	2.0m	**S-CAT-12**	3.0	< 0.020	0.022	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0071	< 0.0050	0.0070	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.12	0.0084	0.020	0.0080
BIFP-14-45	02-Apr-2014	2.0m	**S-CAT-12**	2.8	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0071	< 0.0050	0.0065	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.12	0.0057	0.017	0.0079
BIFP-14-46	02-Apr-2014	2.0m	**S-CAT-12**	4.0	< 0.020	< 0.010	< 0.040	< 12	26	210	110	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0071	< 0.0050	0.0064	< 0.0050	< 0.0050	0.0065	< 0.0050	0.12	0.0077	0.020	0.0094
BIFP-14-47	02-Apr-2014	2.0m	**S-CAT-12**	0.50	< 0.020	0.10	0.22	< 12	15	270	170	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0070	< 0.0050	0.0059	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.11	0.015	0.016	0.0085
BIFP-14-48	02-Apr-2014	2.0m	**S-CAT-12**	4.9	< 0.020	7.6	8.8	290	4500	14000	6000	---	0.48	< 0.43	0.30	< 0.30	0.13	0.23	0.24	< 0.0050	0.81	< 0.12	0.17	2.0	0.042	2.6	8.1	5.2	0.80
BIFP-14-49	02-Apr-2014	2.5m	**S-CAT-12**	0.29	< 0.020	< 0.010	0.84	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.010	< 0.0050
BIFP-14-50	02-Apr-2014	2.5m	**S-CAT-12**	2.2	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.013	< 0.0050
BIFP-14-TP1	05-Apr-2014	0.0 - 1.0m	**S-CAT-12**	0.017	< 0.020	< 0.010	< 0.040	< 12	6700	19000	7900	---	< 0.050	< 0.060	< 0.040	0.071	0.11	0.19	0.19	< 0.050	0.34	0.050	0.13	< 0.050	< 0.050	2.1	< 0.050	< 0.19	0.73
	05-Apr-2014	1.0 - 2.0m	**S-CAT-12**	18	< 0.020	< 0.010	26	1200	4800	11000	3600	---	< 0.37	< 0.35	< 0.040	< 0.17	< 0.050	< 0.10	0.078	< 0.050	0.31	< 0.050	0.14	1.7	< 0.050	1.4	8.0	4.1	0.44
	05-Apr-2014	2.0 - 2.5m	**S-CAT-12**	33	< 0.020	6.0	62	1300	5800	11000	3600	---	0.16	< 0.24	< 0.16	< 0.069	0.014	< 0.10	0.039	< 0.0050	0.33	< 0.022	0.11	1.1	< 0.022	0.71	5.0	2.8	< 0.36
BIFP-14-TP2	05-Apr-2014	0.0 - 1.0m	**S-CAT-12**	2.1	< 0.020	0.035	0.15	< 12	32	1100	880	3300	< 0.0050	< 0.0050	< 0.0040	0.0053	0.0063	< 0.10	0.014	< 0.0050	0.017	< 0.0050	0.0090	0.0064	0.012	0.21	0.037	0.043	0.025
	05-Apr-2014	1.0 - 2.0m	**S-CAT-12**	2.6	0.050	4.4	21	370	910	1300	370	---	< 0.042	< 0.045	< 0.0040	0.012	< 0.0050	< 0.10	0.0082	< 0.0050	0.041	< 0.0050	0.012	0.25	< 0.0050	0.15	1.6	0.55	0.028
	05-Apr-2014	2.0 - 3.0m	**S-CAT-12**	9.5	0.67	9.9	54	1200	2200	3100	900	---	0.042	< 0.070	< 0.0042	0.018	< 0.0050	< 0.10	0.0098	< 0.0050	0.058	< 0.0050	0.017	0.31	0.0069	0.21	2.1	0.69	0.049
(Duplicate)	05-Apr-2014	2.0 - 3.0m	**S-CAT-12**	4.9	0.11	2.1	16	360	840	1200	350	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-14-TP3	05-Apr-2014	0.0 - 1.0m	**S-CAT-12**	0.050	< 0.020	< 0.010	< 0.040	< 12	48	610	300	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0085	< 0.0050	0.0092	< 0.0050	0.0065	< 0.0050	0.0093	0.16	0.021	0.030	0.015
	05-Apr-2014	1.0 - 2.0m	**S-CAT-12**	17	39	18	74	1900	2600	3600	950	---	0.077	< 0.18	< 0.0040	< 0.026	< 0.0050	< 0.10	0.012	< 0.0050	0.14	< 0.0050	0.018	0.73	0.015	0.32	5.0	1.7	0.18
	05-Apr-2014	2.0 - 3.0m	**S-CAT-12**	25	52	23	96	1700	3900	5400	1500	---	0.070	< 0.13	< 0.024	< 0.017	< 0.0050	< 0.10	0.0082	< 0.0050	0.074	< 0.0050	0.027	0.60	< 0.0050	0.15	4.2	1.2	0.086

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									PAH																
				Benzene	Toluene	Ethylbenzene	Xylenes (Total)	PHC F1 (C_6-C_{10}) - BTE	PHC F2 (C_{10}-C_{16})	PHC F3 (C_{16}-C_{34})	PHC F4 (C_{34}-C_{50})	PHC F4 (C_{34}-C_{50})-Gra	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)Anthracene	Benzo(a)Pyrene	Benzo(a)Pyrene Total	Benzo(a)Pyrene Total	Benzo(k)Fluoranthene	Chrysene	Dibenzo(a,h)Anthrace	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyre	Calculate CCME IACR	Naphthalene	Phenanthrene	Pyrene
	(dd-mmm-yyyy)			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(none)	(mg/kg)	(mg/kg)	(mg/kg)
CCME Residential/Parkland Fine Surface				60	110	120	65	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Residential/Parkland Fine Sub-Surface				120	220	240	130	---	---	---	---	---	0.28	320	2.5	1	0.6	5.3	5.3	1	6.2	1	15.4	0.25	1	1	0.013	0.046	7.7
CCME Canada Wide Standards Surface				---	---	---	---	210	150	1300	5600	5600	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME Canada Wide Standards Sub-Surface				---	---	---	---	800	1000	3500	10000	10000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-11				0.0182	0.0656	0.047	0.34	29.2	43.8	274	90	---	0.005	0.005	0.004	0.008	0.008	---	---	---	0.0176	0.007	0.012	0.01	0.011	---	0.0395	0.0379	0.0192
S-CAT-12				0.005	0.02	0.01	0.04	15.5	27	207	86	---	0.005	0.005	0.004	0.005	0.005	---	---	---	0.034	0.005	0.008	0.005	0.0064	---	0.025	0.059	0.0164
BIFP-14-TP4	05-Apr-2014	0.0 - 1.0m	**S-CAT-12**	0.054	0.031	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0068	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.10	0.0056	0.012	0.0065
	05-Apr-2014	1.0 - 2.0m	**S-CAT-12**	0.050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0063	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.075	< 0.0050	0.016	0.0060
	05-Apr-2014	2.0 - 3.0m	**S-CAT-12**	0.55	< 0.020	< 0.010	< 0.040	< 12	< 10	50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0053	< 0.10	0.0094	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.098	0.0055	0.013	0.0068
(Duplicate)	05-Apr-2014	2.0 - 3.0m	**S-CAT-12**	0.57	< 0.020	0.020	< 0.040	< 12	< 10	57	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-14-TP5	10-Apr-2014	0.0 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0081	< 0.0050	0.010	< 0.0050	0.0060	< 0.0050	0.0060	0.15	0.010	0.024	0.011
	10-Apr-2014	1.0 - 2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0064	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.080	< 0.0050	0.0097	< 0.0050
	10-Apr-2014	2.0 - 2.6m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0076	< 0.0050
BIFP-14-TP6	11-Apr-2014	0.0 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0072	< 0.0050	0.0082	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.12	0.0092	0.019	0.0091
	11-Apr-2014	1.0 - 2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0072	< 0.0050
	11-Apr-2014	2.0 - 3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0084	< 0.0050
(Duplicate)	11-Apr-2014	2.0 - 3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-16-1	24-Sep-2016	0.5 - 1.0m	**S-CAT-12**	0.15	< 0.020	0.019	< 0.040	20	< 10	71	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0063	< 0.10	0.012	< 0.0050	0.0080	< 0.0050	0.0081	< 0.0050	0.0076	0.17	0.011	0.025	0.015
	24-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.22	< 0.020	0.13	2.1	110	170	290	75	---	0.0089	0.0095	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0079	< 0.0050	0.0093	< 0.0050	0.0085	0.044	0.0058	0.14	0.52	0.093	0.020
	24-Sep-2016	2.5 - 3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0068	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.10	0.0077	0.015	0.0088
BIFP-16-1-TP	11-Mar-2016	1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	480	350	---	< 0.0050	0.0059	< 0.0040	< 0.0050	0.0074	< 0.10	0.017	< 0.0050	0.012	0.0051	0.0071	0.0053	0.014	0.20	0.0068	0.024	0.015
	11-Mar-2016	2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0067	< 0.0050	0.0055	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.096	< 0.0050	0.010	0.0061
	11-Mar-2016	3.0m	**S-CAT-12**	0.0085	< 0.020	0.025	< 0.040	< 12	< 10	140	93	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0065	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.083	0.0063	0.0076	0.0051
BIFP-16-2	24-Sep-2016	0.5 - 1.0m	**S-CAT-12**	< 0.0050	0.056	0.028	0.098	< 12	86	1500	970	4800	< 0.0050	0.021	0.0058	0.011	0.018	< 0.10	0.040	< 0.0050	0.016	0.012	0.023	0.0085	0.035	0.43	0.051	0.063	0.089
	24-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	52	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0062	< 0.10	0.012	< 0.0050	0.0084	< 0.0050	0.0086	< 0.0050	0.0072	0.17	0.013	0.027	0.016
	24-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0067	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.093	< 0.0050	0.013	0.0076
BIFP-16-2-TP	12-Mar-2016	1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.060	< 0.0050	0.0060	< 0.0050
	12-Mar-2016	2.0m	**S-CAT-12**	0.0095	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0064	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.078	< 0.0050	0.0076	< 0.0050
	12-Mar-2016	3.0m	**S-CAT-12**	0.032	< 0.020	0.057	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0064	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.076	< 0.0050	0.0065	< 0.0050
(Duplicate)	12-Mar-2016	3.0m	**S-CAT-12**	0.041	< 0.020	0.072	< 0.040	< 12	< 10	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-16-3	24-Sep-2016	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	96	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0068	< 0.10	0.013	< 0.0050	0.0094	< 0.0050	0.0093	0.0058	0.010	0.19	0.011	0.027	0.019
	24-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	110	55	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0058	< 0.10	0.012	< 0.0050	0.0083	< 0.0050	0.0084	< 0.0050	0.0093	0.17	0.011	0.027	0.017
(Duplicate)	24-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.010	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0064	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.012	< 0.0050	0.076	< 0.0050	0.011	< 0.0050
BIFP-16-3-TP	12-Mar-2016	1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0066	< 0.0050	< 0.0050	< 0.0050	0.0073	< 0.0050	< 0.0050	0.090	< 0.0050	0.0088	0.0085
	12-Mar-2016	2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0068	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.098	< 0.0050	0.010	0.0066
	12-Mar-2016	2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0067	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.093	< 0.0050	0.0098	0.0062

Advisian
WorleyParsons Group

Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									PAH																
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTE (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50})-Gra (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total (mg/kg)	Benzo(a)Pyrene Total (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)Anthrace (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyre (mg/kg)	Calculate CCME IACR (none)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME Residential/Parkland Fine Surface				**60**	**110**	**120**	**65**	**---**	**---**	**---**	**---**	**---**	**0.28**	**320**	**2.5**	**1**	**0.6**	**5.3**	**5.3**	**1**	**6.2**	**1**	**15.4**	**0.25**	**1**	**1**	**0.013**	**0.046**	**7.7**
CCME Residential/Parkland Fine Sub-Surface				**120**	**220**	**240**	**130**	**---**	**---**	**---**	**---**	**---**	**0.28**	**320**	**2.5**	**1**	**0.6**	**5.3**	**5.3**	**1**	**6.2**	**1**	**15.4**	**0.25**	**1**	**1**	**0.013**	**0.046**	**7.7**
CCME Canada Wide Standards Surface				---	---	---	---	**210**	**150**	**1300**	**5600**	**5600**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME Canada Wide Standards Sub-Surface				---	---	---	---	**800**	**1000**	**3500**	**10000**	**10000**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-11				**0.0182**	**0.0656**	**0.047**	**0.34**	**29.2**	**43.8**	**274**	**90**	**---**	**0.005**	**0.005**	**0.004**	**0.008**	**0.008**	**---**	**---**	**---**	**0.0176**	**0.007**	**0.012**	**0.01**	**0.011**	**---**	**0.0395**	**0.0379**	**0.0192**
S-CAT-12				**0.005**	**0.02**	**0.01**	**0.04**	**15.5**	**27**	**207**	**86**	**---**	**0.005**	**0.005**	**0.004**	**0.005**	**0.005**	**---**	**---**	**---**	**0.034**	**0.005**	**0.008**	**0.005**	**0.0064**	**---**	**0.025**	**0.059**	**0.0164**
BIFP-16-4	24-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0066	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.089	0.0057	0.011	0.0058
	24-Sep-2016	2.5 - 3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0064	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.080	< 0.0050	0.011	0.0058
	24-Sep-2016	3.5 - 4.0m	**S-CAT-12**	0.17	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	< 0.0050	< 0.0050
BIFP-16-4-TP	13-Mar-2016	1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0071	< 0.0050	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.12	0.0072	0.016	0.0081
	13-Mar-2016	2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0067	< 0.0050	0.0053	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.097	< 0.0050	0.010	0.0055
(Duplicate)	13-Mar-2016	2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	13-Mar-2016	3.7m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0064	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.079	< 0.0050	0.0089	< 0.0050
BIFP-16-5	24-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	51	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0072	< 0.0050	0.0058	< 0.0050	0.0060	< 0.0050	< 0.0050	0.12	0.011	0.021	0.011
	24-Sep-2016	2.5 - 3.0m	**S-CAT-12**	0.75	< 0.020	0.048	0.14	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0083	< 0.0050
	24-Sep-2016	3.0 - 3.5m	**S-CAT-12**	2.8	< 0.020	0.40	0.88	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	0.0095	0.0075	< 0.0050
	24-Sep-2016	4.0 - 4.5m	**S-CAT-12**	0.24	< 0.020	0.019	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0071	< 0.0050
BIFP-16-6	25-Sep-2016	1.7 - 2.5m	**S-CAT-12**	0.72	< 0.020	22	19	1800	6100	13000	4900	21000	0.26	0.45	0.18	0.092	0.058	0.12	0.12	0.082	0.36	0.033	0.14	1.8	0.021	1.8	8.1	4.5	0.56
(Duplicate)	25-Sep-2016	1.7 - 2.5m	**S-CAT-12**	1.0	< 0.020	22	20	2900	8500	17000	6200	33000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Sep-2016	5.5 - 6.0m	**S-CAT-12**	0.024	< 0.020	0.034	< 0.040	< 12	13	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0055	< 0.0050	0.059	0.015	0.015	0.0055
	25-Sep-2016	7.0 - 7.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	17	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	0.016	0.014	< 0.0050
BIFP-16-7	25-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0078	< 0.0050	0.0063	< 0.0050	0.0062	< 0.0050	0.0064	0.14	0.011	0.021	0.012
	25-Sep-2016	2.5 - 3.0m	**S-CAT-12**	0.20	< 0.020	0.26	0.070	< 12	12	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	0.15	< 0.0050	< 0.0050
	25-Sep-2016	5.5 - 6.0m	**S-CAT-12**	0.013	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0065	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.082	0.0055	0.011	0.0060
BIFP-16-8	25-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	94	< 50	---	< 0.0050	< 0.0050	< 0.0040	0.0053	0.0081	< 0.10	0.015	< 0.0050	0.011	< 0.0050	0.011	0.0072	0.010	0.22	0.017	0.033	0.020
	25-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0067	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.093	0.0050	0.012	0.0072
	25-Sep-2016	4.0 - 4.5m	**S-CAT-12**	0.011	< 0.020	0.022	0.081	< 12	11	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0064	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.081	0.025	0.011	0.0060
BIFP-16-9	25-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	55	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0060	< 0.10	0.012	< 0.0050	0.0085	< 0.0050	0.0085	< 0.0050	0.0076	0.17	0.013	0.028	0.016
	26-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0065	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.083	< 0.0050	0.010	0.0060
	26-Sep-2016	4.0 - 4.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	0.57	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0071	< 0.0050	0.0065	< 0.0050	0.0061	< 0.0050	< 0.0050	0.12	0.0091	0.022	0.011
BIFP-16-10	26-Sep-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	63	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0053	< 0.10	0.011	< 0.0050	0.0082	< 0.0050	0.0061	< 0.0050	0.0057	0.16	0.018	0.032	0.011
	26-Sep-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0083	< 0.0050
	26-Sep-2016	3.0 - 3.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0064	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.080	0.0052	0.012	0.0063
BIFP-16-11	26-Sep-2016	0.2 - 0.7m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	16	260	290	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0052	< 0.10	0.011	< 0.0050	0.0071	< 0.0050	0.0076	0.0060	0.0083	0.15	0.012	0.022	0.016
	26-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.27	< 0.020	0.016	< 0.040	< 12	15	61	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0065	< 0.10	0.012	< 0.0050	0.0091	< 0.0050	0.0088	< 0.0050	0.0066	0.18	0.012	0.030	0.016
(Duplicate)	26-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.19	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Sep-2016	2.0 - 2.5m	**S-CAT-12**	0.023	< 0.020	0.017	< 0.040	25	1400	6800	3000	13000	0.080	0.068	< 0.0040	0.066	0.036	< 0.10	0.072	< 0.0050	0.20	0.018	< 0.0050	0.44	0.022	0.91	0.075	1.5	< 0.0050

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									PAH																
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTE (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50})-Gra (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total (mg/kg)	Benzo(a)Pyrene Total (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)Anthrace (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyre (mg/kg)	Calculate CCME IACR (none)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME Residential/Parkland Fine Surface				**60**	**110**	**120**	**65**	**---**	**---**	**---**	**---**	**---**	**0.28**	**320**	**2.5**	**1**	**0.6**	**5.3**	**5.3**	**1**	**6.2**	**1**	**15.4**	**0.25**	**1**	**1**	**0.013**	**0.046**	**7.7**
CCME Residential/Parkland Fine Sub-Surface				**120**	**220**	**240**	**130**	**---**	**---**	**---**	**---**	**---**	**0.28**	**320**	**2.5**	**1**	**0.6**	**5.3**	**5.3**	**1**	**6.2**	**1**	**15.4**	**0.25**	**1**	**1**	**0.013**	**0.046**	**7.7**
CCME Canada Wide Standards Surface				---	---	---	---	**210**	**150**	**1300**	**5600**	**5600**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME Canada Wide Standards Sub-Surface				---	---	---	---	**800**	**1000**	**3500**	**10000**	**10000**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-11				**0.0182**	**0.0656**	**0.047**	**0.34**	**29.2**	**43.8**	**274**	**90**	**---**	**0.005**	**0.005**	**0.004**	**0.008**	**0.008**	**---**	**---**	**---**	**0.0176**	**0.007**	**0.012**	**0.01**	**0.011**	**---**	**0.0395**	**0.0379**	**0.0192**
S-CAT-12				**0.005**	**0.02**	**0.01**	**0.04**	**15.5**	**27**	**207**	**86**	**---**	**0.005**	**0.005**	**0.004**	**0.005**	**0.005**	**---**	**---**	**---**	**0.034**	**0.005**	**0.008**	**0.005**	**0.0064**	**---**	**0.025**	**0.059**	**0.0164**
BIFP-16-12	26-Sep-2016	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	170	130	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0076	< 0.0050	0.0078	< 0.0050	0.0066	< 0.0050	0.0054	0.13	0.013	0.024	0.012
	26-Sep-2016	1.0 - 1.5m	**S-CAT-12**	0.084	< 0.020	0.072	< 0.040	93	10	51	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0062	< 0.10	0.012	< 0.0050	0.0091	< 0.0050	0.0091	0.0053	0.0082	0.19	0.014	0.031	0.017
	26-Sep-2016	2.2 - 2.7m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0071	< 0.0050
	26-Sep-2016	3.0 - 3.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0062	< 0.0050
BIFP-16-13	01-Oct-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	0.0060	< 0.10	0.012	< 0.0050	0.010	< 0.0050	0.0092	< 0.0050	0.0051	0.17	0.021	0.035	0.017
	01-Oct-2016	2.5 - 3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0060	< 0.0050
	01-Oct-2016	3.0 - 3.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0067	< 0.0050	< 0.0050	< 0.0050	0.0075	< 0.0050	< 0.0050	0.098	0.019	0.019	0.012
BIFP-16-14	01-Oct-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0068	< 0.0050	0.0055	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.10	0.0099	0.016	0.0081
	01-Oct-2016	2.5 - 3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0066	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.090	0.0087	0.017	0.0086
	01-Oct-2016	3.0 - 4.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	< 0.0050	< 0.0050
BIFP-16-15	01-Oct-2016	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	54	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0077	< 0.0050	0.0075	< 0.0050	0.0077	< 0.0050	0.0050	0.14	0.014	0.025	0.014
	01-Oct-2016	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0082	< 0.0050
BIFP-16-16	01-Oct-2016	0.0 - 0.5m	**S-CAT-11**	1.5	< 0.020	4.1	4.1	710	2900	4900	1700	8000	0.082	0.11	0.032	0.035	0.11	0.13	0.12	< 0.0050	0.10	< 0.0050	0.018	0.43	0.013	0.74	1.9	0.93	0.047
	01-Oct-2016	1.0 - 1.5m	**S-CAT-12**	1.6	< 0.020	0.28	1.7	100	170	260	78	---	0.0080	0.011	< 0.0040	0.0059	< 0.0050	< 0.10	0.0083	< 0.0050	0.011	< 0.0050	0.0092	0.053	0.0051	0.16	0.38	0.12	0.021
(Duplicate)	01-Oct-2016	1.0 - 1.5m	**S-CAT-12**	1.5	< 0.020	0.57	2.1	140	290	440	130	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01-Oct-2016	8.5 - 9.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	70	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.10	0.0076	< 0.0050	0.0070	< 0.0050	0.0087	< 0.0050	0.0052	0.13	0.0051	0.017	0.020
BIFP-16-HA1	04-Oct-2016	0.2 - 0.4m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	140	86	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Oct-2016	0.8 - 1.1m	**S-CAT-12**	< 0.0050	0.032	< 0.010	< 0.040	< 12	< 10	190	130	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Oct-2016	1.7 - 1.9m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	10	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-16-HA2	04-Oct-2016	0.4 - 0.6m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	11	210	120	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Oct-2016	1.1 - 1.3m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	12	77	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Oct-2016	1.7 - 1.9m	**S-CAT-12**	0.010	< 0.020	< 0.010	< 0.040	< 12	12	75	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-16-HA3	04-Oct-2016	0.4 - 0.6m	**S-CAT-11**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	220	190	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Oct-2016	1.1 - 1.3m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	13	130	81	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Oct-2016	1.8 - 2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 12	< 10	82	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-17-1	25-Sep-2017	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	66	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Sep-2017	4.5 - 5.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Sep-2017	5.5 - 6.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-17-2	25-Sep-2017	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	70	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	0.0080	0.0076	< 0.0050	0.0071	< 0.0050	0.0061	< 0.0050	< 0.0050	0.14	0.011	0.019	0.011

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Table 2
Soil Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Sampling Location	Date (dd-mmm-yyyy)	Sample Depth	Background Category	Petroleum Hydrocarbons (PHCs)									PAH																
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	PHC F1 (C_6-C_{10}) - BTE (mg/kg)	PHC F2 (C_{10}-C_{16}) (mg/kg)	PHC F3 (C_{16}-C_{34}) (mg/kg)	PHC F4 (C_{34}-C_{50}) (mg/kg)	PHC F4 (C_{34}-C_{50})-Gra (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)Anthracene (mg/kg)	Benzo(a)Pyrene (mg/kg)	Benzo(a)Pyrene Total (mg/kg)	Benzo(a)Pyrene Total (mg/kg)	Benzo(k)Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)Anthrace (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)Pyre (mg/kg)	Calculate CCME IACR (none)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
CCME Residential/Parkland Fine Surface				**60**	**110**	**120**	**65**	**---**	**---**	**---**	**---**	**---**	**0.28**	**320**	**2.5**	**1**	**0.6**	**5.3**	**5.3**	**1**	**6.2**	**1**	**15.4**	**0.25**	**1**	**1**	**0.013**	**0.046**	**7.7**
CCME Residential/Parkland Fine Sub-Surface				**120**	**220**	**240**	**130**	**---**	**---**	**---**	**---**	**---**	**0.28**	**320**	**2.5**	**1**	**0.6**	**5.3**	**5.3**	**1**	**6.2**	**1**	**15.4**	**0.25**	**1**	**1**	**0.013**	**0.046**	**7.7**
CCME Canada Wide Standards Surface				---	---	---	---	**210**	**150**	**1300**	**5600**	**5600**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CCME Canada Wide Standards Sub-Surface				---	---	---	---	**800**	**1000**	**3500**	**10000**	**10000**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-CAT-11				**0.0182**	**0.0656**	**0.047**	**0.34**	**29.2**	**43.8**	**274**	**90**	**---**	**0.005**	**0.005**	**0.004**	**0.008**	**0.008**	**---**	**---**	**---**	**0.0176**	**0.007**	**0.012**	**0.01**	**0.011**	**---**	**0.0395**	**0.0379**	**0.0192**
S-CAT-12				**0.005**	**0.02**	**0.01**	**0.04**	**15.5**	**27**	**207**	**86**	**---**	**0.005**	**0.005**	**0.004**	**0.005**	**0.005**	**---**	**---**	**---**	**0.034**	**0.005**	**0.008**	**0.005**	**0.0064**	**---**	**0.025**	**0.059**	**0.0164**
BIFP-17-3	25-Sep-2017	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	58	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	0.0074	< 0.0050	0.0069	< 0.0050	0.0062	< 0.0050	< 0.0050	0.14	0.011	0.019	0.012
	25-Sep-2017	4.0 - 4.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	0.0071	< 0.0050	< 0.0050	< 0.0050	0.0051	< 0.0050	< 0.0050	0.12	0.0077	0.017	0.0099
	25-Sep-2017	5.0 - 5.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	0.0065	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.086	< 0.0050	0.011	0.0056
BIFP-17-4	25-Sep-2017	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	**0.0055**	0.011	0.011	< 0.0050	0.0075	< 0.0050	**0.0083**	< 0.0050	0.0057	0.17	0.013	0.025	0.015
	25-Sep-2017	2.0 - 2.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	0.0061	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.059	< 0.0050	0.0068	< 0.0050
BIFP-17-5	25-Sep-2017	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	12	**290**	**160**	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	0.0080	0.0081	< 0.0050	0.0087	< 0.0050	0.0073	< 0.0050	**0.0065**	0.15	0.012	0.022	0.016
	25-Sep-2017	1.5 - 2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	11	63	< 50	---	< 0.0050	< 0.0050	< 0.0040	**0.0053**	**0.0073**	0.014	0.014	< 0.0050	0.013	< 0.0050	**0.012**	< 0.0050	**0.0075**	0.23	0.015	0.034	**0.021**
BIFP-17-6	25-Sep-2017	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	110	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	**0.0054**	0.011	0.011	< 0.0050	0.0089	< 0.0050	0.0075	< 0.0050	**0.0071**	0.18	0.012	0.024	0.015
	25-Sep-2017	2.5 - 3.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	0.0065	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.082	< 0.0050	0.0099	0.0057
BIFP-17-7	26-Sep-2017	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	57	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	**0.0074**	0.014	0.014	< 0.0050	0.011	< 0.0050	**0.010**	**0.0054**	**0.0073**	0.22	0.024	0.038	**0.019**
	26-Sep-2017	1.5 - 2.0m	**S-CAT-12**	< 0.0050	**0.036**	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	< 0.0050	< 0.0071	0.0068	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.099	0.013	0.015	0.0070
BIFP-17-8	26-Sep-2017	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	100	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	**0.0063**	0.012	0.012	< 0.0050	0.0098	< 0.0050	**0.0090**	0.0050	0.0057	0.19	0.021	0.033	0.016
	26-Sep-2017	1.0 - 1.5m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	**0.0058**	0.012	0.012	< 0.0050	0.0092	< 0.0050	0.0078	< 0.0050	**0.0074**	0.17	0.023	0.029	0.015
BIFP-17-9	26-Sep-2017	0.5 - 1.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	130	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	**0.0061**	0.012	0.012	< 0.0050	0.010	< 0.0050	**0.0094**	**0.0070**	0.0061	0.19	0.021	0.036	**0.017**
	26-Sep-2017	1.5 - 2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	79	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	**0.0054**	0.011	0.011	< 0.0050	0.010	< 0.0050	**0.0084**	**0.0055**	0.0054	0.18	0.018	0.032	0.015
(Duplicate)	26-Sep-2017	1.5 - 2.0m	**S-CAT-12**	< 0.0050	< 0.020	< 0.010	< 0.040	< 10	< 10	< 50	< 50	---	< 0.0050	< 0.0050	< 0.0040	< 0.0050	**0.0054**	0.011	0.011	< 0.0050	0.0087	< 0.0050	0.0079	< 0.0050	< 0.0050	0.16	0.016	0.029	0.015

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
- (CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Surface soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Sub-Surface soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Fine-grained Sub-Surface Soils, excluding protection of potable groundwater, 2001 and updates)

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
- (CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Surface soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canadian Environmental Quality Guidelines for Residential/Parkland, Fine-grained Sub-Surface soils, excluding Groundwater Check (drinking water) and Inhalation of Indoor Air Pathways, 1999 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Fine-grained Surface Soils, excluding protection of potable groundwater, 2001 and updates)
- (CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil for Residential/Parkland Land Use, Fine-grained Sub-Surface Soils, excluding protection of potable groundwater, 2001 and updates)

6. Background 95th Percentile Statistical Category:
- S-CAT-11: Islands - Mineral Surface Soil - 95th Percentile Background
- S-CAT-12: Islands - Mineral Subsurface Soil - 95th Percentile Background

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Table 3
Water Analytical Results: Inorganic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Inorganics and Phenols					Dissolved Metals														
			Chloride (mg/L)	pH (pH Units)	Nitrate (as N) (mg/L)	Nitrite (as N) (mg/L)	Phenols (µg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**120**	**(6.5 - 9)**	**3**	**0.06**	**4**	**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-2			**18**	**8.0**	**2.5**	**0.04**	**14**	**0.03**	**0.002**	**0.04**	**0.00047**	**0.001**	**0.010**	**12**	**0.001**	**0.025**	**0.02**	**0.001**	**0.0001**	**0.0002**	**0.029**	**0.03**
W-CAT-7			**35**	**8.3**	**---**	**---**	**11**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BI SW09	06-Sep-2010	**W-CAT-7**	3	7.55	< 0.003	< 0.003	< 2	---	---	---	---	---	---	< 0.06	---	---	---	---	---	---	---	---
	21-Aug-2011		4	7.88	< 0.003	< 0.003	< 2	---	---	---	---	---	---	0.21	---	---	---	---	---	---	---	---
	15-Aug-2012		5.2	7.78	0.012	< 0.0030	**14**	---	---	---	---	---	---	0.11	---	---	---	---	---	---	---	---
	22-Aug-2013		2.7	---	0.0080	0.0050	**15**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04-Aug-2014		3.0	---	0.011	< 0.010	3.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	09-Aug-2015		7.5	---	< 0.010	< 0.010	2.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BIFP-12-1-3	16-Aug-2012	**W-CAT-2**	8.6	7.93	< 0.0030	< 0.0030	12	0.0053	**0.010**	0.032	< 0.000025	< 0.0010	0.00096	**14**	< 0.00020	0.0083	0.012	0.00028	< 0.00010	< 0.00020	0.00097	0.0046
	22-Aug-2013		7.2	7.77	0.0090	0.0050	14	0.011	**0.0063**	0.025	< 0.000025	< 0.0010	0.00037	6.1	< 0.00020	0.0042	0.0092	0.00039	< 0.00010	< 0.00020	0.0029	0.0050
BIFP-12-2-3	16-Aug-2012	**W-CAT-2**	6.0	7.19	< 0.0030	< 0.0030	< 2.0	0.018	**0.0066**	< 0.020	< 0.000025	< 0.0010	0.00065	**35**	< 0.00020	0.0040	**0.032**	0.00070	< 0.00010	< 0.00020	0.0019	0.0096
BIFP-12-3-4	16-Aug-2012	**W-CAT-2**	**70**	7.64	**6.7**	0.022	< 2.0	0.0083	0.00076	0.032	0.00039	< 0.0010	0.0032	0.28	< 0.00020	0.0013	**0.024**	0.00067	< 0.00010	< 0.00020	0.021	0.018
BIFP-16-1-3	04-Oct-2016	**W-CAT-2**	6.6	7.66	< 0.010	< 0.010	5.7	0.0061	**0.0039**	< 0.020	< 0.000020	< 0.0010	0.00072	2.4	< 0.00020	0.0052	0.012	0.00031	< 0.00010	< 0.00020	0.0025	0.0040
	10-Aug-2017		5.5	---	0.031	< 0.010	3.6	0.0062	0.0015	**0.095**	0.000041	< 0.0010	0.0011	< 0.060	< 0.00020	0.017	0.0075	0.00034	< 0.00010	< 0.00020	0.0056	0.0034
	20-Jul-2018		6.3	---	0.50	0.015	5.6	0.0088	0.00086	**0.088**	0.000065	< 0.0010	0.0031	< 0.060	0.00037	**0.026**	0.0055	0.00041	< 0.00010	< 0.00020	0.015	0.0031
BIFP-16-2-3	04-Oct-2016	**W-CAT-2**	1.6	7.75	< 0.010	< 0.010	3.3	0.0074	**0.0047**	**0.047**	< 0.000020	< 0.0010	0.00063	0.15	< 0.00020	0.0058	0.0077	0.00053	< 0.00010	< 0.00020	0.0020	0.0034
	20-Jul-2018		6.1	---	0.27	< 0.010	< 2.0	< 0.0030	0.00045	**0.049**	0.000044	< 0.0010	0.0020	< 0.060	< 0.00020	0.0055	0.0039	0.00036	< 0.00010	< 0.00020	0.0043	< 0.0030
BIFP-16-3-3	04-Oct-2016	**W-CAT-2**	5.0	7.39	0.017	< 0.010	13	0.0063	**0.0059**	0.030	0.000020	< 0.0010	0.00069	11	< 0.00020	0.0047	0.020	0.00051	< 0.00010	< 0.00020	0.0041	0.0076
	10-Aug-2017		5.3	---	0.018	< 0.010	6.1	0.013	0.0011	**0.097**	0.000049	< 0.0010	0.0012	< 0.060	< 0.00020	0.014	0.0071	0.00033	< 0.00010	< 0.00020	0.0037	< 0.0030
	20-Jul-2018		5.5	---	0.095	< 0.010	2.3	< 0.0030	0.00043	**0.052**	0.000063	< 0.0010	0.0016	< 0.060	< 0.00020	0.0066	0.0043	0.00050	< 0.00010	< 0.00020	0.0046	< 0.0030
BIFP-16-SW1	04-Oct-2016	**W-CAT-7**	4.7	7.99	0.010	< 0.010	< 2.0	---	---	---	---	---	---	0.16	---	---	---	---	---	---	---	---
	10-Aug-2017		4.7	---	0.027	< 0.010	4.6	---	---	---	---	---	---	0.098	---	---	---	---	---	---	---	---
	27-Sep-2017		4.5	---	< 0.010	< 0.010	---	0.0034	0.00050	< 0.020	< 0.000020	< 0.0010	0.00037	0.18	< 0.00020	0.0016	0.0012	< 0.00020	< 0.00010	< 0.00020	0.00024	< 0.0030
	20-Jul-2018		3.1	---	< 0.010	< 0.010	4.6	---	---	---	---	---	---	**0.49**	---	---	---	---	---	---	---	---
BIFP-16-SW2	04-Oct-2016	**W-CAT-7**	4.6	7.98	< 0.010	< 0.010	3.6	---	---	---	---	---	---	0.14	---	---	---	---	---	---	---	---
	10-Aug-2017		4.6	---	0.011	< 0.010	4.5	---	---	---	---	---	---	0.088	---	---	---	---	---	---	---	---
	27-Sep-2017		4.4	---	< 0.010	< 0.010	---	0.0031	0.00069	< 0.020	< 0.000020	< 0.0010	< 0.00020	0.24	< 0.00020	0.0015	0.0012	< 0.00020	< 0.00010	< 0.00020	0.00023	< 0.0030
BIFP-17-1-3	15-Oct-2017	**W-CAT-2**	5.4	---	< 0.010	< 0.010	---	---	---	---	---	---	---	1.6	---	---	---	---	---	---	---	---
	20-Jul-2018		4.9	---	< 0.010	< 0.010	5.4	**0.42**	0.0017	0.025	0.00031	< 0.0010	0.0087	6.6	**0.0026**	0.00044	0.0094	0.00027	< 0.00010	< 0.00020	0.0036	**0.031**
BIFP-17-SW1	27-Sep-2017	**W-CAT-7**	4.2	---	< 0.010	< 0.010	---	0.0041	0.00064	< 0.020	< 0.000020	< 0.0010	0.00046	0.24	< 0.00020	0.0016	0.0012	< 0.00020	< 0.00010	< 0.00020	0.00023	< 0.0030
BIFP-17-SW2	27-Sep-2017	**W-CAT-7**	4.7	---	< 0.010	< 0.010	---	0.0033	0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00020	**0.44**	< 0.00020	0.0015	0.0013	< 0.00020	< 0.00010	< 0.00020	0.00023	< 0.0030
	20-Jul-2018		3.3	---	< 0.010	< 0.010	**19**	---	---	---	---	---	---	**5.8**	---	---	---	---	---	---	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-2: Bear, Goose, and Frenchy's Islands - Surficial Sediments - 95th Percentile Background
W-CAT-7: Bear Island Surface Water - 95th Percentile Background

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Table 4
Water Analytical Results: Total Metals

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	Total Metals														
			Aluminum (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.1**	**0.005**	**1.5**	**0.00009**	**0.0089**	**0.004**	**0.3**	**0.007**	**0.073**	**0.15**	**0.001**	**0.00025**	**0.0008**	**0.015**	**0.007**
W-CAT-7			**0.64**	**0.005**	**0.02**	**0.00010**	**0.001**	**0.003**	**3.9**	**0.001**	**0.003**	**0.009**	**0.0006**	**---**	**0.0002**	**0.003**	**0.025**
BI SW09	06-Sep-2010	**W-CAT-7**	0.008	0.0008	< 0.02	< 0.000005	< 0.001	0.0003	0.33	< 0.0002	0.0015	0.0023	< 0.0002	< 0.0001	< 0.0002	0.0012	< 0.003
	21-Aug-2011		0.012	0.0042	< 0.02	0.000014	< 0.001	0.0006	4.1	< 0.0002	0.0016	0.0026	< 0.0002	< 0.0001	< 0.0002	0.0003	0.006
	15-Aug-2012		3.5	0.11	< 0.20	0.0013	**< 0.050**	0.033	1600	**< 0.010**	0.031	0.055	**< 0.010**	**< 0.0050**	**< 0.010**	< 0.0050	**< 0.15**
	22-Aug-2013		0.021	0.0011	< 0.020	< 0.000025	< 0.0010	0.00038	0.77	< 0.00020	0.0023	0.0016	0.00039	< 0.00010	< 0.00020	0.00025	< 0.0030
	04-Aug-2014		1.5	0.0046	< 0.020	0.00017	0.0030	0.0060	15	0.0022	0.0040	0.0085	0.00039	< 0.00010	0.00023	0.00073	0.028
	09-Aug-2015		0.0083	0.00051	< 0.020	0.000025	< 0.0010	0.00039	0.21	< 0.00020	0.0014	0.0012	< 0.00020	< 0.00010	< 0.00020	0.00023	0.0039
	08-Aug-2016		0.074	0.00097	< 0.020	0.000025	< 0.0010	0.00034	0.89	< 0.00020	0.0015	0.0014	< 0.00020	< 0.00010	< 0.00020	0.00015	< 0.0030
	10-Aug-2017		0.64	0.0092	< 0.020	0.00016	0.0017	0.0022	23	0.0030	0.0026	0.0072	0.00033	< 0.00010	< 0.00020	0.00088	0.016
	20-Jul-2018		0.041	0.0012	< 0.020	< 0.000020	< 0.0010	0.00060	0.84	< 0.00020	0.0018	0.0016	0.00020	< 0.00010	< 0.00020	0.00027	< 0.0030
BIFP-16-SW1	04-Oct-2016	**W-CAT-7**	0.45	0.0029	< 0.020	0.0010	0.0010	0.0026	3.3	0.0014	0.0026	0.0042	0.00023	< 0.00010	< 0.00020	0.00064	0.013
	10-Aug-2017		0.061	0.0013	< 0.020	0.000038	< 0.0010	0.00050	0.52	< 0.00020	0.0025	0.0014	< 0.00020	< 0.00010	< 0.00020	0.00037	< 0.0030
	27-Sep-2017		0.13	0.0045	< 0.020	0.000097	< 0.0010	0.0015	6.1	0.00028	0.0012	0.0031	< 0.00020	< 0.00010	< 0.00020	0.00028	0.010
	20-Jul-2018		0.092	0.0026	< 0.020	< 0.000020	< 0.0010	0.00046	1.9	< 0.00020	0.0022	0.0017	< 0.00020	< 0.00010	< 0.00020	0.00015	< 0.0030
BIFP-16-SW2	04-Oct-2016	**W-CAT-7**	1.6	0.0035	< 0.020	0.00019	0.0029	0.0040	5.4	0.0020	0.0024	0.0070	0.00025	< 0.00010	< 0.00020	0.00064	0.027
	10-Aug-2017		0.041	0.0011	< 0.020	< 0.000020	< 0.0010	0.00045	0.32	< 0.00020	0.0020	0.0015	< 0.00020	< 0.00010	< 0.00020	0.00044	< 0.0030
	27-Sep-2017		0.033	0.00073	< 0.020	< 0.000020	< 0.0010	0.00050	0.39	< 0.00020	0.0016	0.0013	< 0.00020	< 0.00010	< 0.00020	0.00025	< 0.0030
BIFP-17-SW1	27-Sep-2017	**W-CAT-7**	0.016	0.00070	< 0.020	< 0.000020	< 0.0010	0.00041	0.34	< 0.00020	0.0016	0.0014	< 0.00020	< 0.00010	< 0.00020	0.00023	< 0.0030
BIFP-17-SW2	27-Sep-2017	**W-CAT-7**	2.3	0.016	< 0.020	0.00036	0.0061	0.0071	22	0.0037	0.0020	0.011	0.00034	< 0.00010	< 0.00020	0.00057	0.043
	20-Jul-2018		17	0.18	0.023	0.0024	0.037	0.061	290	0.031	0.0058	0.085	0.0024	0.00047	0.00042	0.0023	0.36

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

Bold 4. Denotes values exceeding applied background concentrations only.

Bold 5. Denotes non-detect values where reportable detection limit exceeds applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-7: Bear Island Surface Water - 95th Percentile Background

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH								
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-2			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**	**0.00010**	**0.000010**	**0.000009**	**0.0000075**	**0.00001**	**0.00005**	**0.0001**	**0.00006**	**0.000020**
W-CAT-7			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BI SW09	06-Sep-2010	**W-CAT-7**	< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	---	---	---	---	---	---	---	---	---	---
	09-Sep-2010		---	---	---	---	---	< 0.1	---	---	---	---	---	---	---	---	---
	21-Aug-2011		< 0.0004	< 0.0004	< 0.0004	< 0.0008	< 0.1	< 0.1	---	---	---	---	---	---	---	---	---
	15-Aug-2012		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	22-Aug-2013		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	04-Aug-2014		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	09-Aug-2015		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	08-Aug-2016		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	10-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
BIFP-12-1-3	16-Aug-2012	**W-CAT-2**	0.51	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
	22-Aug-2013		0.13	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
BIFP-12-2-3	16-Aug-2012	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
BIFP-12-3-4	16-Aug-2012	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.1	< 0.10	---	---	---	---	---	---	---	---	---
BIFP-16-1-3	04-Oct-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.00010	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	0.000090	< 0.000020
	10-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
BIFP-16-2-3	04-Oct-2016	**W-CAT-2**	0.00069	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.00010	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	0.00010	< 0.000020
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
BIFP-16-3-3	04-Oct-2016	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.00010	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	0.000095	< 0.000020
	10-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
BIFP-16-SW1	04-Oct-2016	**W-CAT-7**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.00010	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020
	10-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	27-Sep-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---

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Table 5
Water Analytical Results: Organic Parameters

PROJECT No.: 407011-00622-500

Monitoring Station	Date (dd-mmm-yyyy)	Background Category	PHC						PAH								
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	Acenaphthene (mg/L)	Anthracene (mg/L)	Benzo(a)Anthracene (mg/L)	Benzo(a)Pyrene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
CCME CEQG Freshwater Aquatic Life			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**0.0058**	**0.000012**	**0.000018**	**0.000015**	**0.00004**	**0.003**	**0.0011**	**0.0004**	**0.000025**
W-CAT-2			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**	**0.00010**	**0.000010**	**0.000009**	**0.0000075**	**0.00001**	**0.00005**	**0.0001**	**0.00006**	**0.000020**
W-CAT-7			**0.0004**	**0.0004**	**0.0004**	**0.0008**	**0.1**	**0.1**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
BIFP-16-SW2	04-Oct-2016	**W-CAT-7**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.00010	< 0.000010	< 0.0000085	< 0.0000075	< 0.000010	< 0.000050	< 0.00010	< 0.000050	< 0.000020
	10-Aug-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	27-Sep-2017		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
BIFP-17-1-3	15-Oct-2017	**W-CAT-2**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
BIFP-17-SW1	27-Sep-2017	**W-CAT-7**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
BIFP-17-SW2	27-Sep-2017	**W-CAT-7**	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---
	20-Jul-2018		< 0.00040	< 0.00040	< 0.00040	< 0.00089	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.

Bold 3. Denotes values exceeding applied background concentrations and CCME guidelines
(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

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(CCME 2018. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Sept, 2018).

6. Background 95th Percentile Statistical Category:
W-CAT-2: Bear, Goose, and Frenchy's Islands - Surficial Sediments - 95th Percentile Background
W-CAT-7: Bear Island Surface Water - 95th Percentile Background

Appendix 12
Trend Charts

Groundwater and Surface Water Trend Chart List

Sampling Location
Mainland West - Central Processing Facility
CPF 97-2-7
CPF 98-6-3
CPF 09-6-19
Mainland West - F-28X Well Site
F28 09-2-6
F28 09-3-14
Mainland West - E-27X Well Site
E27 09-2-16
Mainland West - West Biocell
WBIO 08-1-2
Mainland Central - Biocells / B-33X Well Site
ARB-10-2-3
ARB-12-1-4
ARB-12-4-2
ARB-13-1-4.5
ARB-13-3-4.5
ARB-13-5-4.5
ARB-16-1-3
ARB-17-1-3
ARB-17-2-3
ARB-17-3-5
BC2-15-1-3
BC2-15-2-4
BC2-15-3-4
BC2-15-4-3
OPB 09-2-4
OPB 09-3-4
ARB-17-SW01
ARB-17-SW02
Mainland Central - B-30X Well Site
B30X-12-1-4
B30X-12-2-4
B30-13-1-5.4
B30-13-2-4.5
B30-13-3-4.5
B30-13-4-3.9
B30-17-1-5
B30-17-2-3
B30-19-01-5

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Groundwater and Surface Water Trend Chart List

Sampling Location
Mainland Central - C-30X Well Site / Bosworth Creek and Delta
C30-10-1-5
BOS-DP-13-1-1.4
BOS-DP-13-2-1.35
BOS-DP-13-3-2
BOS-DP-13-4-3
BOS SW01
Mainland Central - Former Battery #3
BT3 97-11-11
BT3 98-7-7
BT3 99-20-13
BT3 99-21-12
BT3 99-23-13
BT3 02-32-6
BT3 02-34-4
BT3 02-36-4
BT3-18-1-5.5
Mainland Central - F-31X Well Site
F31 98-1-4
F31 97-3-5
Mainland Central - G-32X Well Site
G32-10-1-3
Mainland Central - E-33X Well Site
E33-18-1-2.5
E33-19-01-4
E33-19-02-5
Mainland East - Former Fuel Tanks and Potential Campsite Biocell
CAB 09-3-3
FT-10-1-3
Mainland East - C-36X Well Site
C36-10-1-3
C36-10-2-3
C36-10-3-3
C36 SW01
Mainland East - B-38X Well Site
B38-16-1-3 (re-install of B38 02-33-3)
B38-16-2-4 (re-install of B38 02-34-3)
B38 03-38-5
B38 08-2-4
B38-10-2-5
B38-10-1-5

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Groundwater and Surface Water Trend Chart List

Sampling Location
Mainland East - B-38X Remediation System
B38-N-INLET
FTA-N-INLET
LT7-INLET
Mainland East - Fire Training Area
FTA 99-2-4
FTA 99-3-4
FTA 98-4-5
Mainland East - Reduced Crude Flare Pit
RCF 03-1-5
RCF 98-3-4
RCF-16-SW01
Mainland East - Mainland Tank Farm
MTF 98-4-5
MTF 98-5-4
TF 02-7-3
TF 02-9-3
TF 02-10-5
TF 03-11-4
Mainland East - B-42X Well Site
B42-17-1-5
B42-17-2-4
B42-17-3-4
Mainland East - Former Refinery
NWR 98-13-21
NWR 98-23-21
NWR 02-12-7
NWR 03-42-19
NWR 03-43-20
NWR 09-4-5
NWR 09-1-20
NWR 09-2-26
NWR 09-3-20
NWR 09-4-17
NWR 09-5-19
RB-OBS-28
RB-OBS-29
RB-OBS30
RB-OBS32
NWR-OBS37
RB-OBS35
RB-OBS36
RB-OBS38
RB-OBS39

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Groundwater and Surface Water Trend Chart List

Sampling Location
RB-RW-1
RB-RW-2
RB-RW-4
RB-RW-5
RB-RW-6
RB-RW-7
RB-RW-8
RB-RW-9
RB-RW-10
RB-RW-11
RB-RW-12
RB-RW-13
RB-RW-14
RB-OBS-46
RB-OBS-47
RB-OBS-48
RB-MW17-01
RB-MW17-02
RB-MW17-03
RB-MW17-04
RB-MW17-05
RB-MW17-06
RB-MW17-07
RB-MW17-08
RB-MW17-09
RB-MW17-10
RB-MW17-11
P100
P200
P700
Sumps - C-27X Sump
C27-16-1-3
C27-16-2-3
C27-16-3-4
C27-16-4-3
Sumps - Cemetery Sump
CEM 08-2-5
CEM 08-4-5
CEM 09-1-4
CEM 09-3-2
CEM-13-1-2

Groundwater and Surface Water Trend Chart List

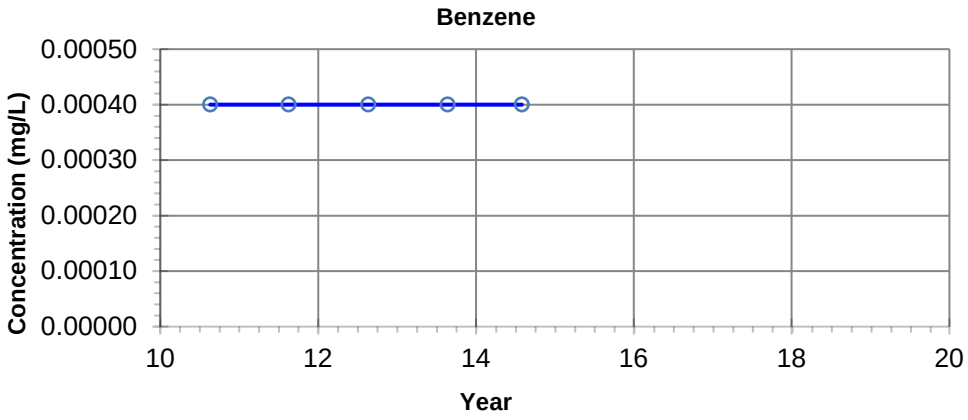
Sampling Location
Sumps - Mainland Sumps Area
MLS 02-5-8
MLS 09-1-3
MLS 09-2-3
MLS 09-5-3
MLS 09-15-3
MLS-10-1-7
MLS-13-9-3
MLS-13-2-3
MLS-14-2-3
MLS-14-5-4
Sumps - Mainland Drilling Sump
MLS 08-1-4
MLS 08-2-5
MLS 08-3-4
MLS-13-1-3
Sumps - Closed Well Services Sump
MLS 02-7-7
MLS 02-8-8
MLS 02-9-8
MLS 02-10-8
MLS 09-9-2
MLS-10-2-3
MLS-13-3-3
MLS-13-4-3
Mainland - Background
MCBG-10-1-3
MCBG-12-1-2
MCBG-16-5-4
MEBG-15-4-3
MEBG-12-2-3
MWBG-10-1-3
Bear Island - Bear Island West Sumps
BI 08-3-2
BI 08-6-4
BI 08-7-2
BI 08-8-4
BI DP 08-4
BI DP 08-5
BIS-10-3-DP
BIS-16-1-3
BIS-16-7-5
BIS-16-8-3
BIS-16-10-4

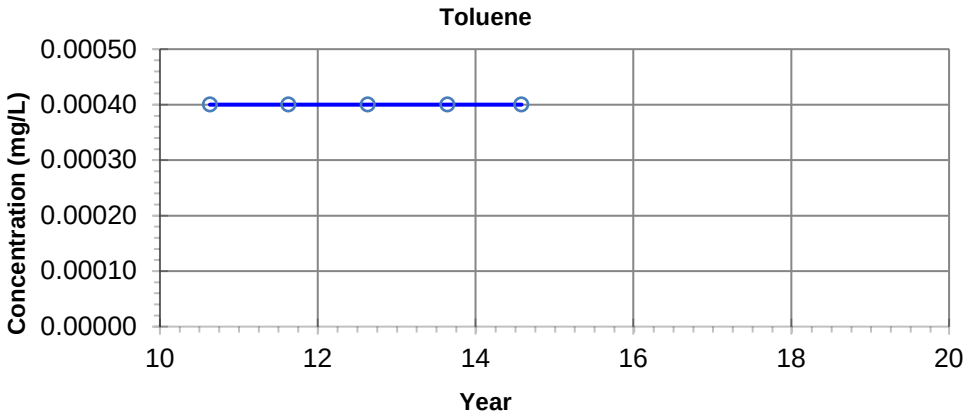
Groundwater and Surface Water Trend Chart List

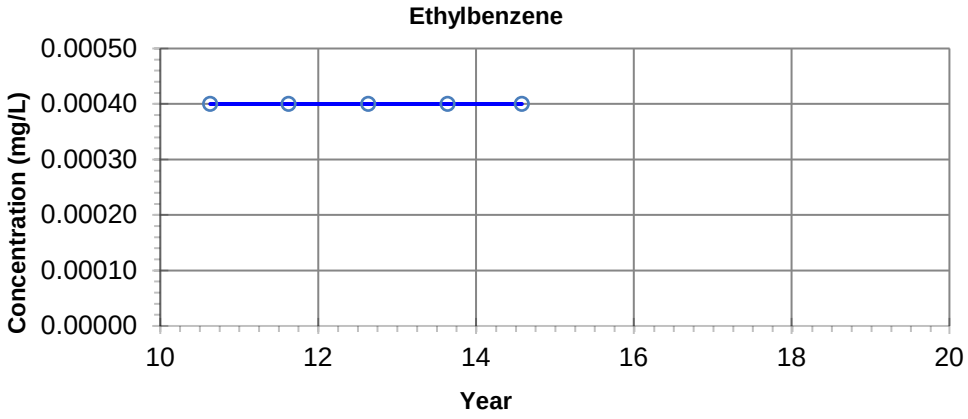
Sampling Location
BIS-16-11-4
BIS-16-12-5
BI-13-5-2
BI-13-6-2
BI-13-18-3
BI SW01
BI SW03
BI SW04
BI SW05
BI SW06
BI-13-11
Bear Island - R-36X Well Site
R36-16-1-5
R36-16-3-4
R36-16-4-3
R36-16-6-4
R36-16-9-3
Bear Island - Former Bear Island Battery
BI-14-13-3
BI BT1 09-1-4
BIBT1-15-1-3.5
BIBT1-15-2-4
BIBT1-15-4-4
BIBT1-15-5-3
BIBT1-15-7-4
BIBT1-16-1-3
BIBT1-16-2-3
BIBT1-16-3-3
Bear Island - Bear Island East Sump (Sump 6)
BI 08-2-3
BI-13-2-4.5
BIWS-16-1-4
BIS6-17-SW01
BI SW-13-1
Bear Island - N-42X Well Site
BIB 98-2-5
BIN42-10-1-5
BIN42-10-2-4
BIN42 SW01
Bear Island - Former Bear Island Flare Pit
BIFP-16-1-3
BIFP-16-2-3
BIFP-16-3-3
BIFP-17-1-3

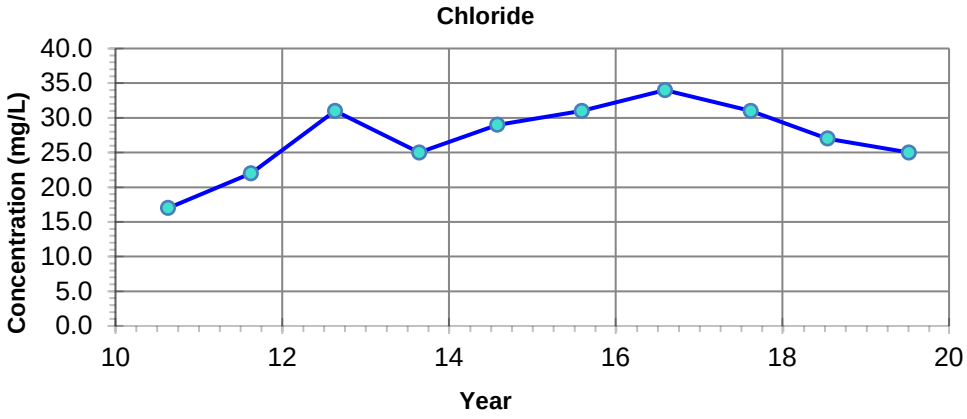
Groundwater and Surface Water Trend Chart List

Sampling Location
BIFP-16-SW1
BIFP-17-SW2
BI SW09
Bear Island - Background
BIBG-12-2-4
Goose Island
GIP9 09-1-4
GIQ8 09-1-6
GIQ8-10-1-5
GIT10 09-1-4
GIT10 09-2-3
GI SW05
Goose Island - Background
GIBG-10-1-5









NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: CPF 97-2-7

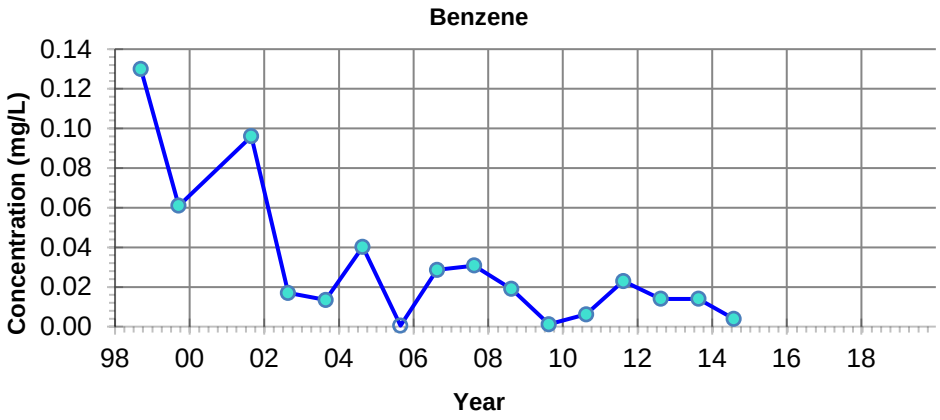
17-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

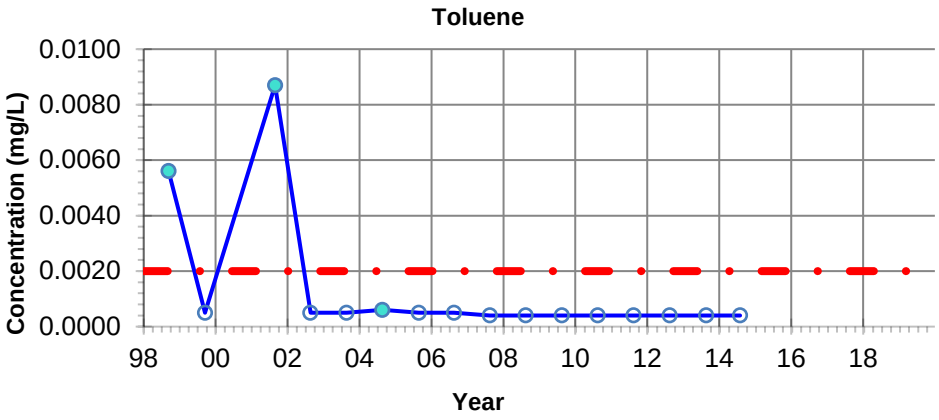
PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

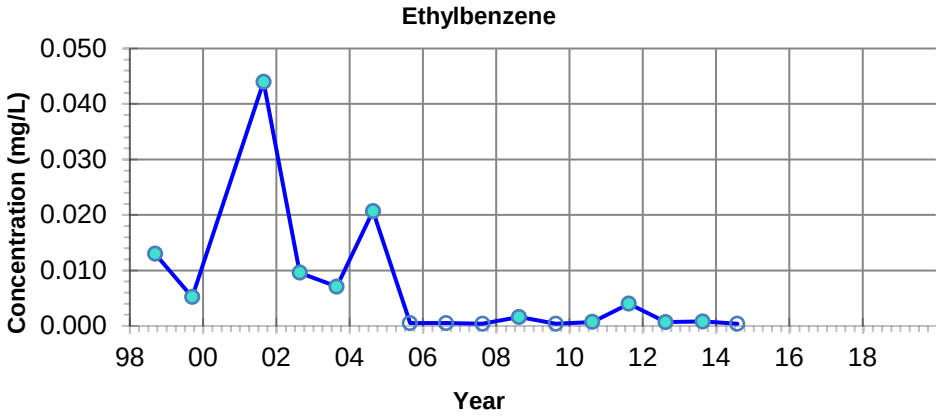
Advisian
Worley Group

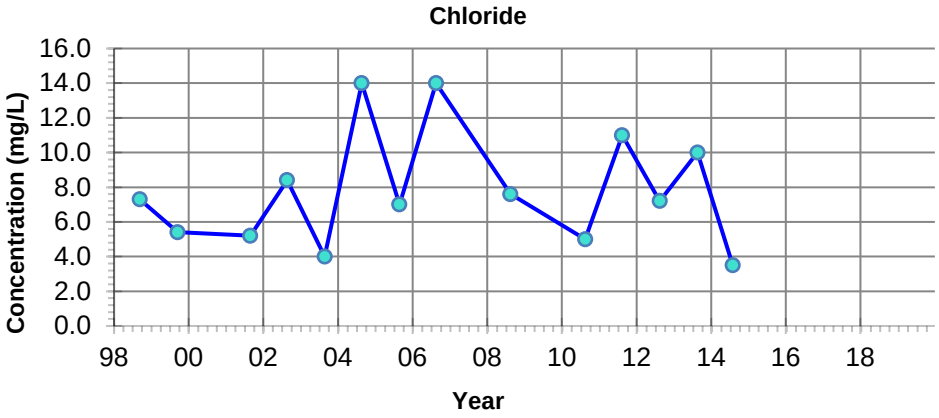
PROJECT NUMBER:
417011-00096

File Path: C:\Users\Jinrong.Cui\Desktop\Graphs\417011-00096









NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: CPF 98-6-3

17-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

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Worley Group

PROJECT NUMBER:
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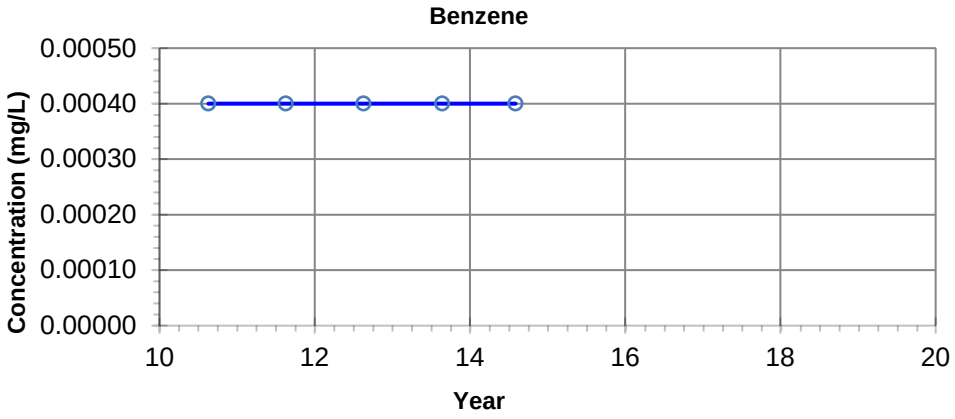

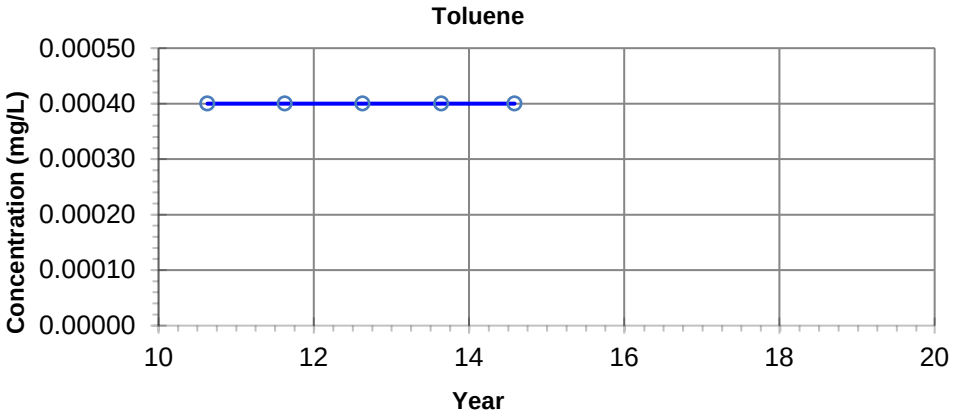

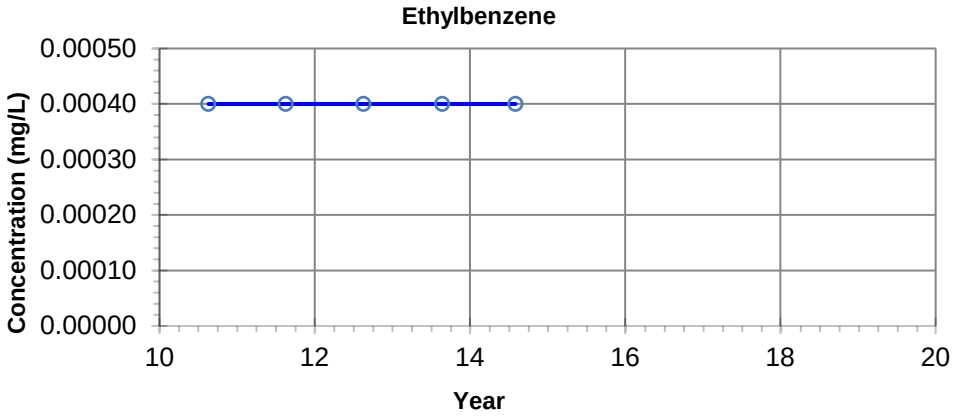

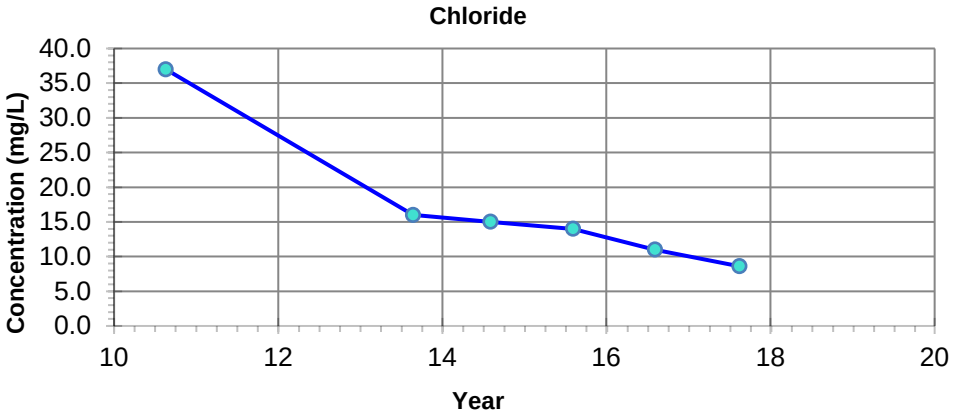

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: CPF 09-6-19

17-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

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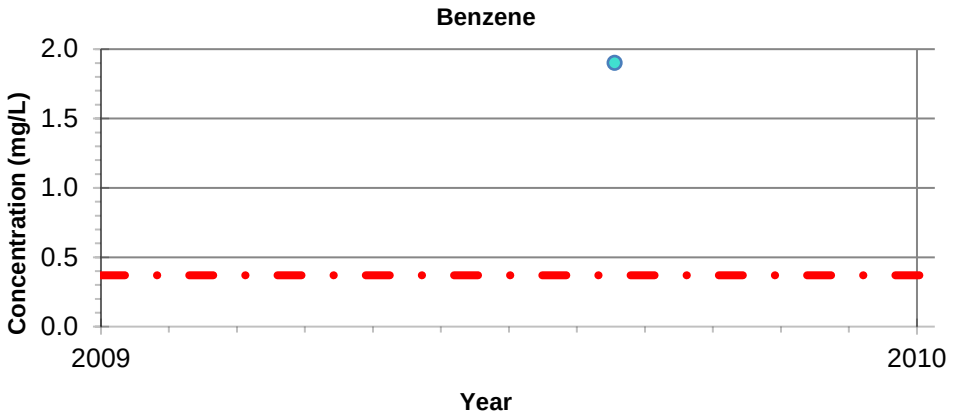

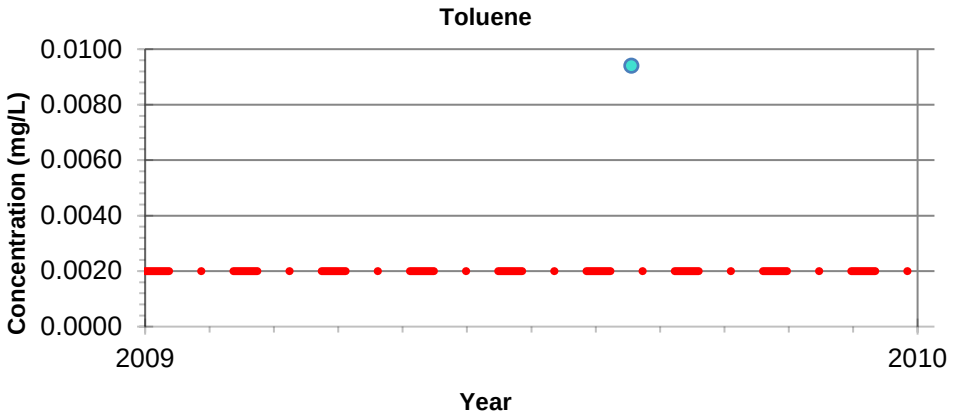

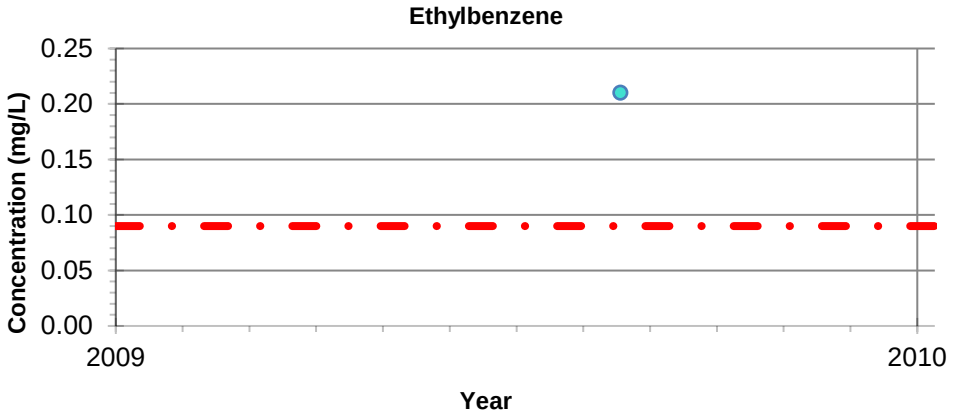

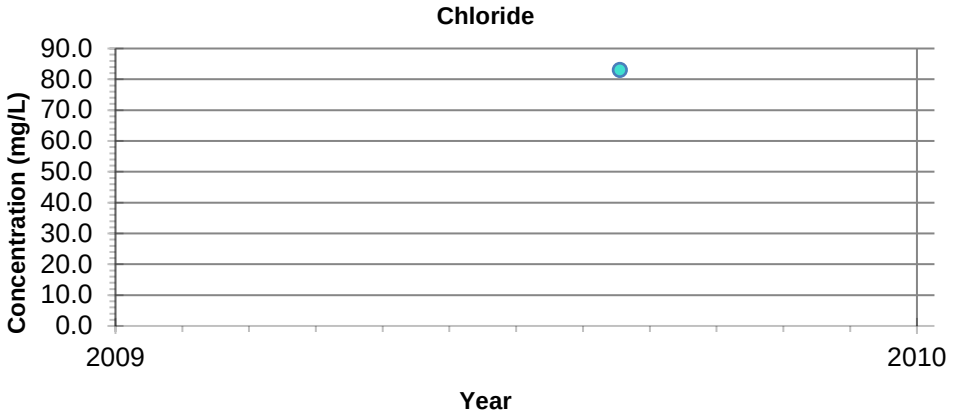

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: F28 09-2-6

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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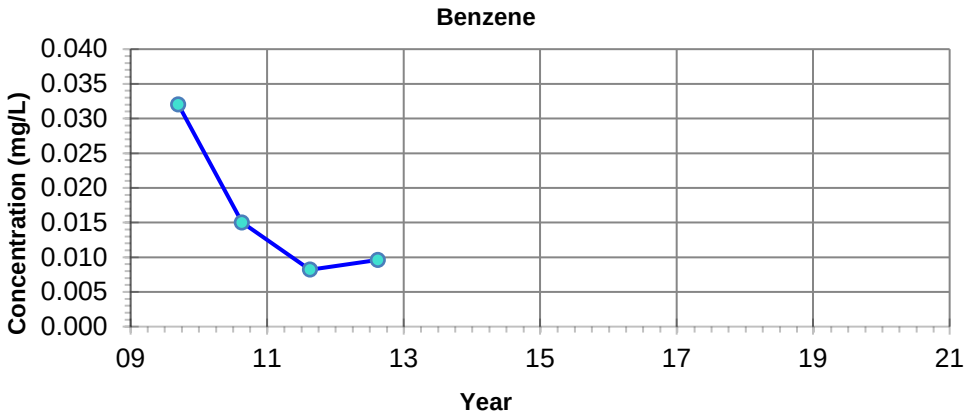

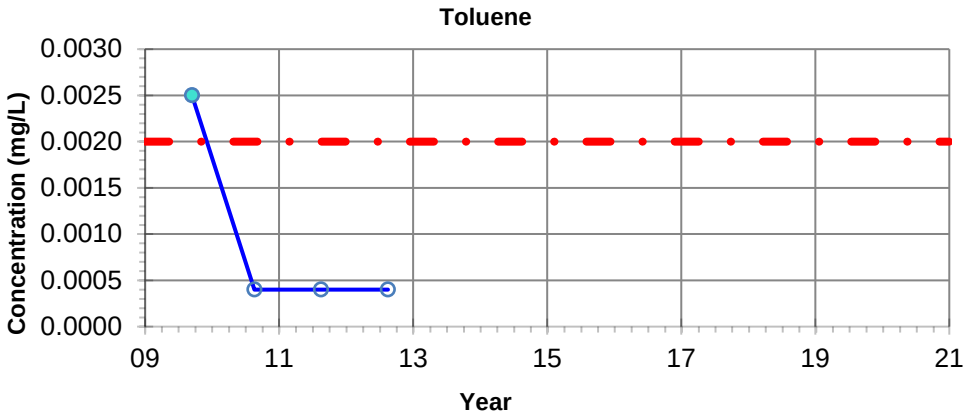

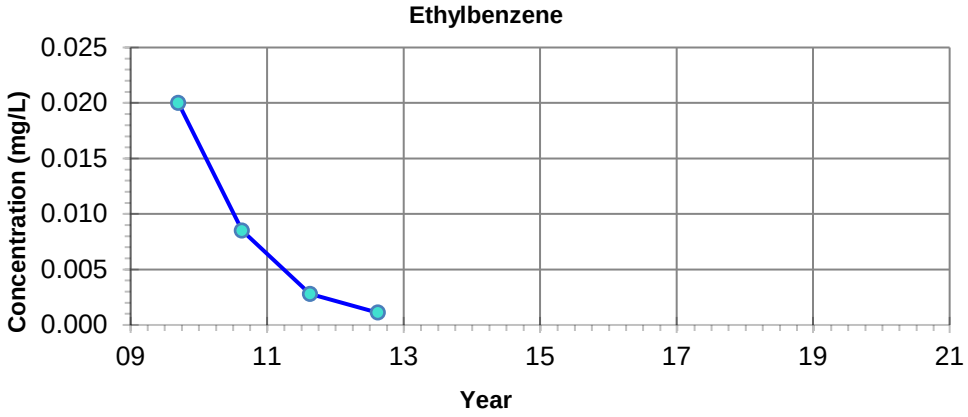

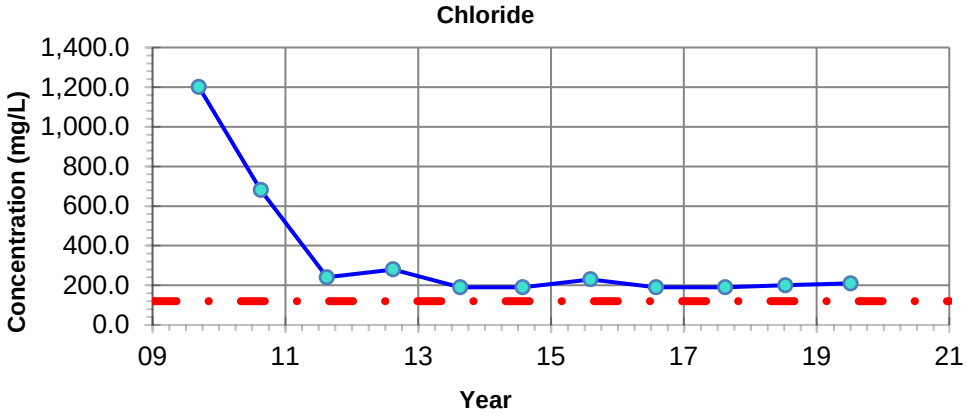

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: E27 09-2-16

17-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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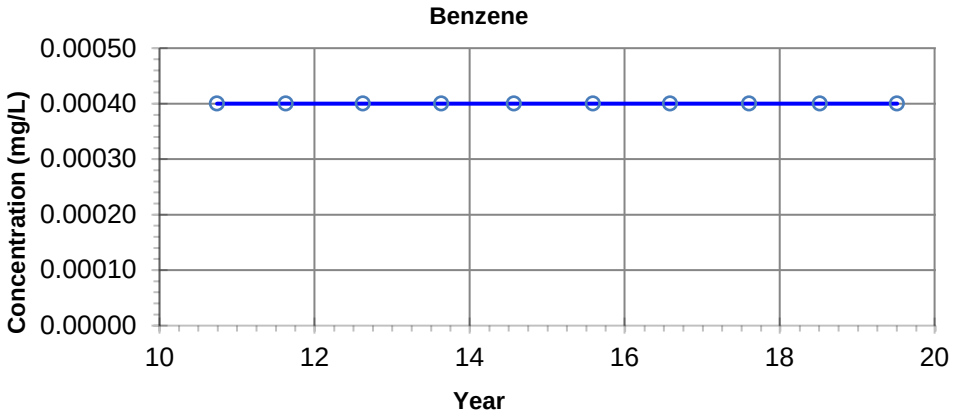

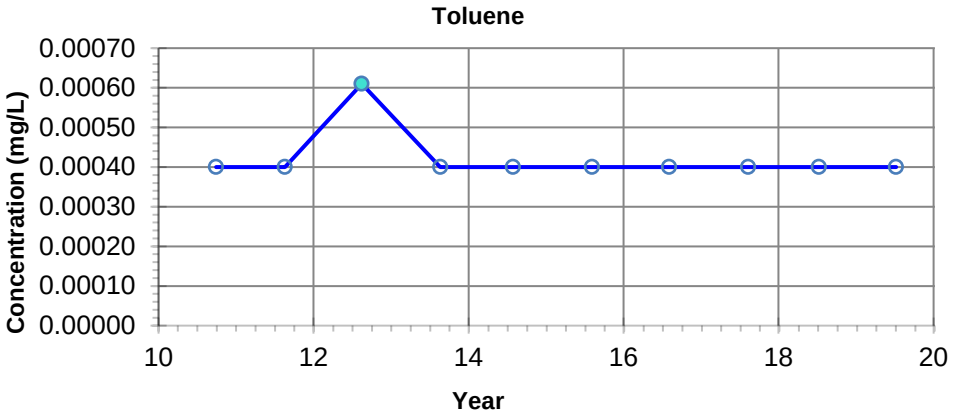

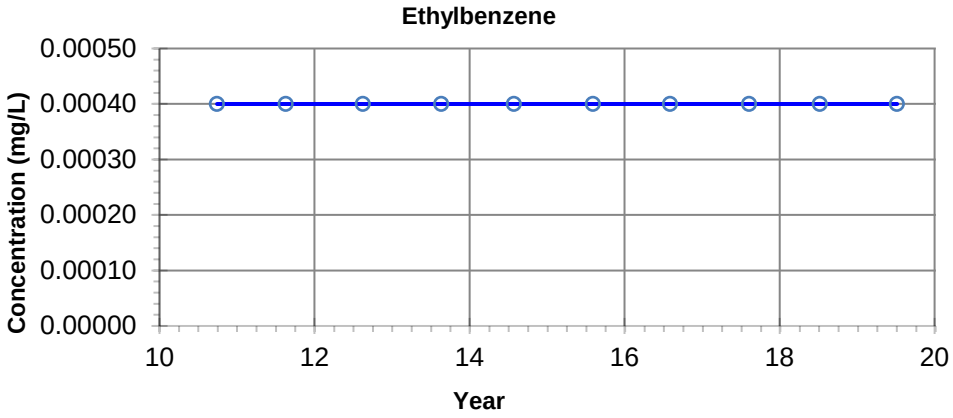

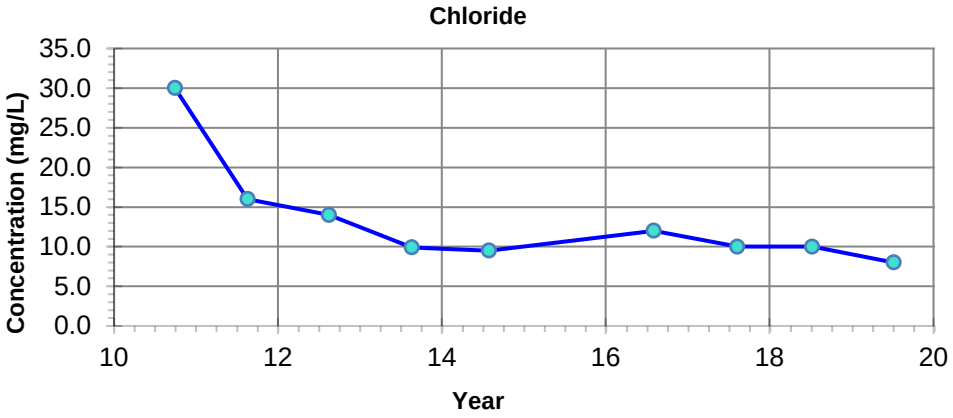

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: ARB-10-2-3

17-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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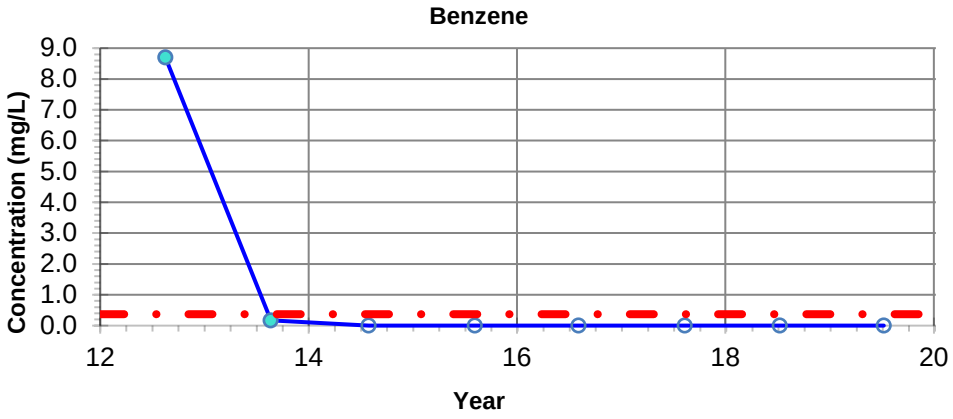

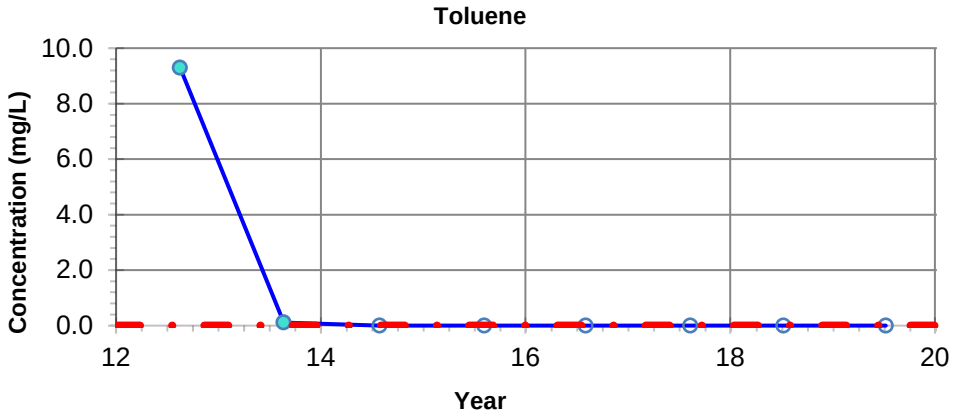

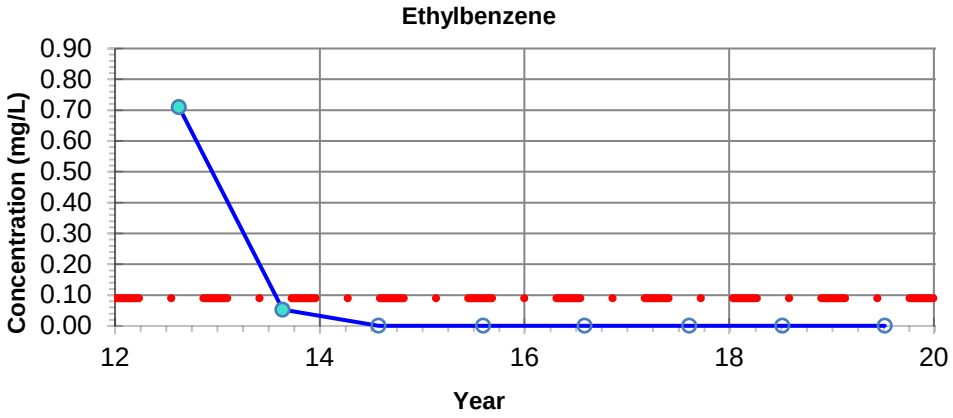

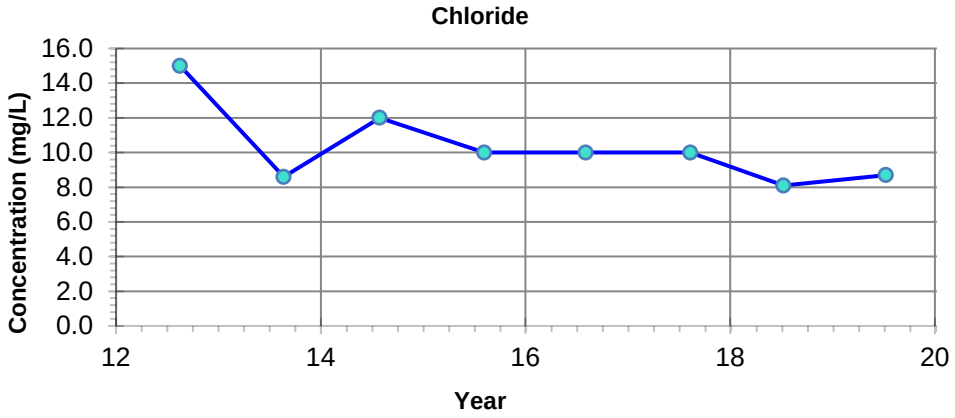

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: ARB-12-1-4

17-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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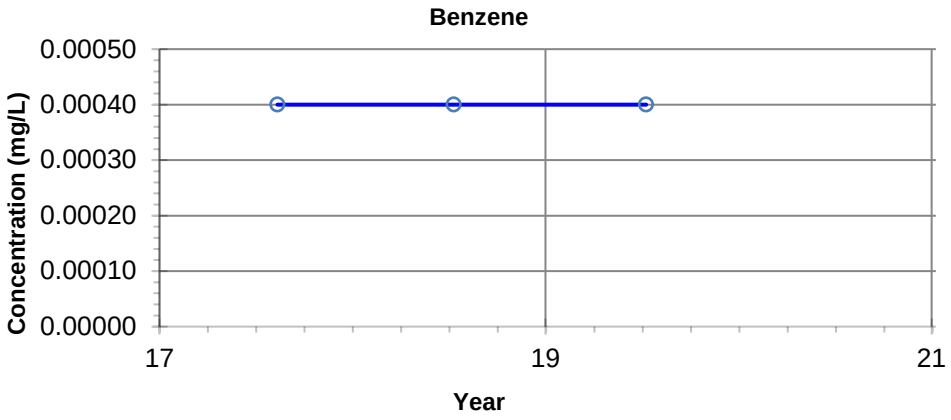

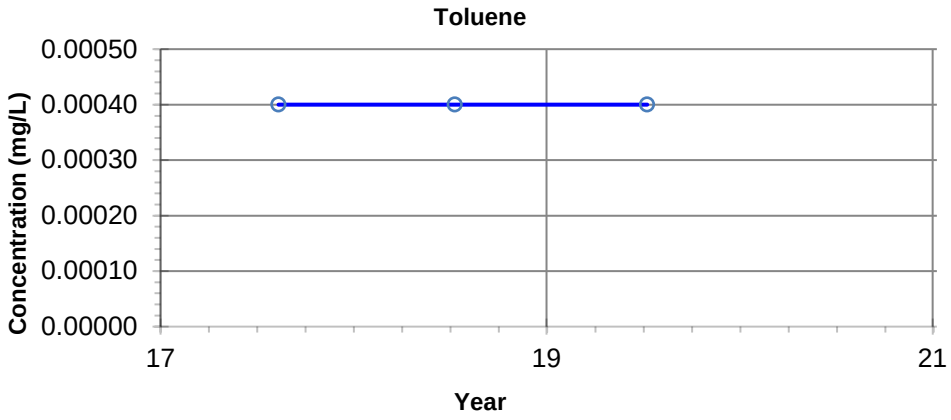

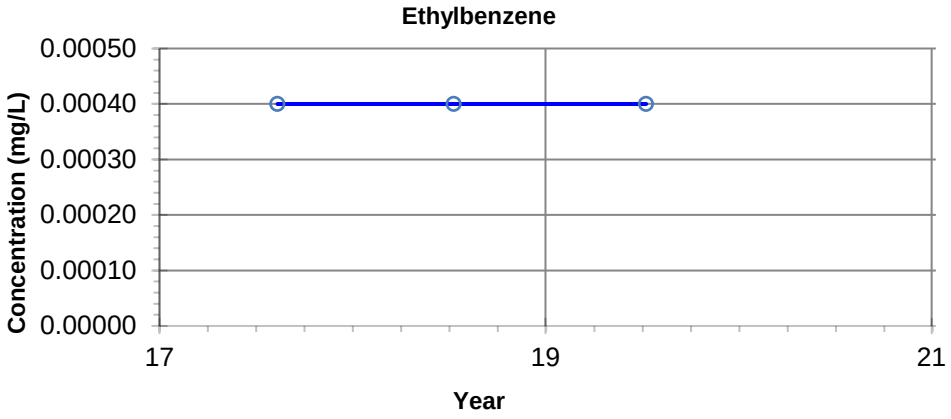

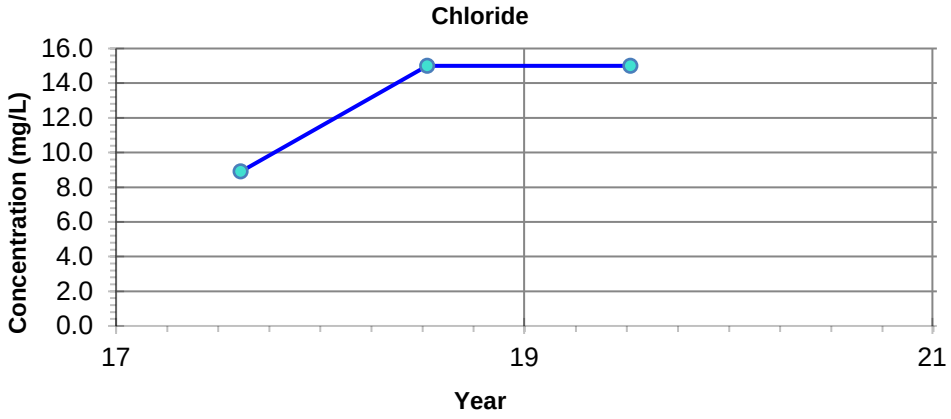

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Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: ARB-16-1-3

17-Mar-2020 date	NA edited by	JC drawn by	NA app by

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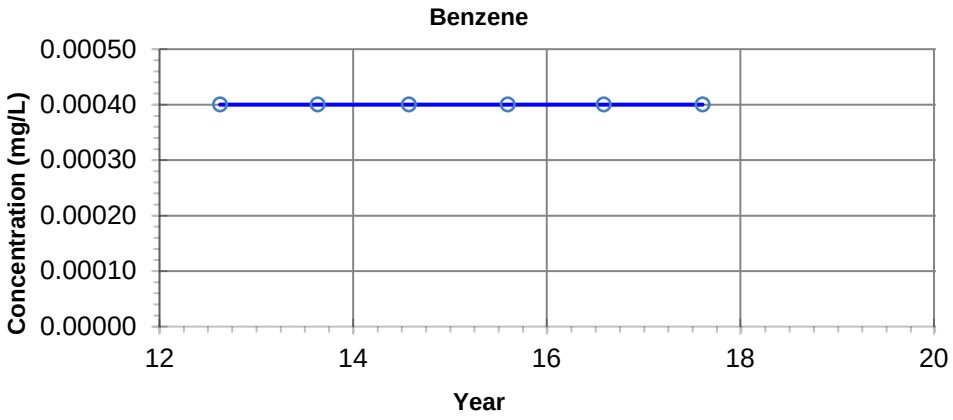

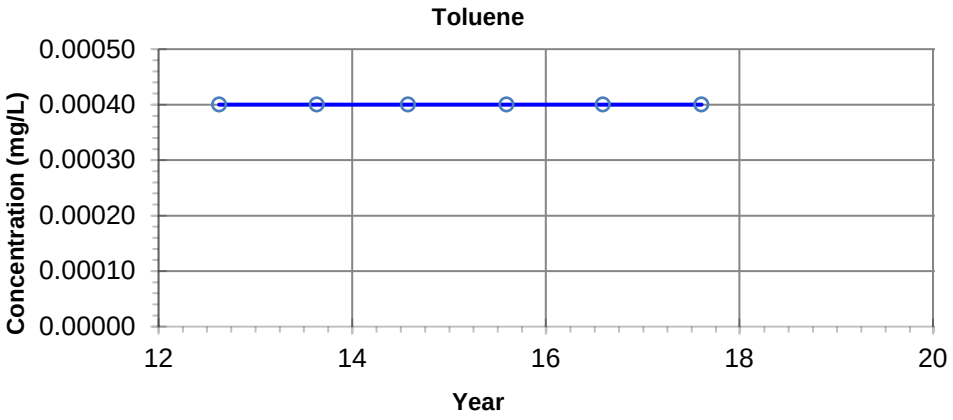

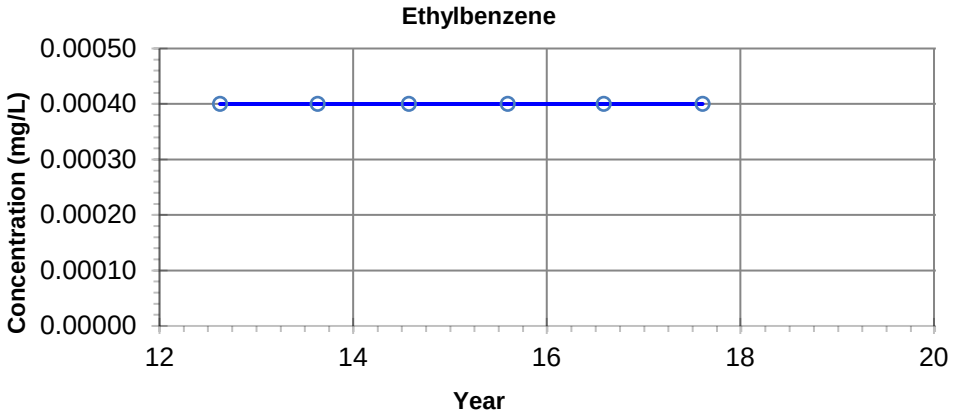

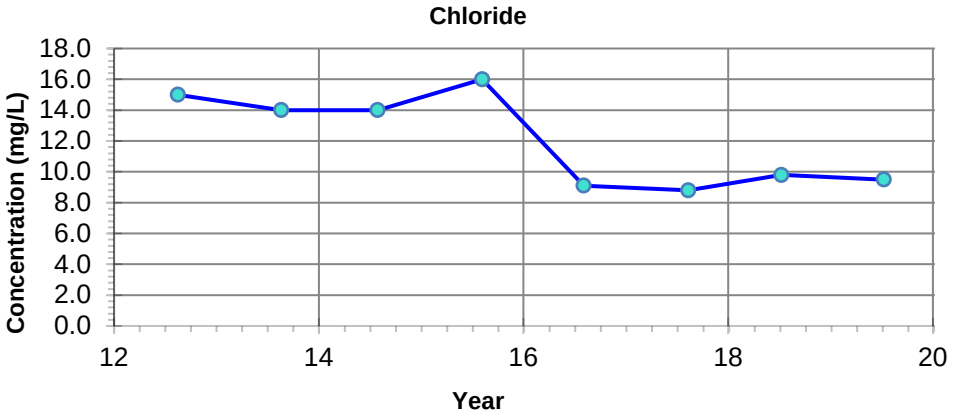

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: ARB-12-4-2

17-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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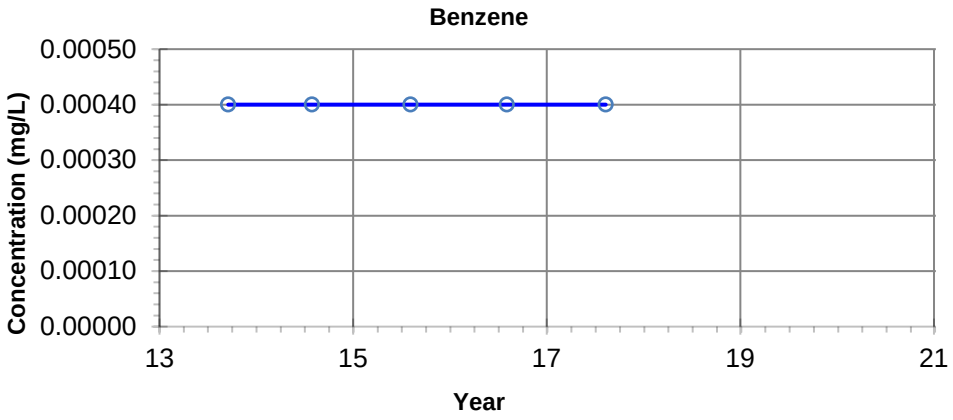

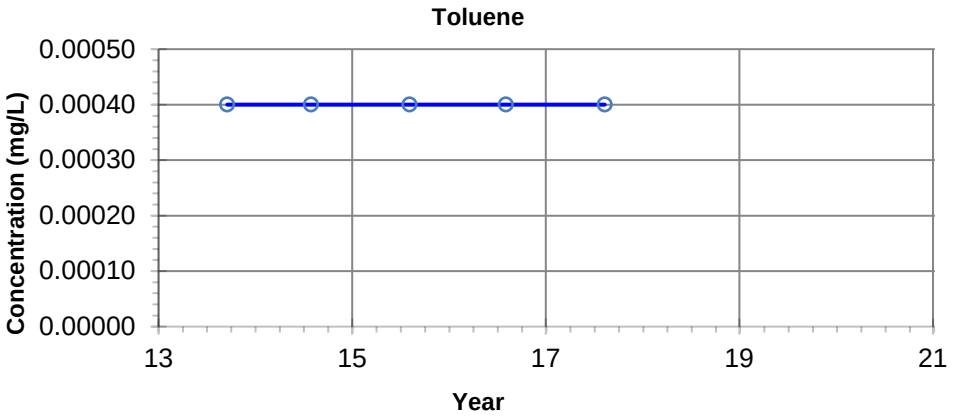

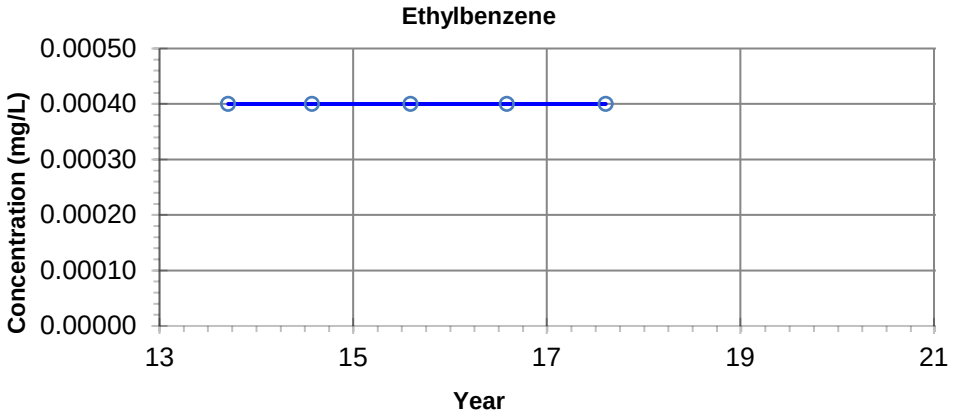

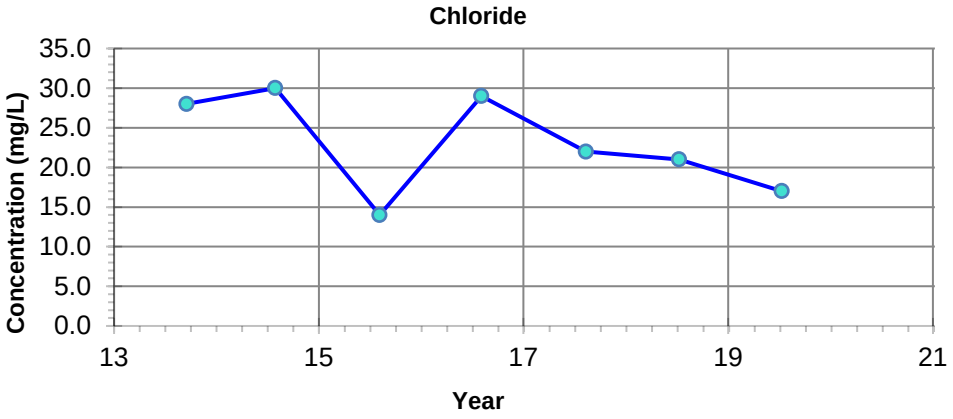

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: ARB-13-1-4.5

17-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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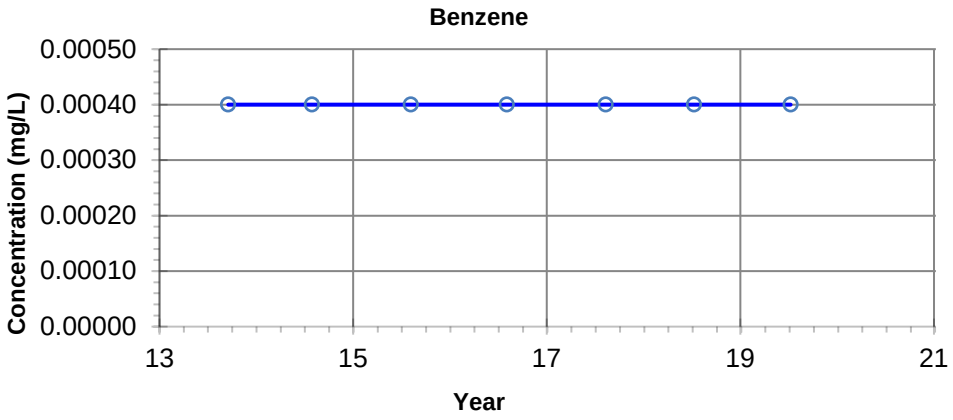

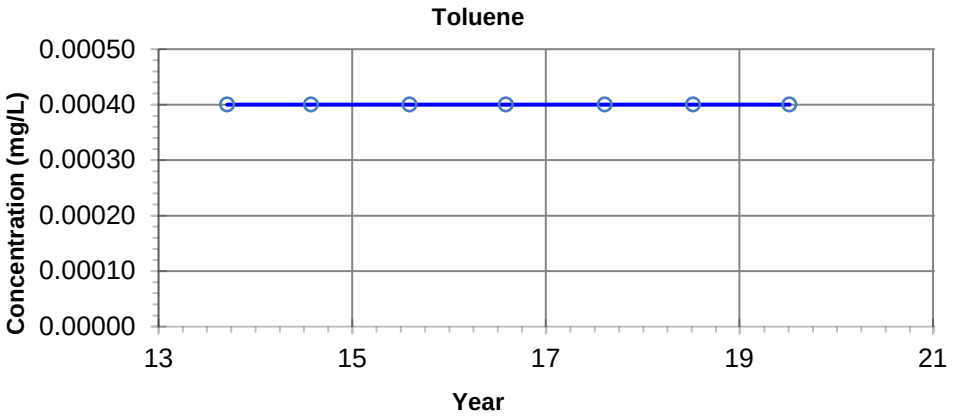

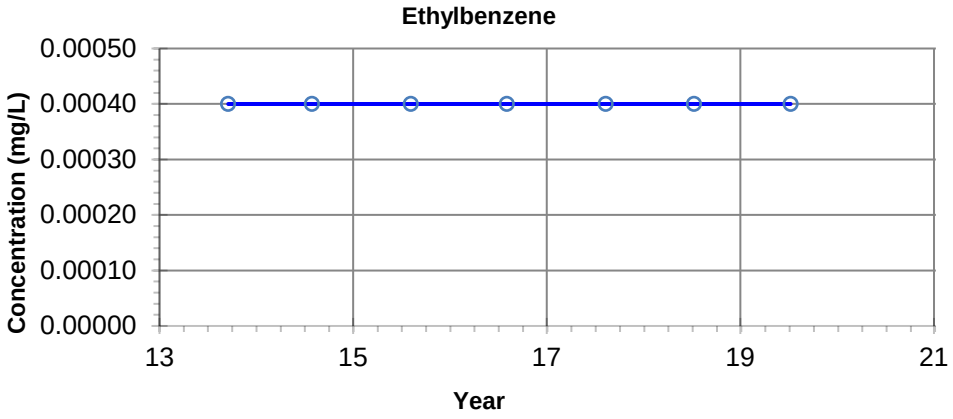

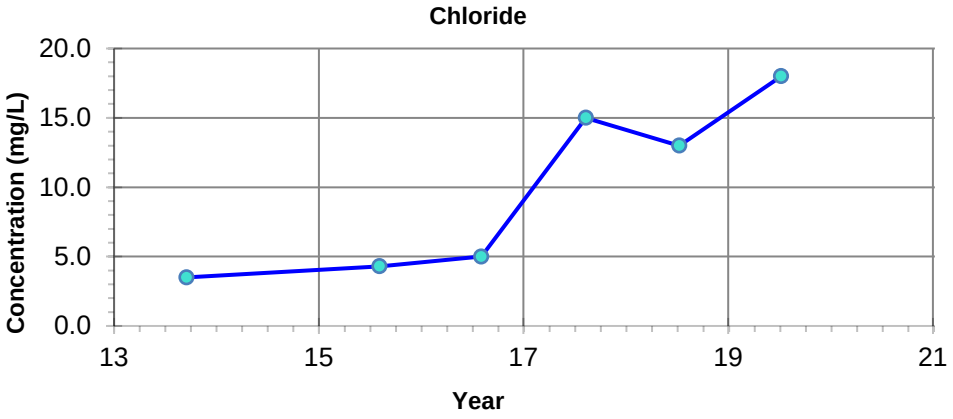

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: ARB-13-3-4.5

17-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

PROJECT NUMBER:
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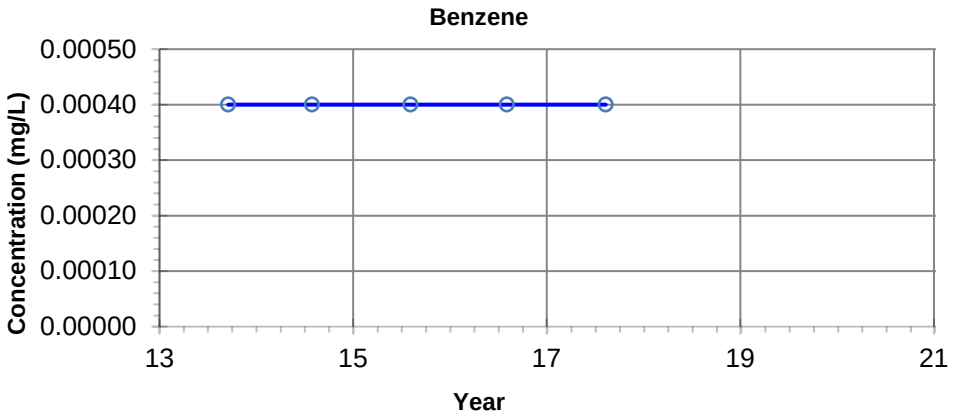

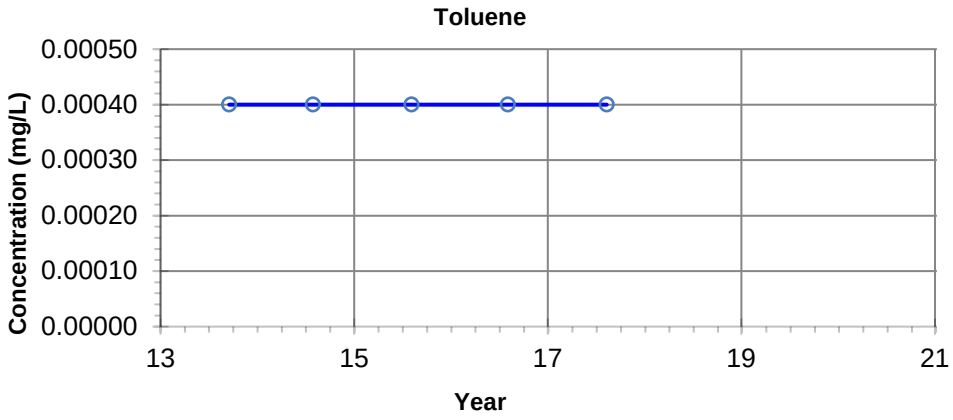

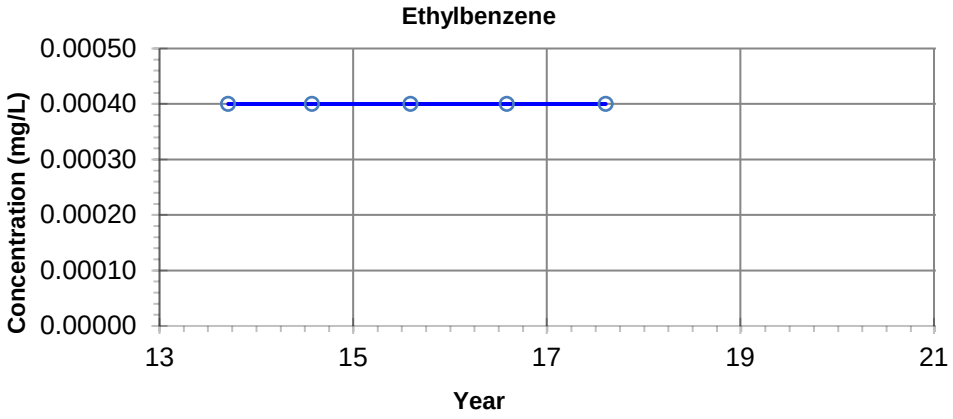

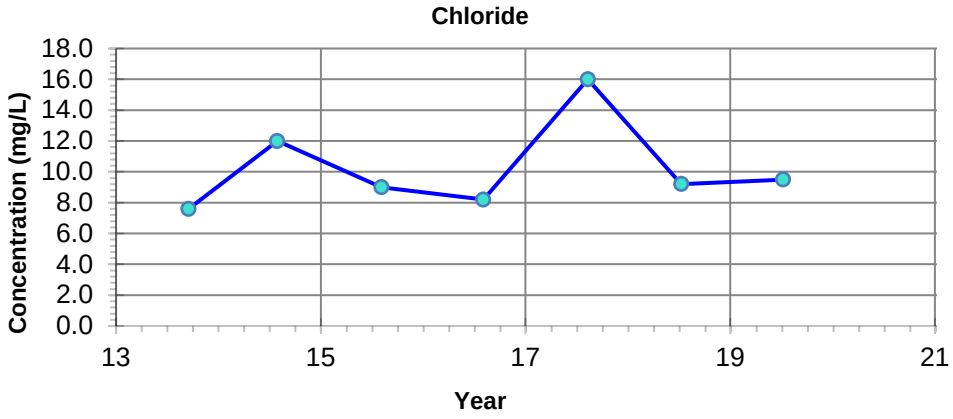

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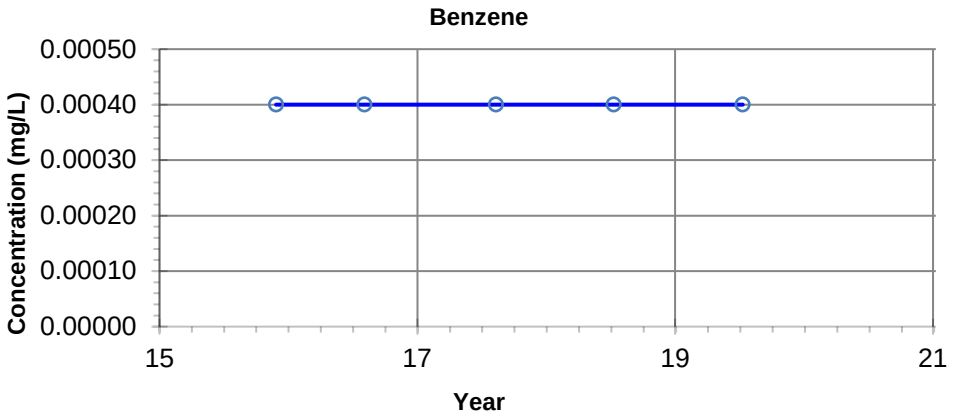

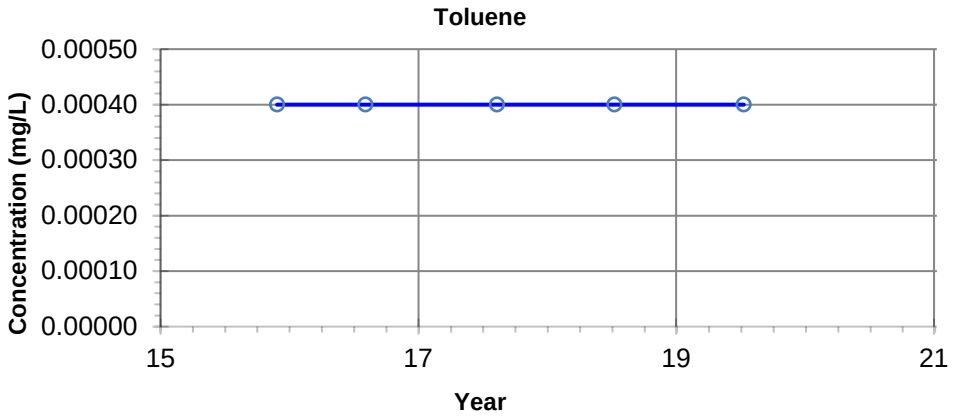

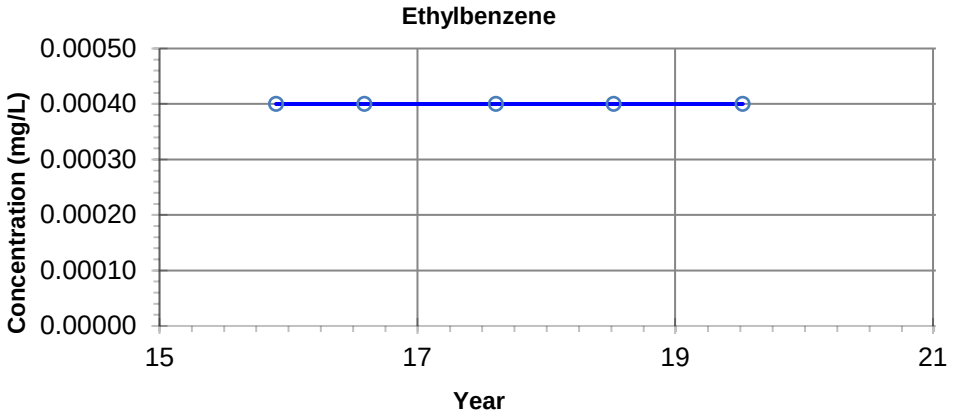

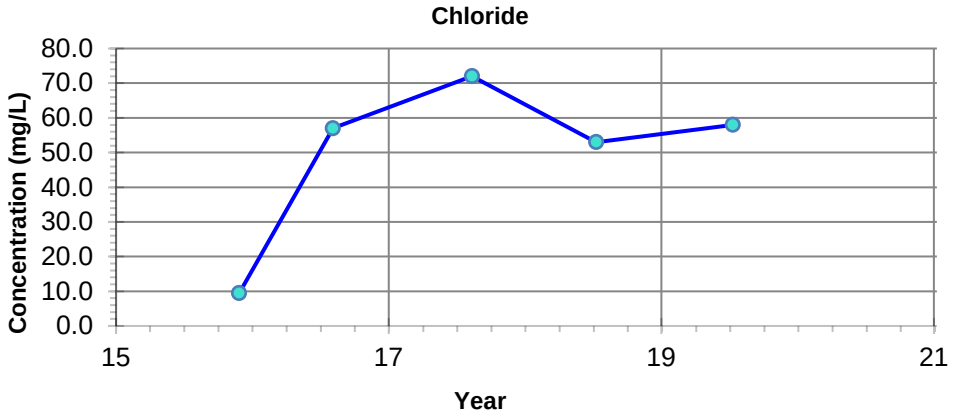

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Petroleum Hydrocarbon and Chloride Concentrations
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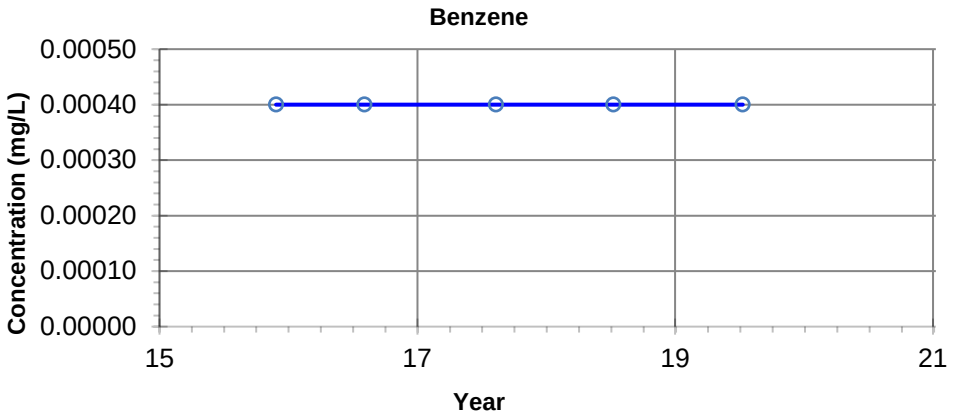

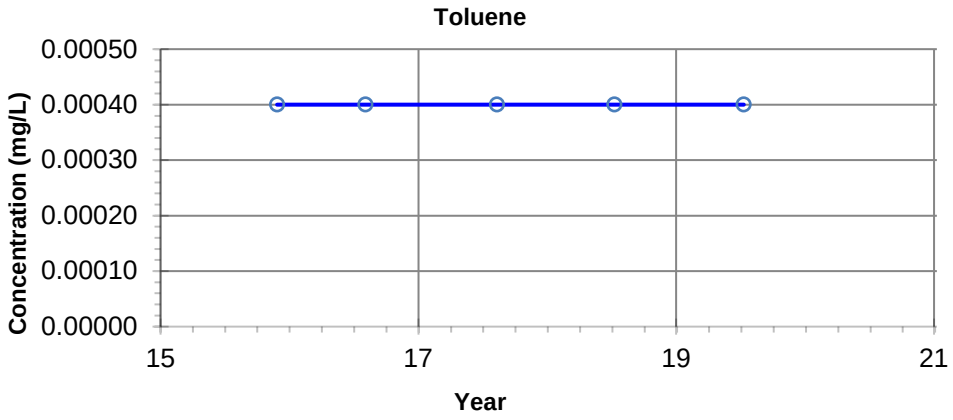

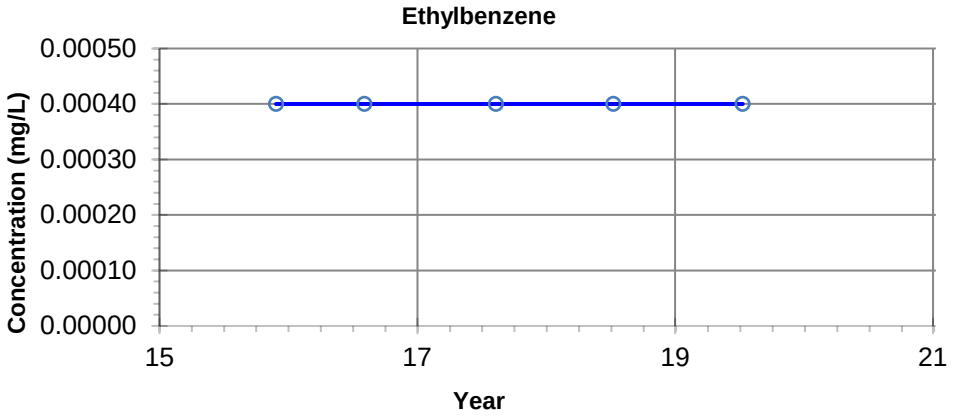

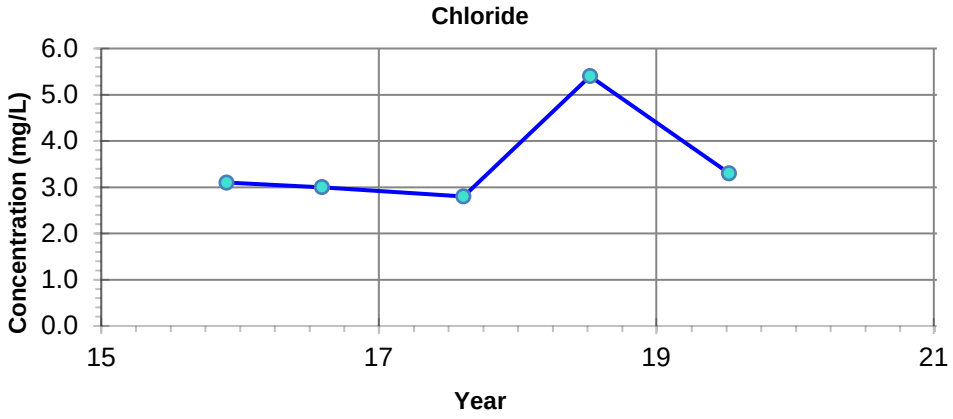

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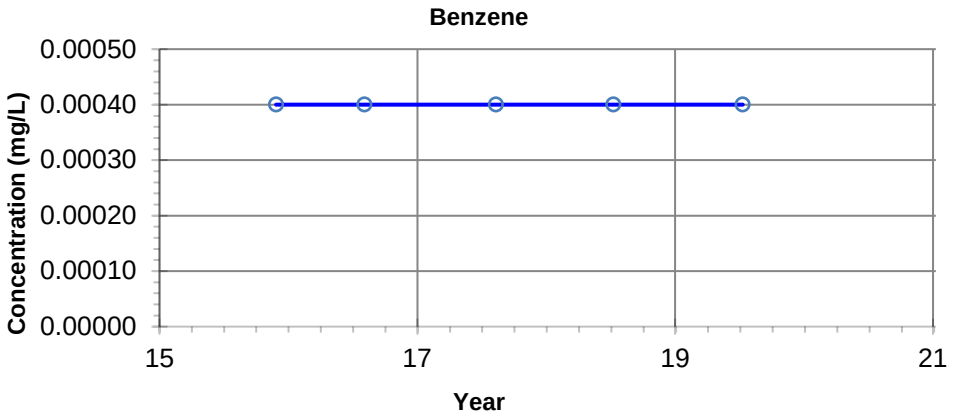

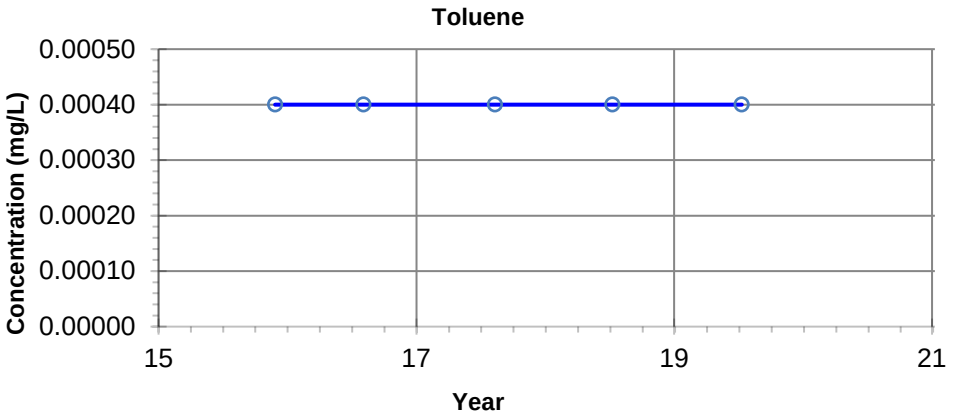

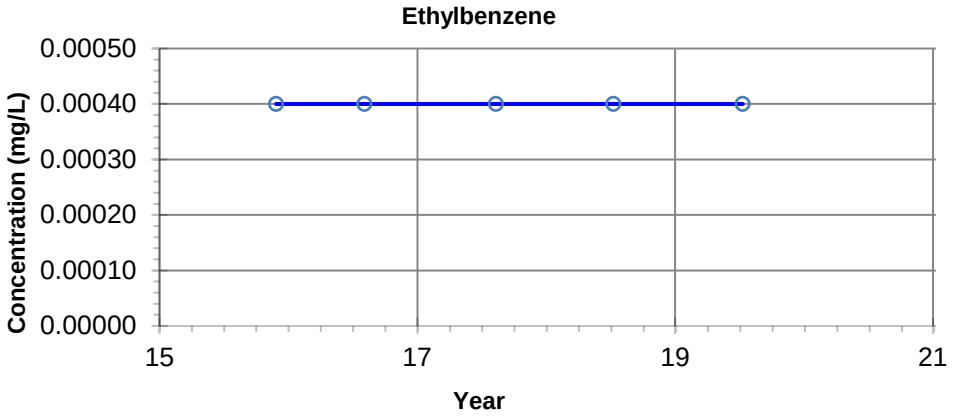

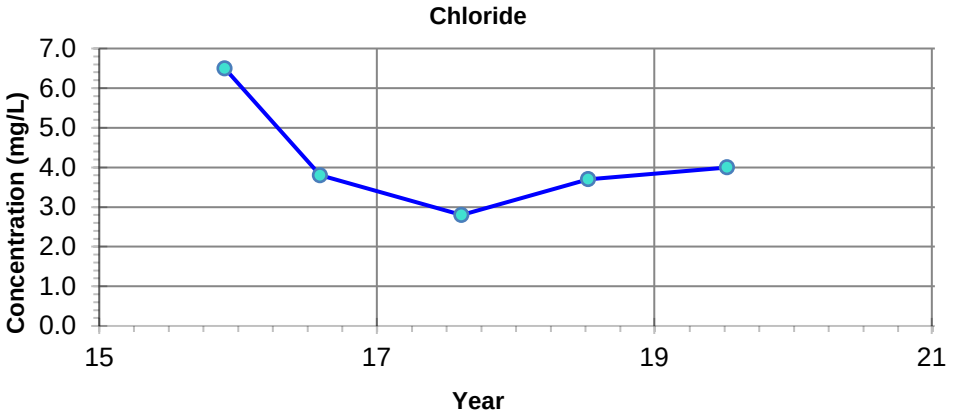

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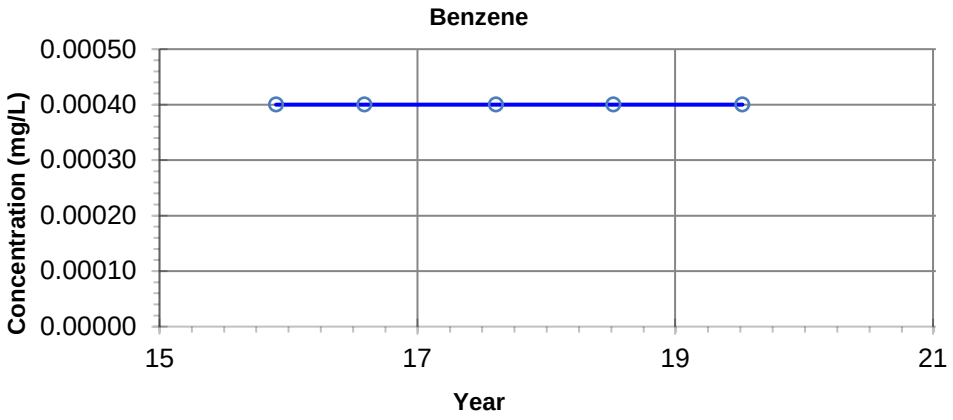

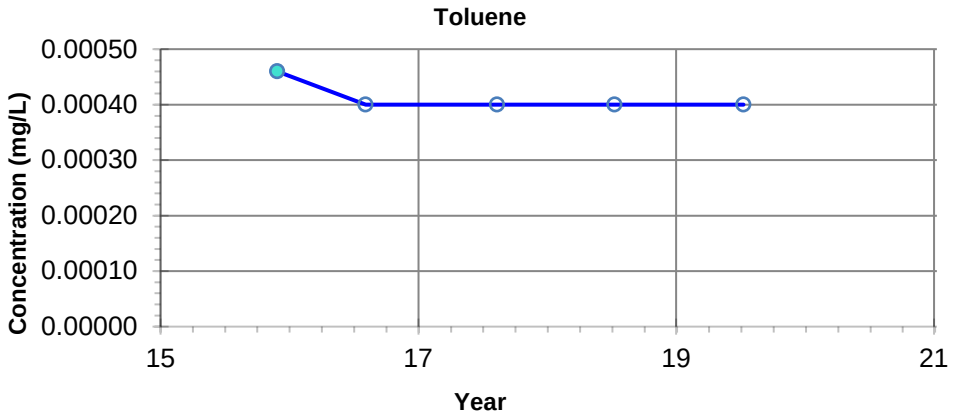

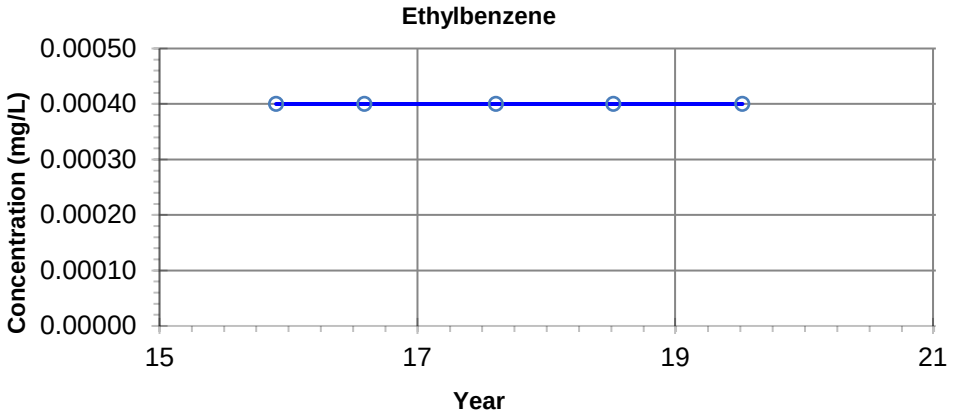

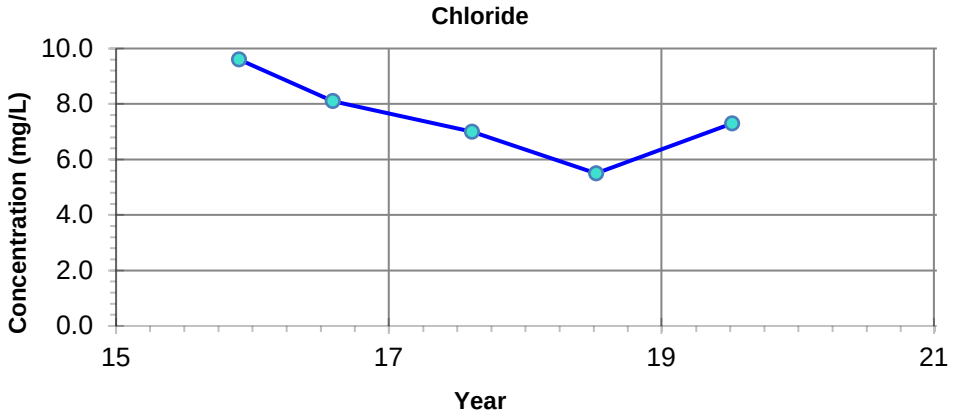

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
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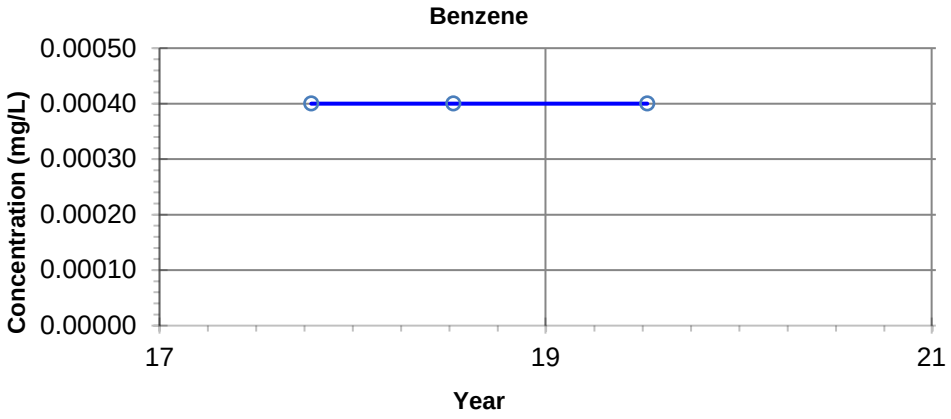

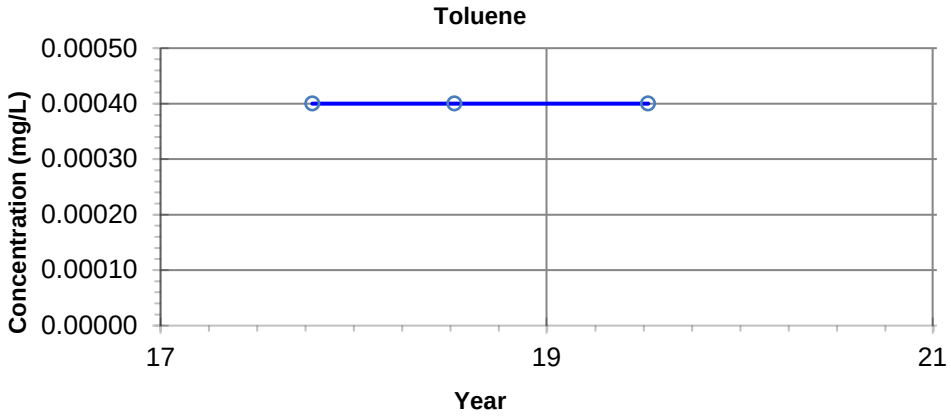

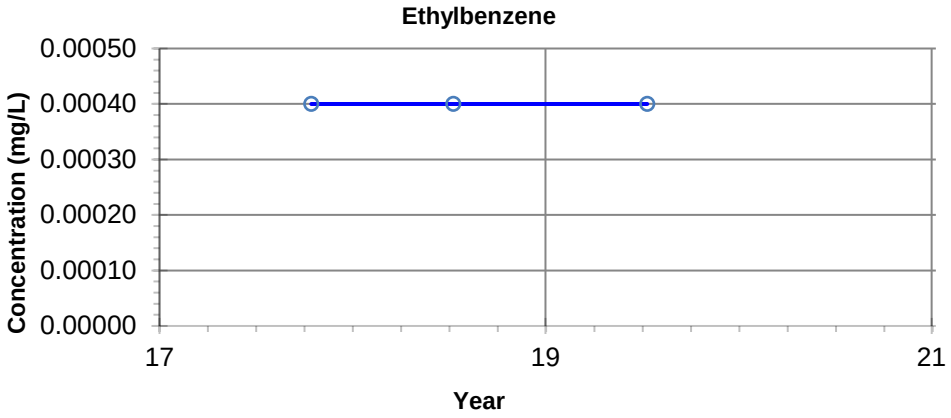

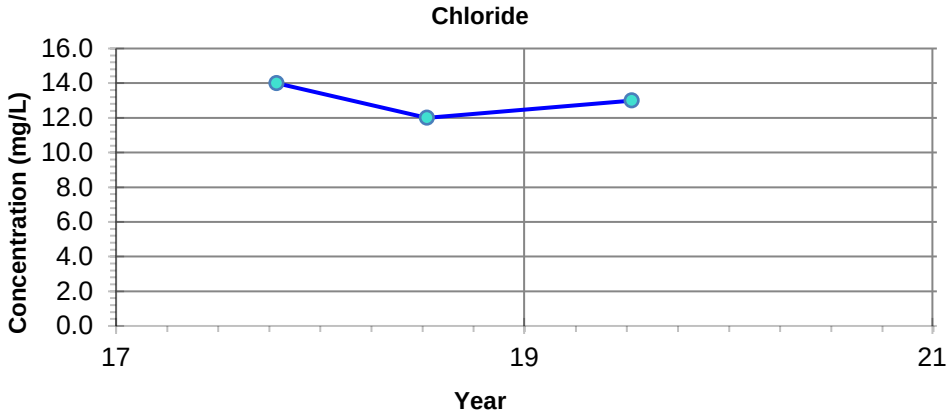

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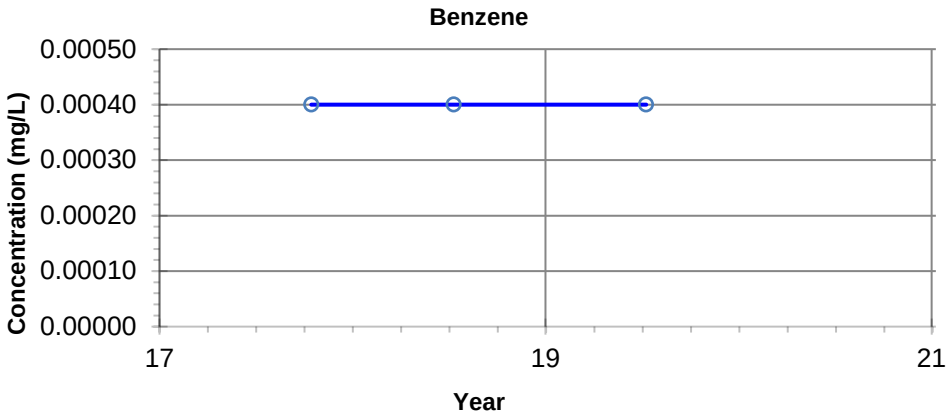

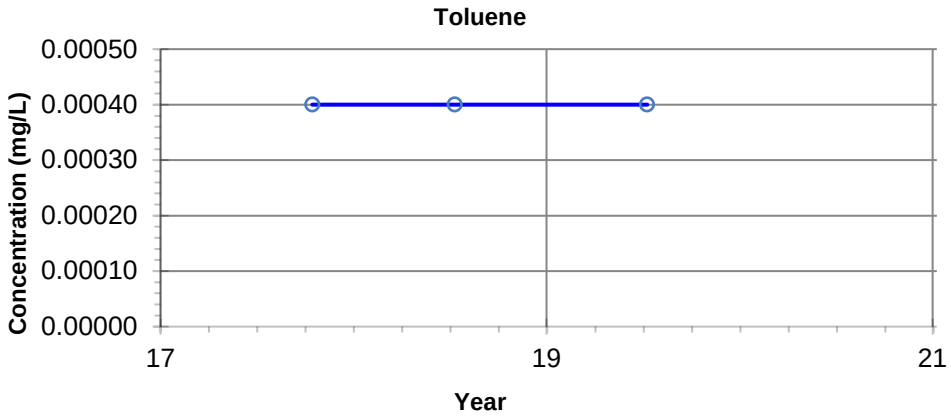

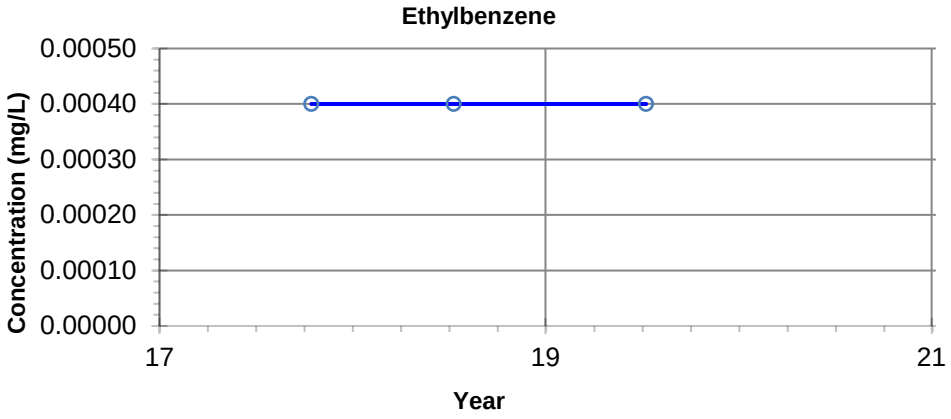

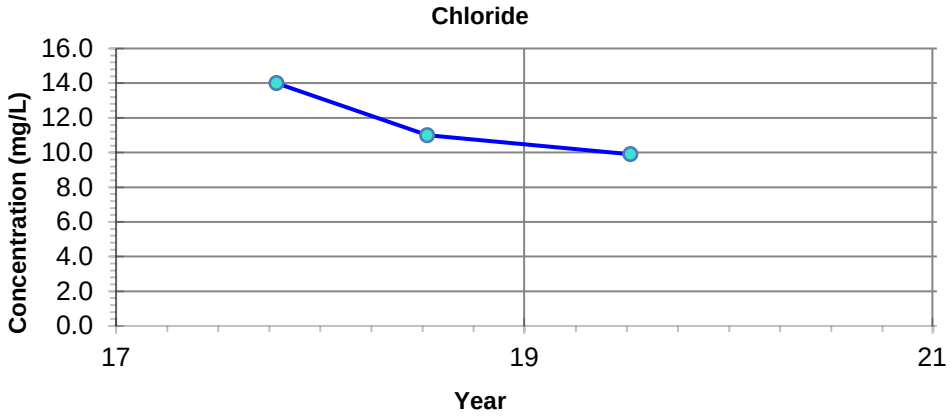

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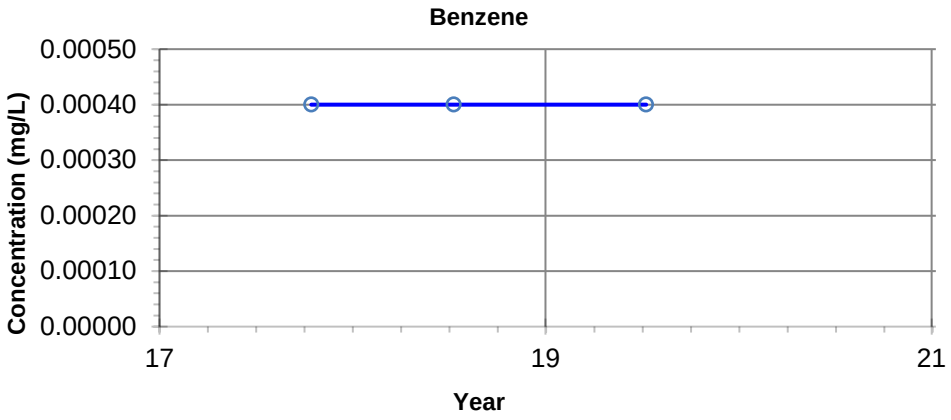

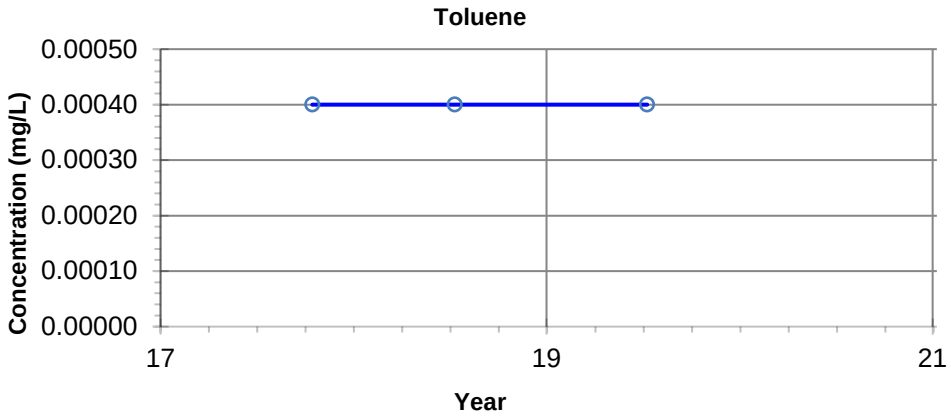

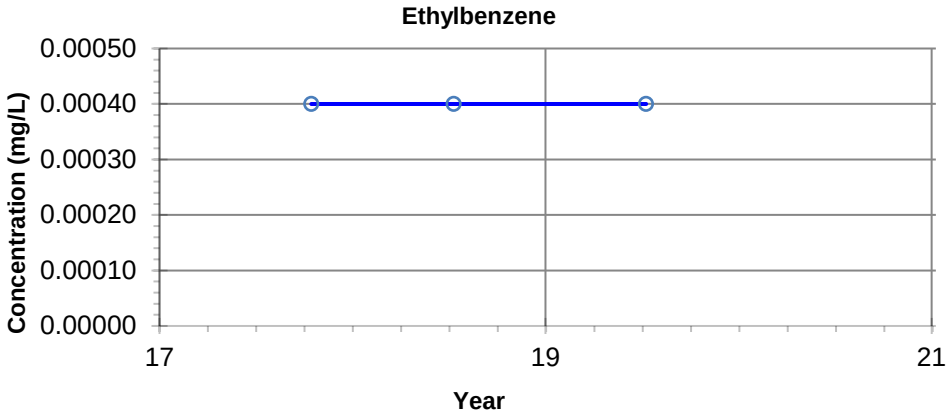

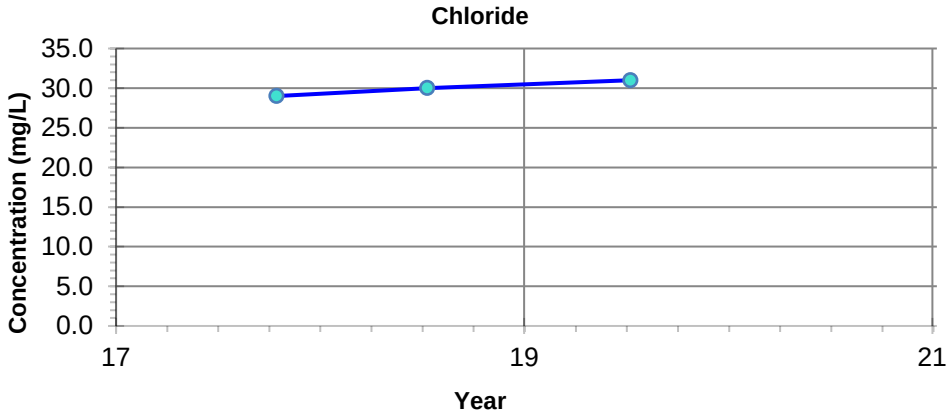

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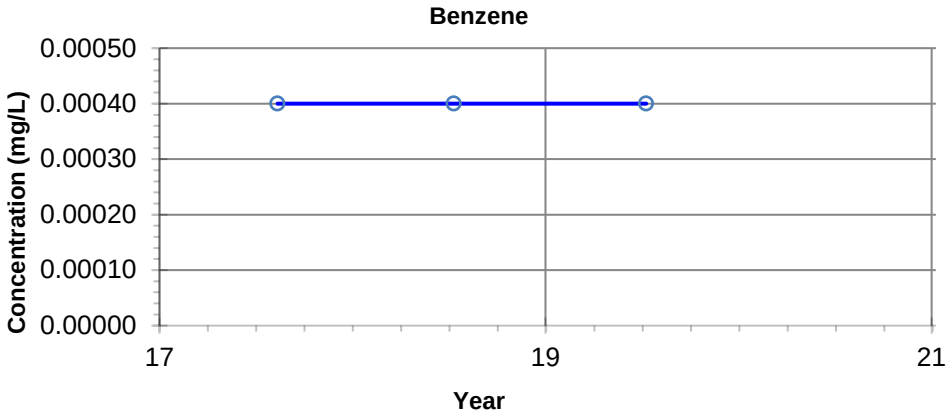

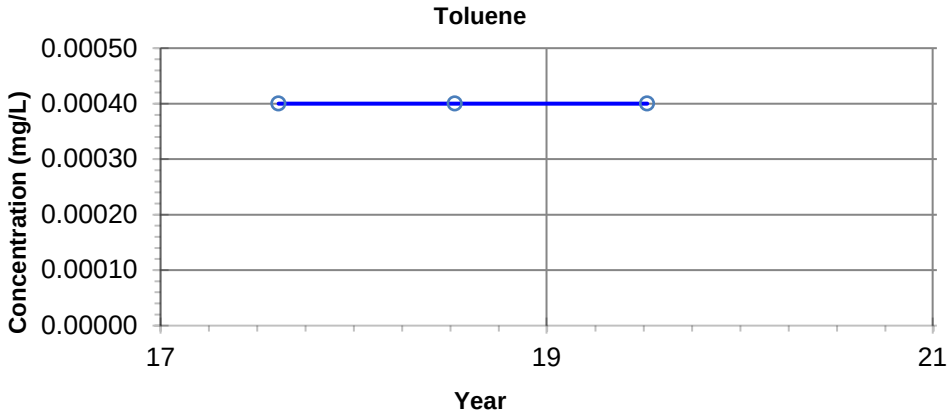

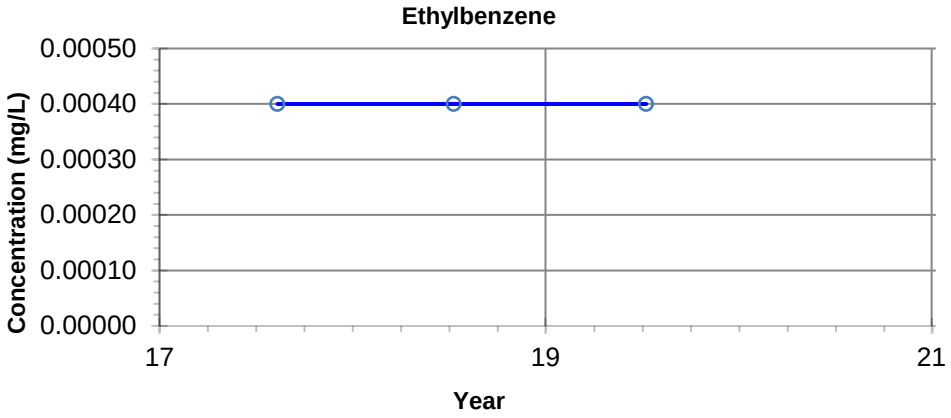

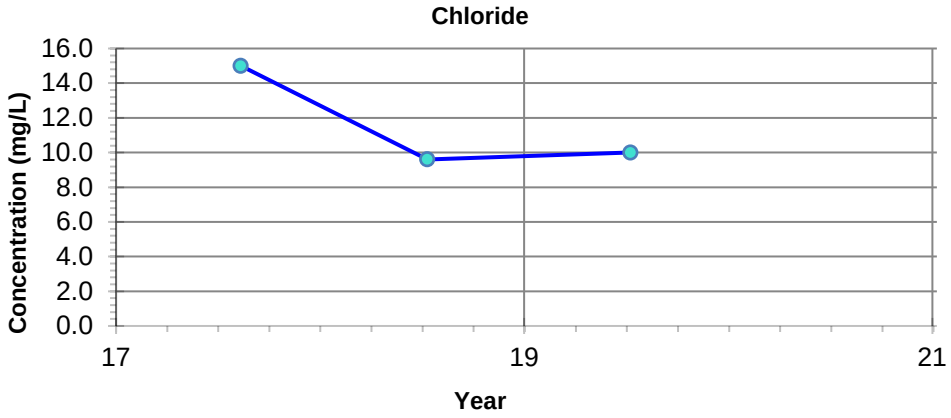

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: ARB-17-SW01

17-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

PROJECT NUMBER:
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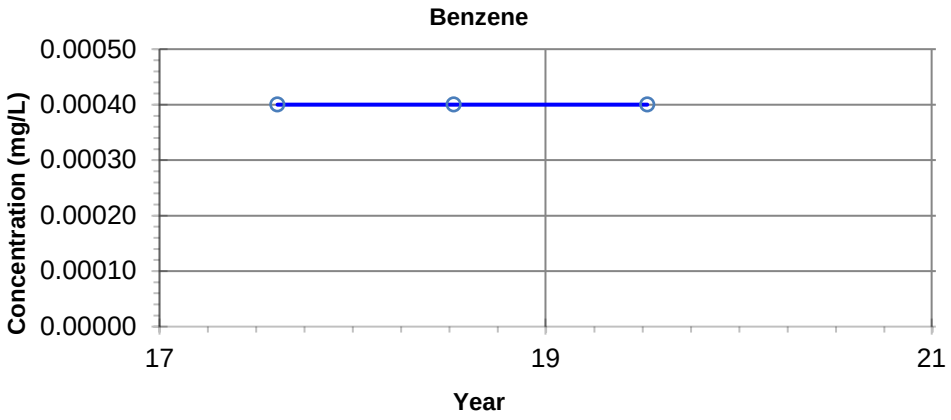

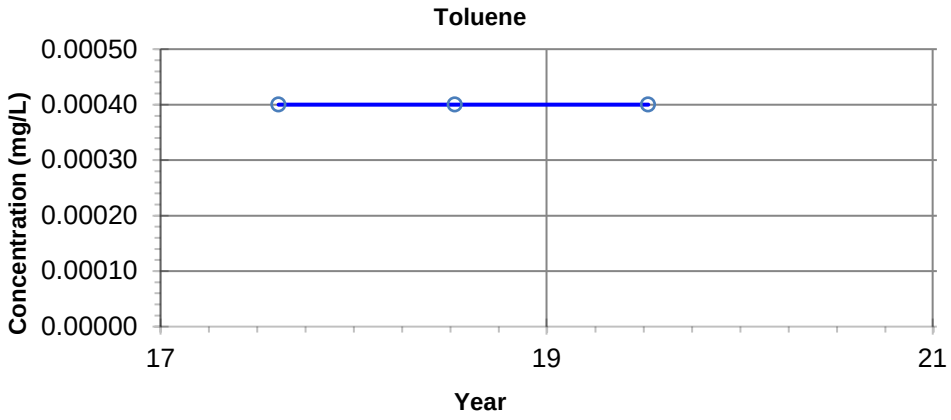

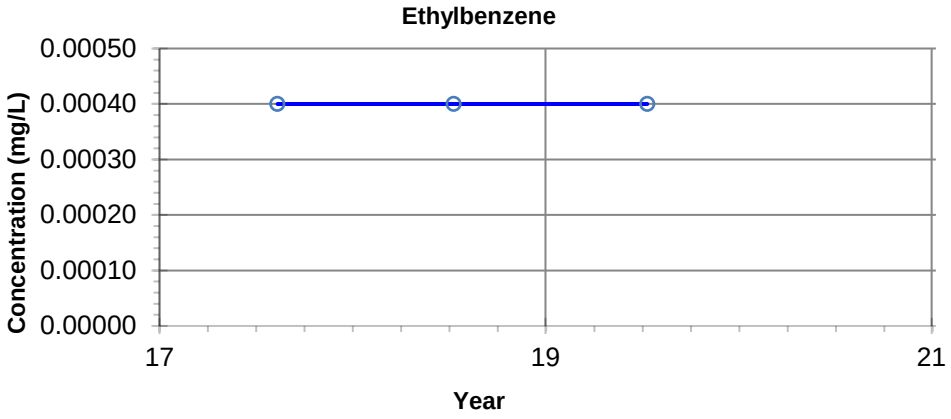

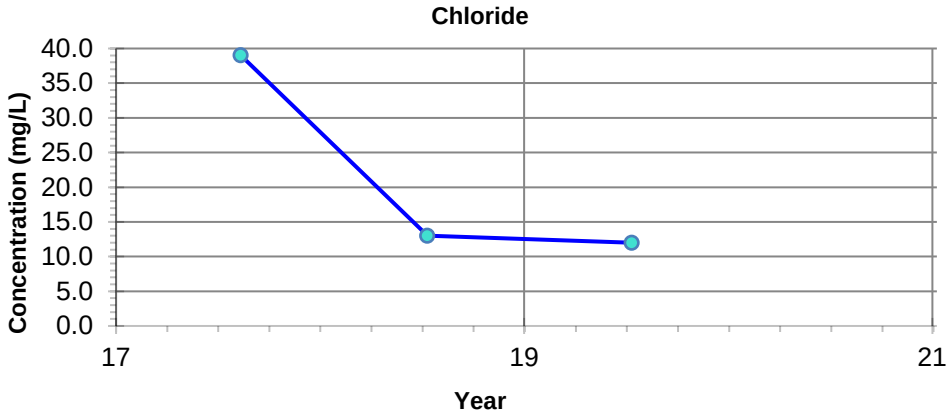

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: ARB-17-SW02

17-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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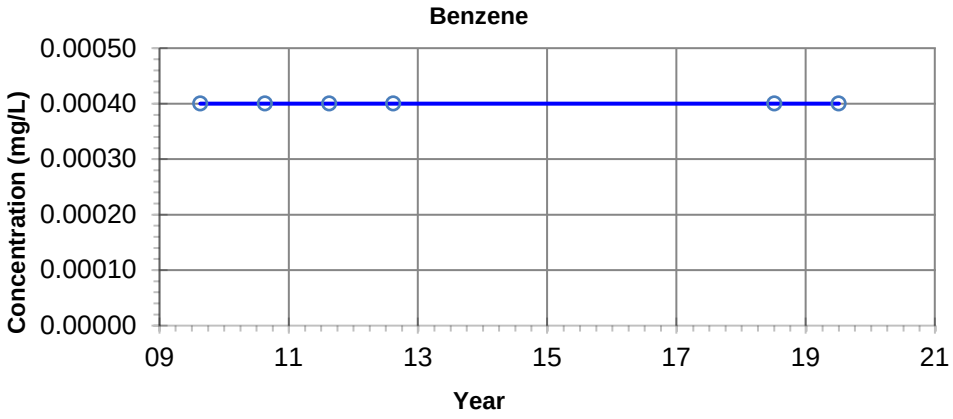

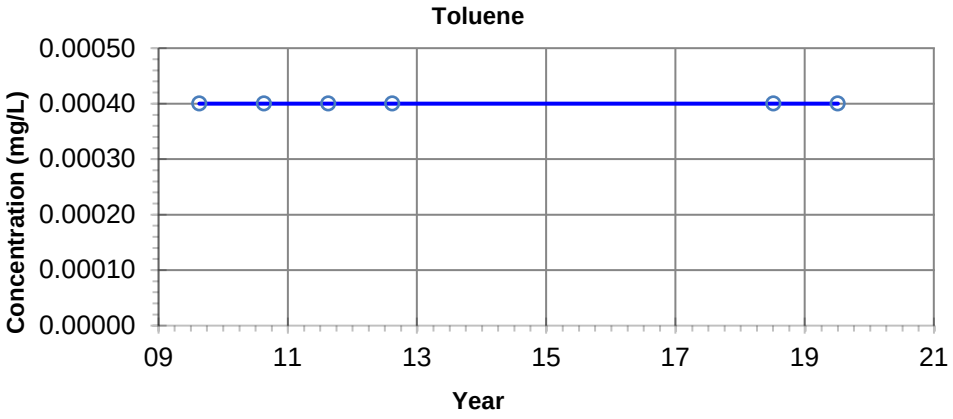

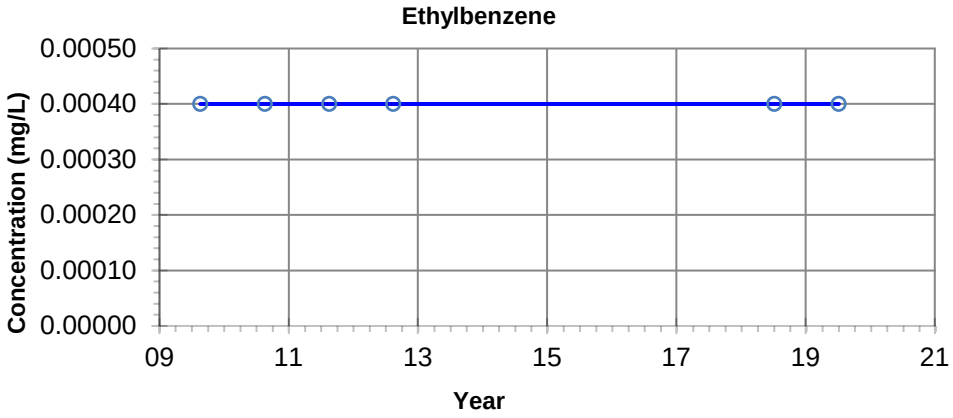

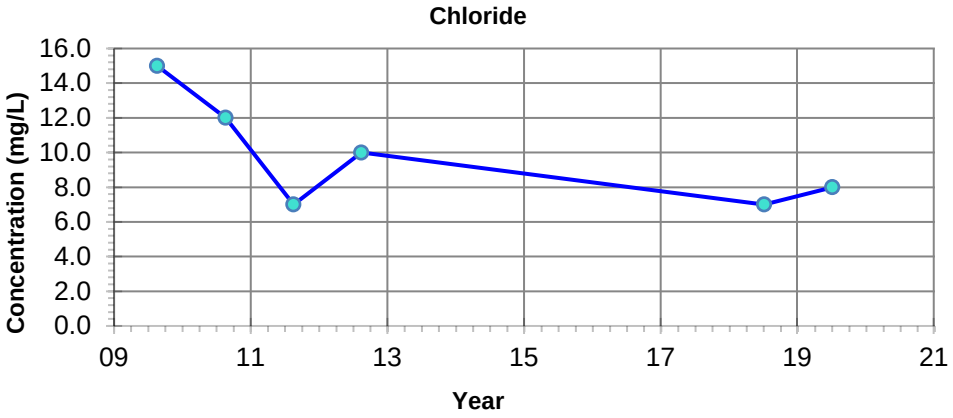

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2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: OPB 09-2-4

17-Mar-2020 date	NA edited by	JC drawn by	NA app by

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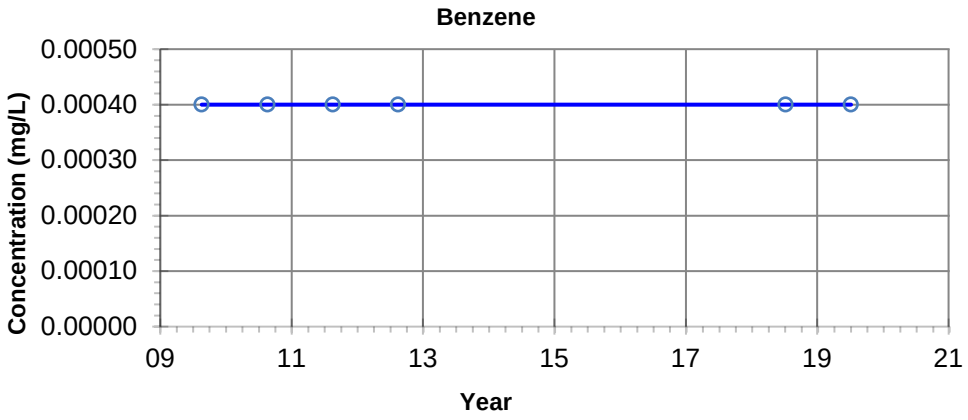

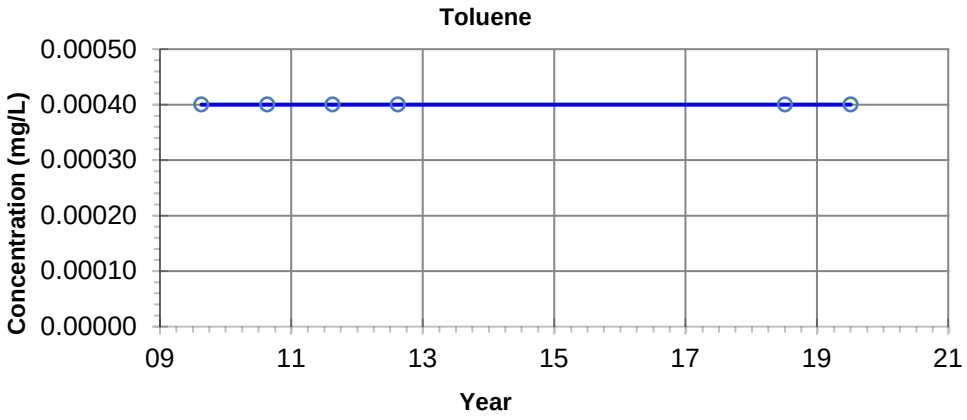

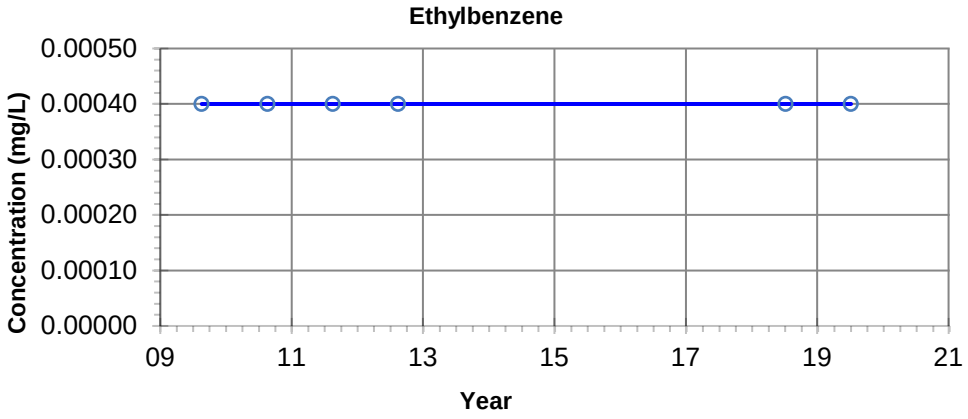

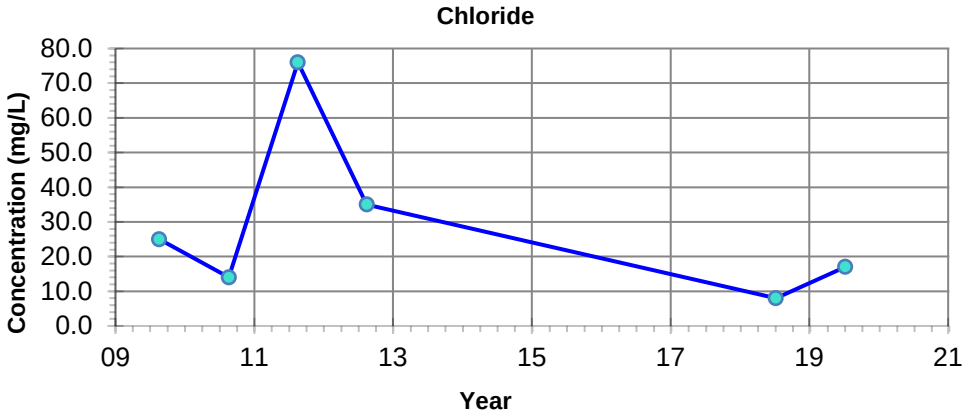

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Petroleum Hydrocarbon and Chloride Concentrations
Location: OPB 09-3-4

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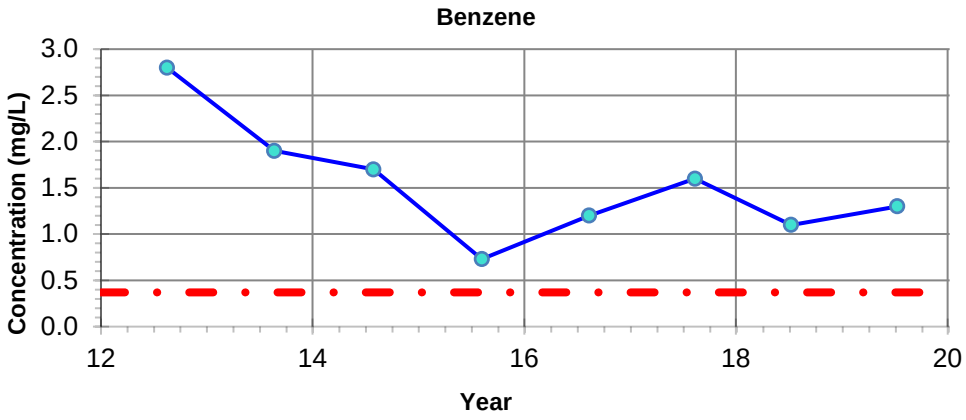

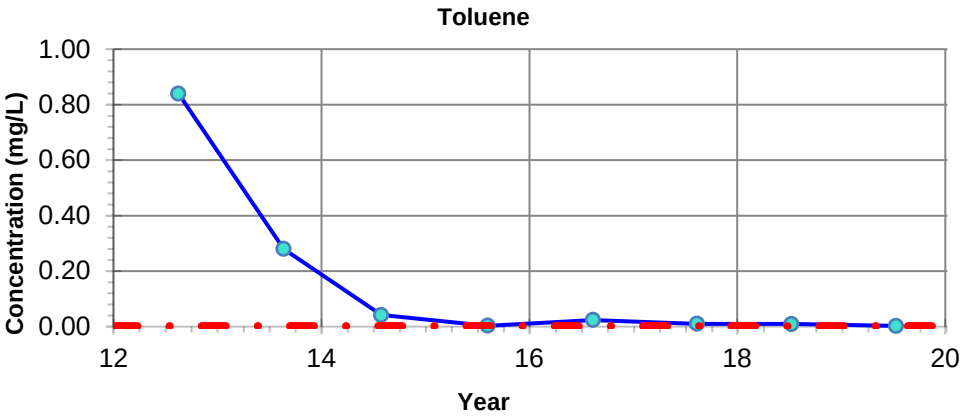

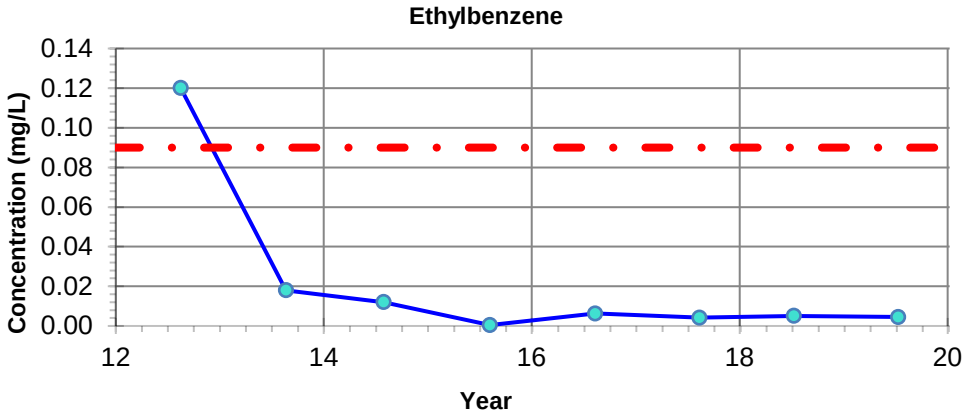

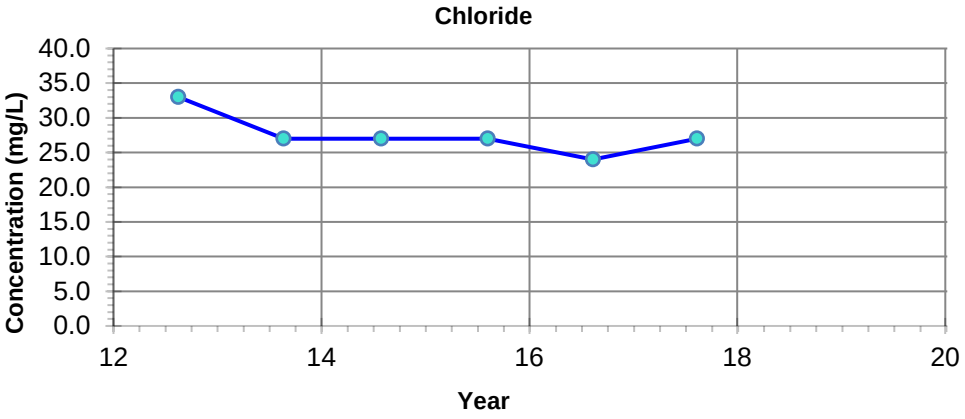

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2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B30X-12-1-4

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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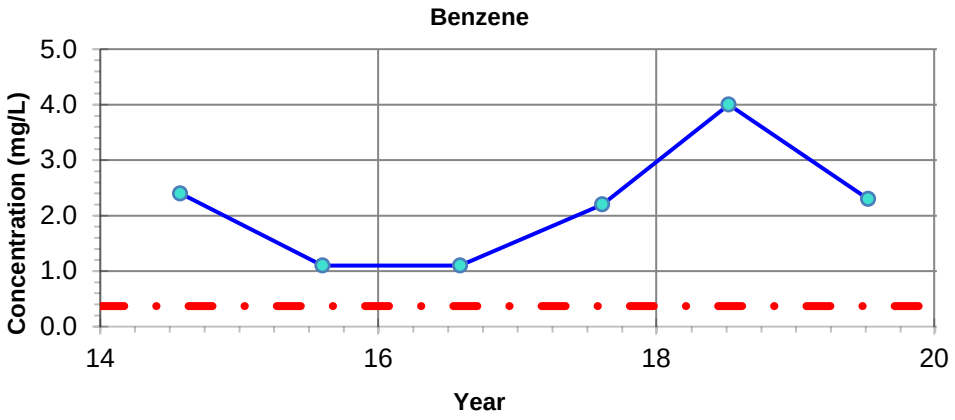

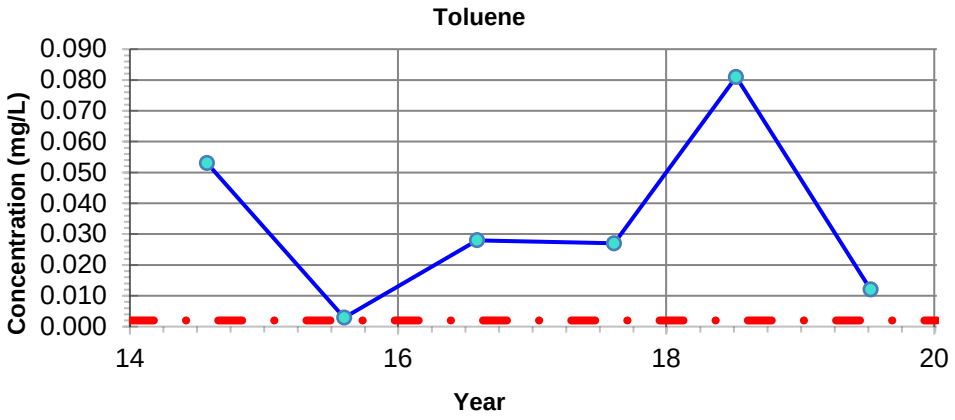

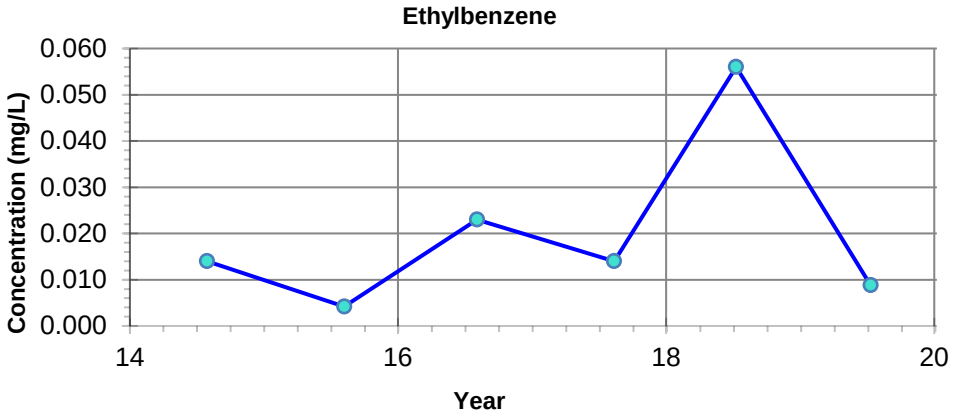

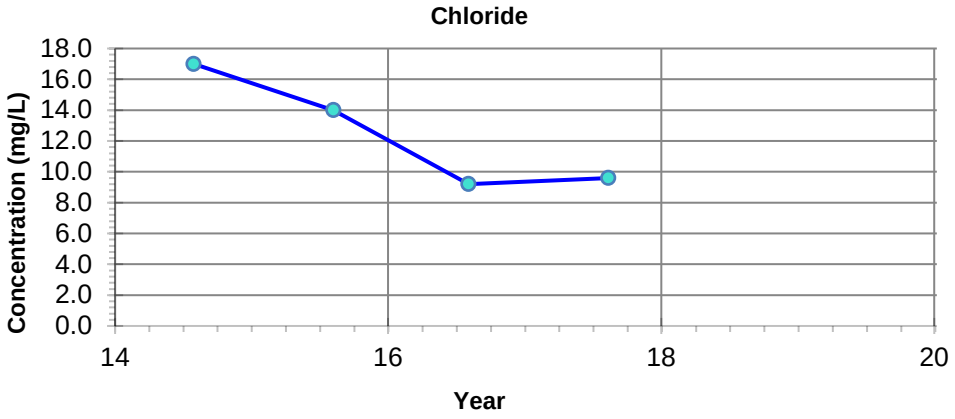

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2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B30X-12-2-4

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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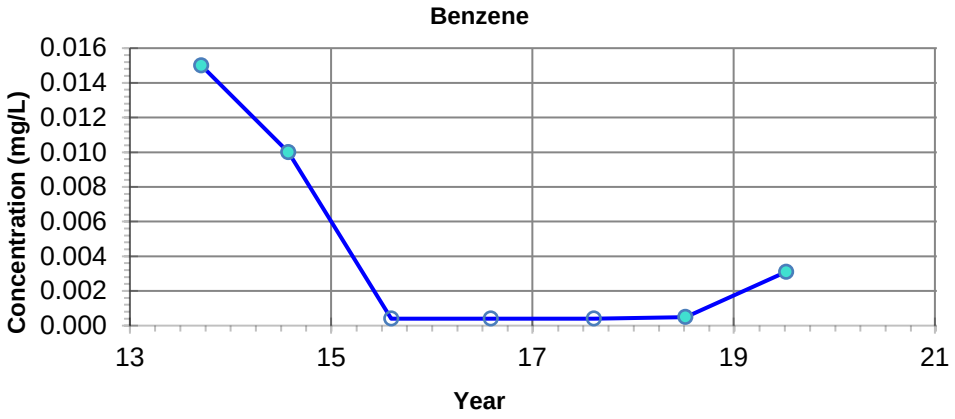

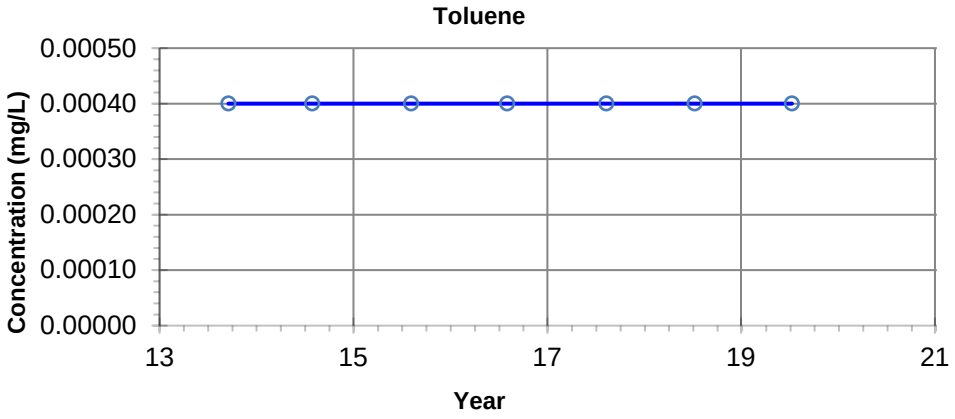

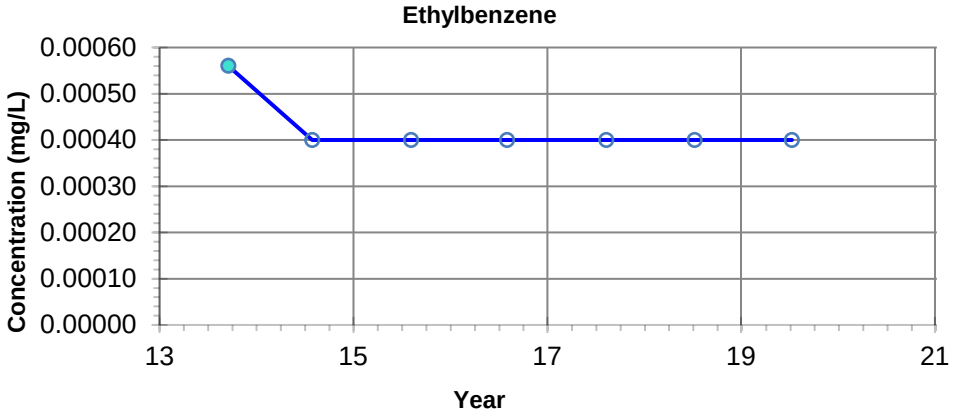

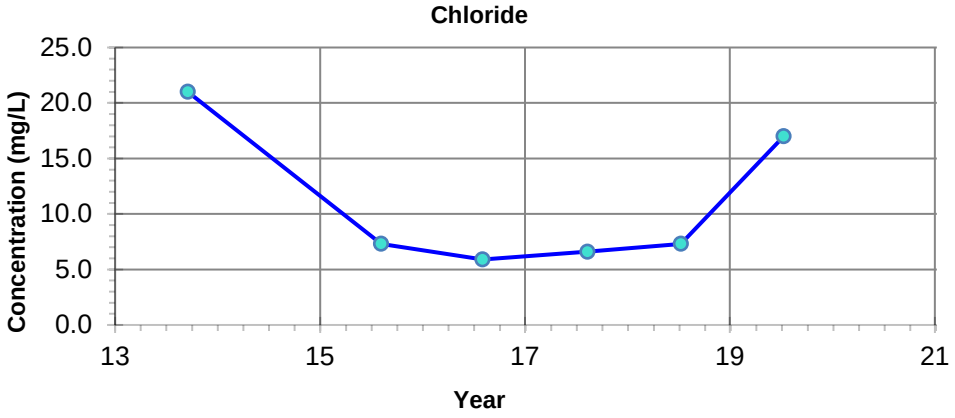

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B30-13-1-5.4

20-Mar-2020 date	NA edited by	JC drawn by	NA app by

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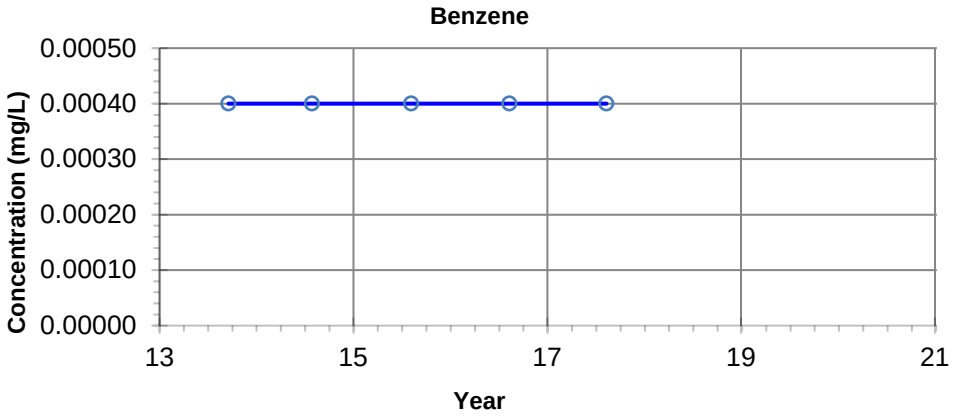

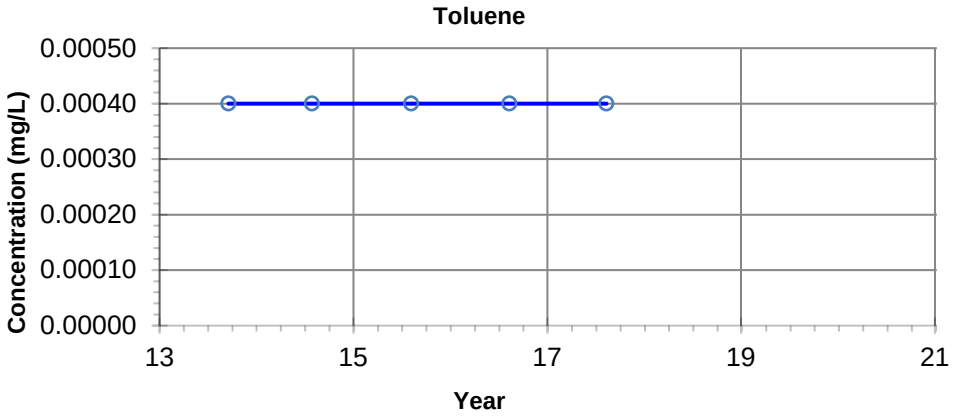

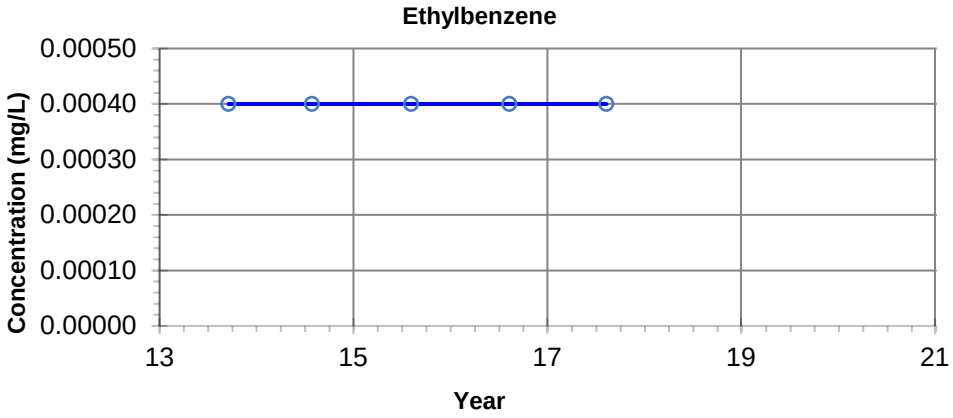

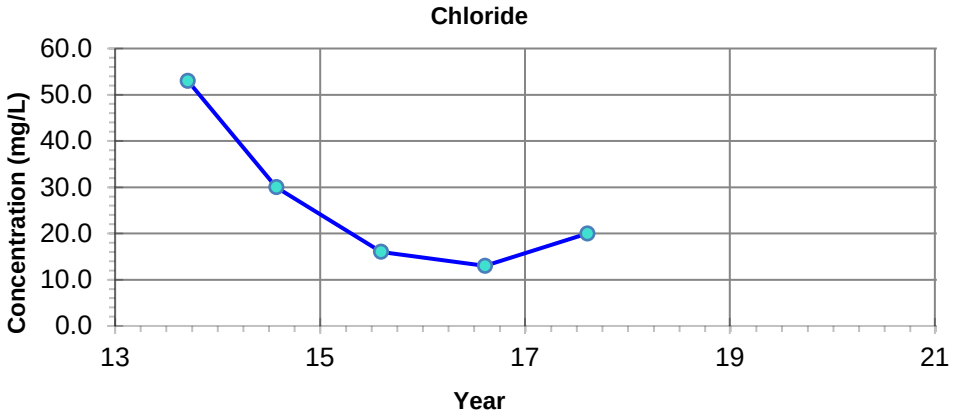

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B30-13-2-4.5

20-Mar-2020 date	NA edited by	JC drawn by	NA app by

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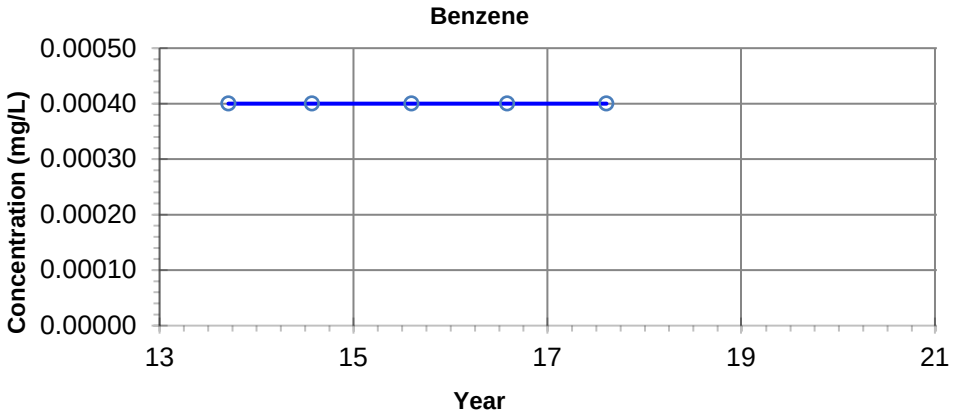

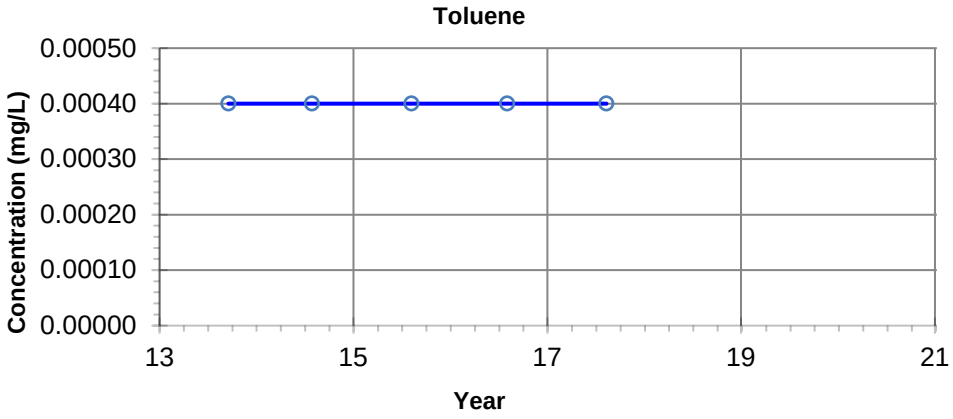

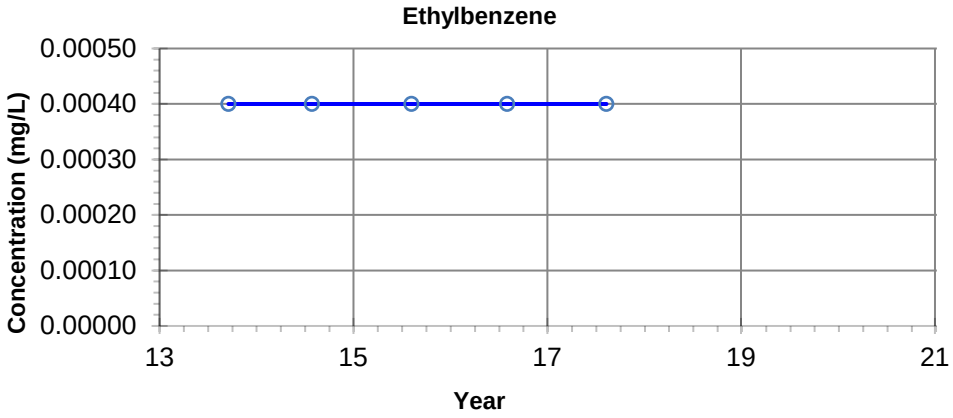

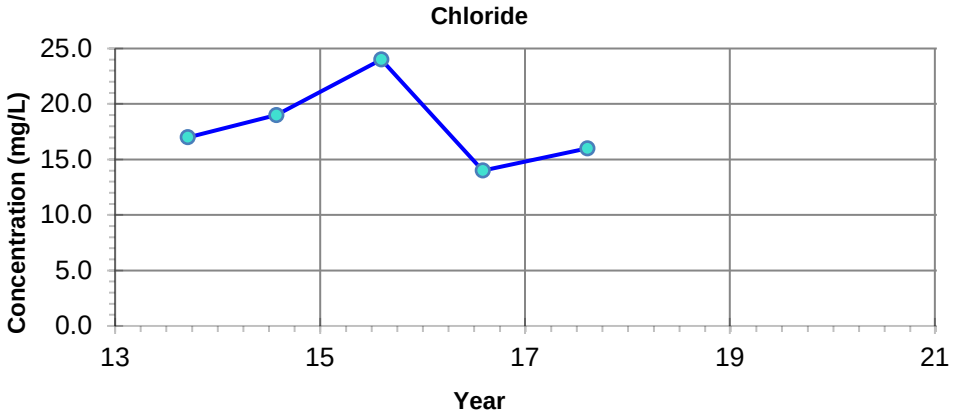

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Petroleum Hydrocarbon and Chloride Concentrations
Location: B30-13-3-4.5

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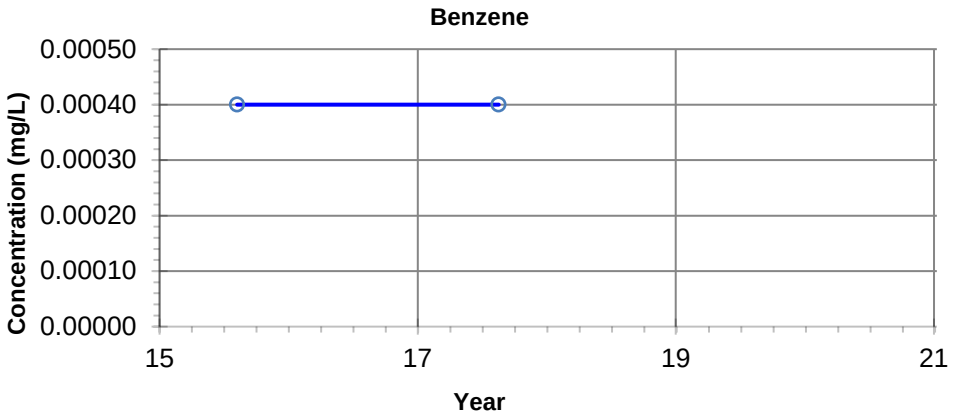

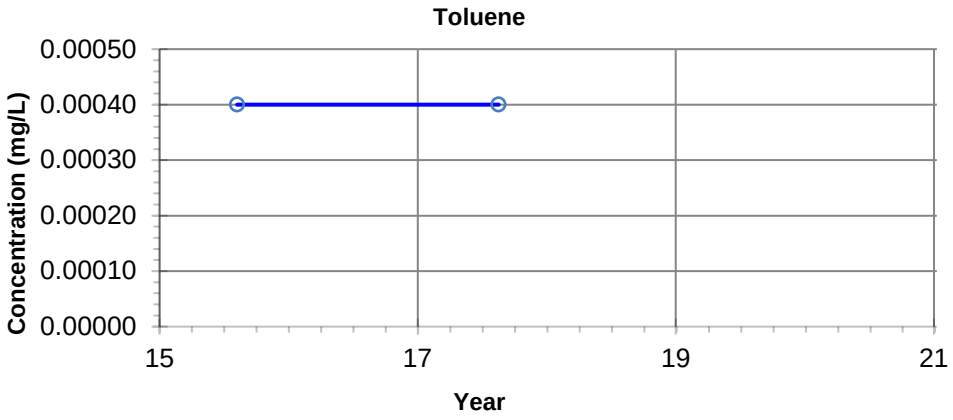

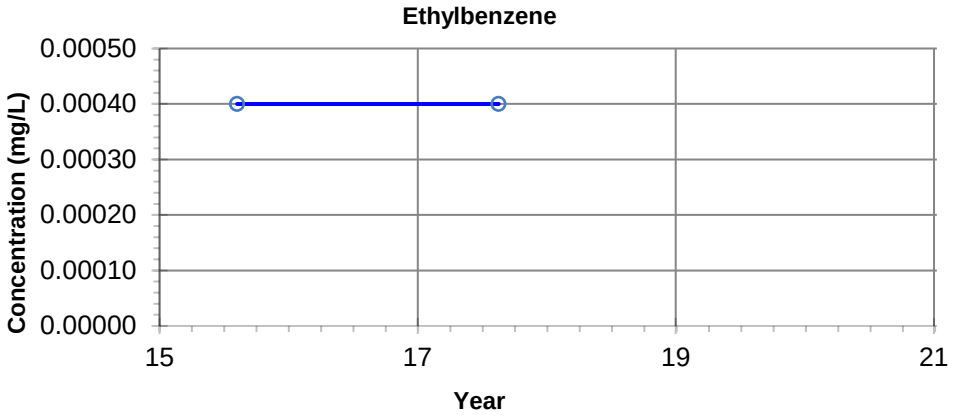

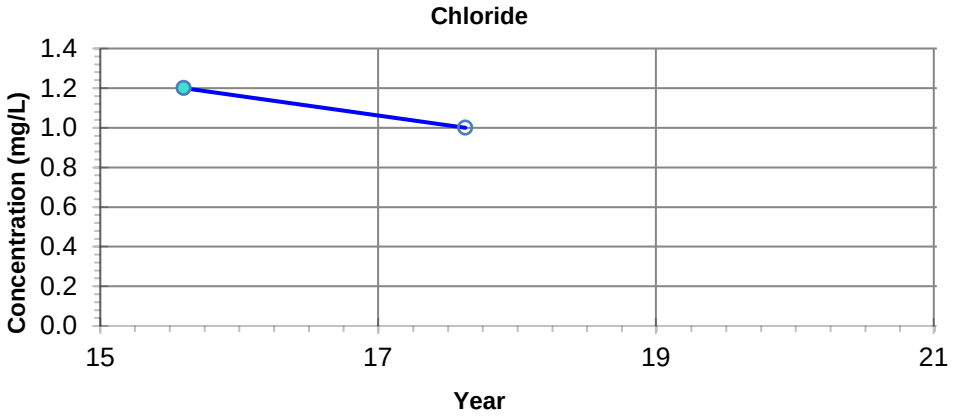

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Imperial Oil Resources
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Petroleum Hydrocarbon and Chloride Concentrations
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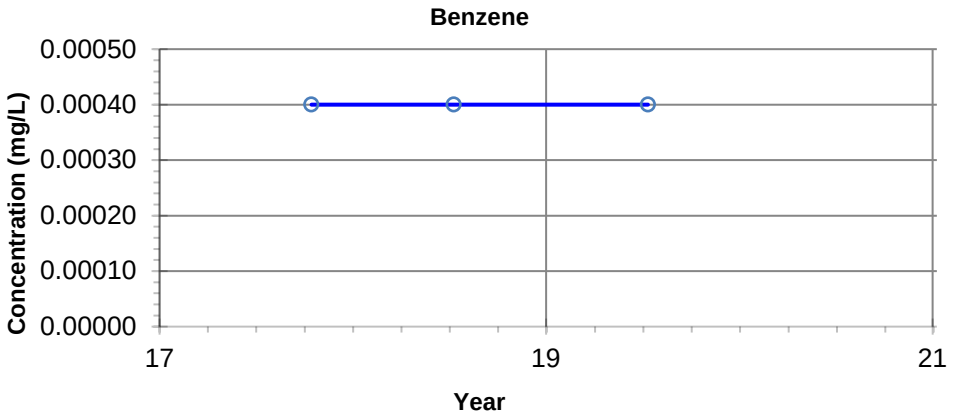

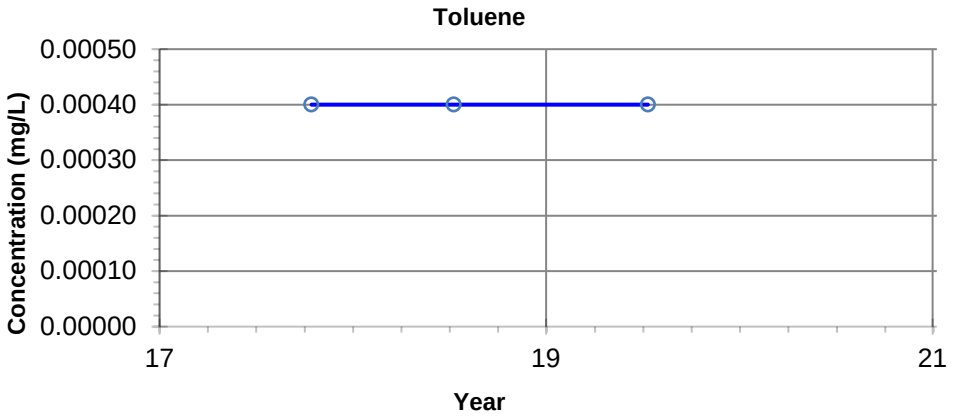

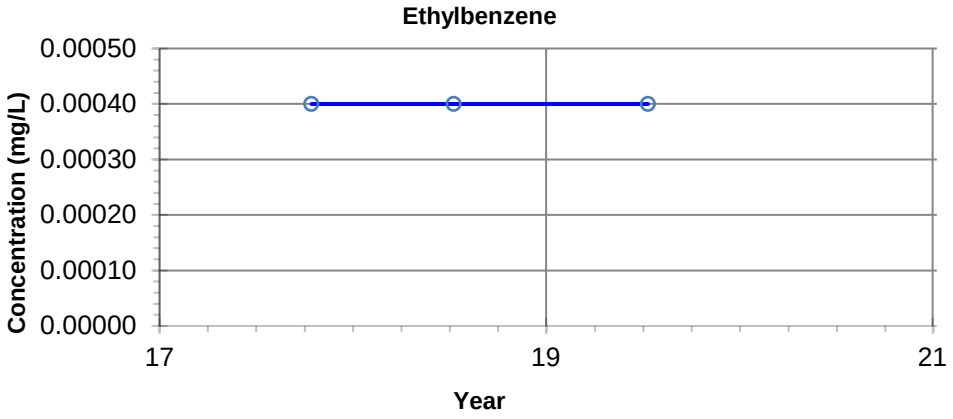

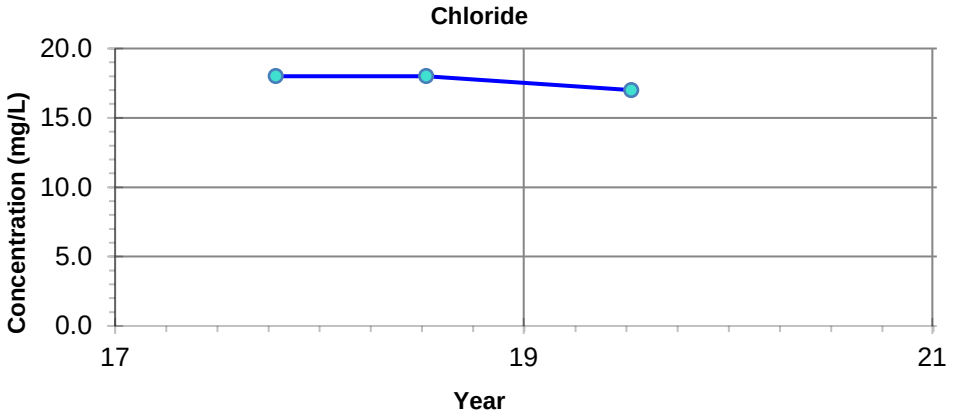

NOTES: - Filled symbols denote Sample Values
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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B30-17-1-5

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

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Worley Group

PROJECT NUMBER:
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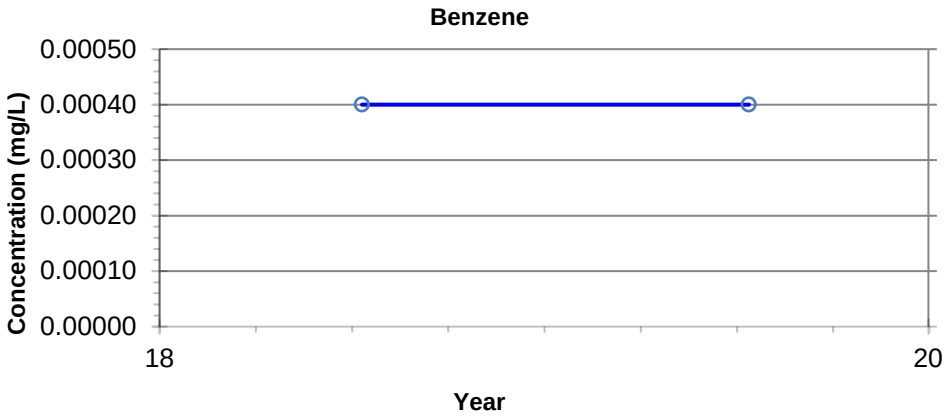

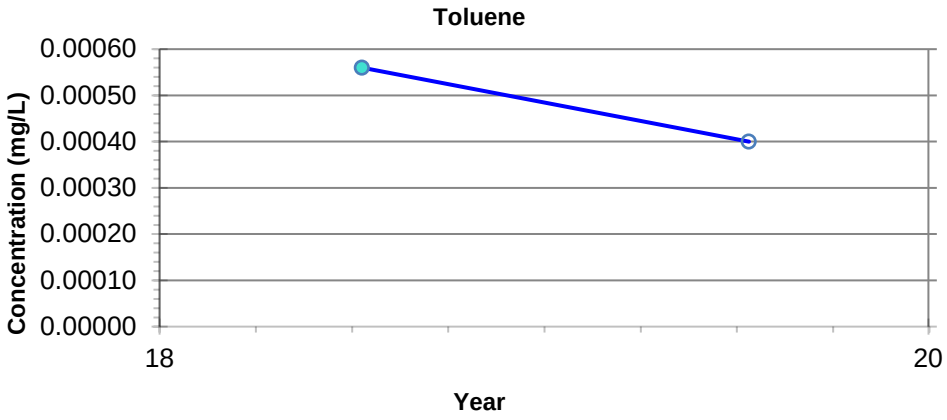

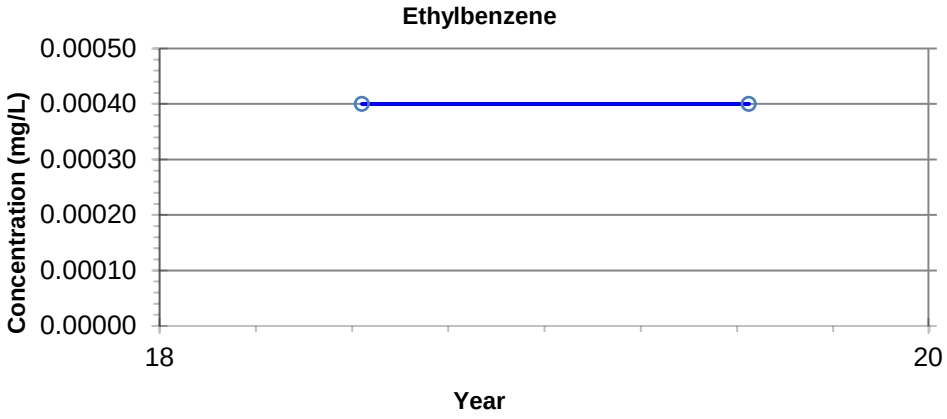

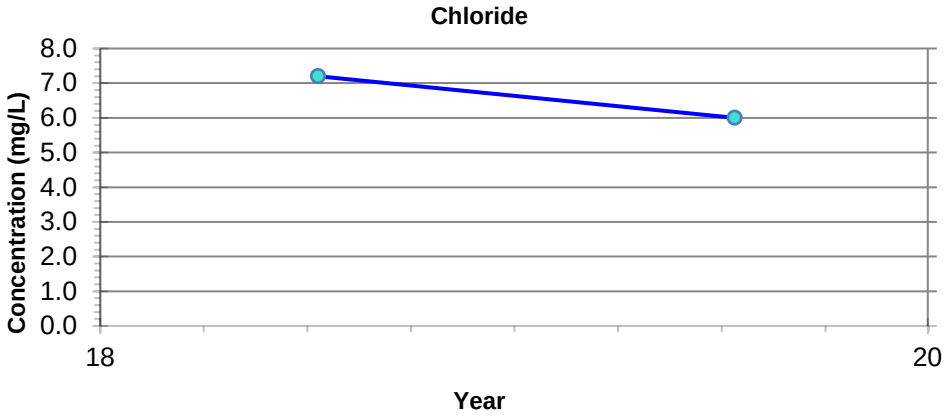

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B30-17-2-3

20-Mar-2020 date	NA edited by	JC drawn by	NA app by

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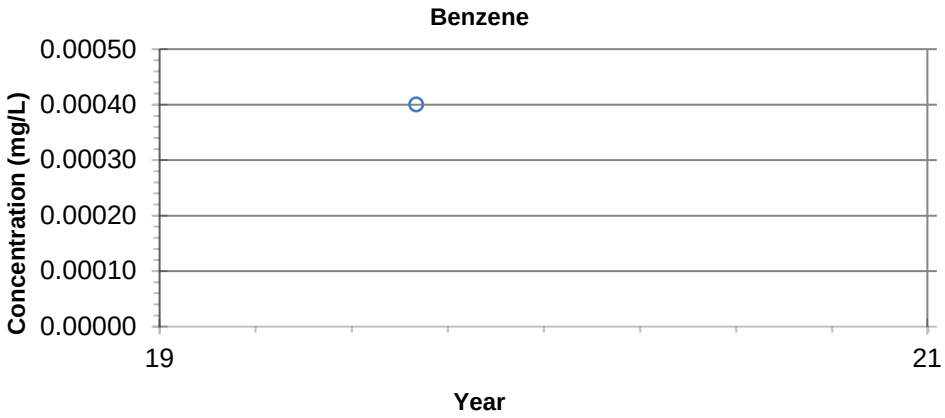

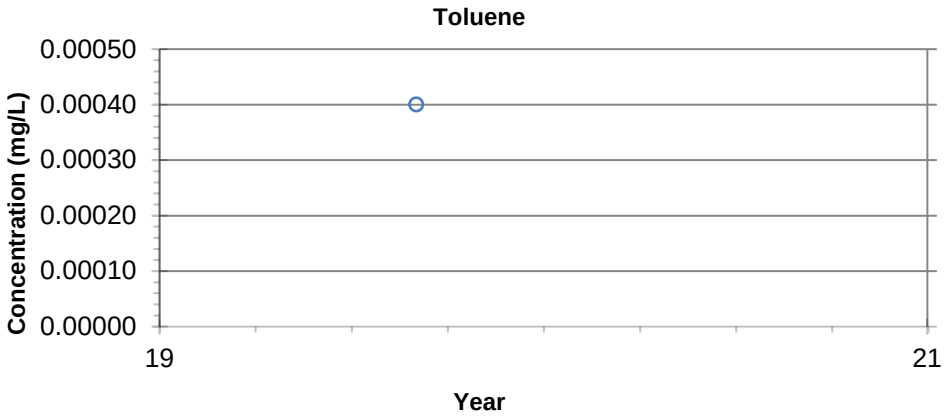

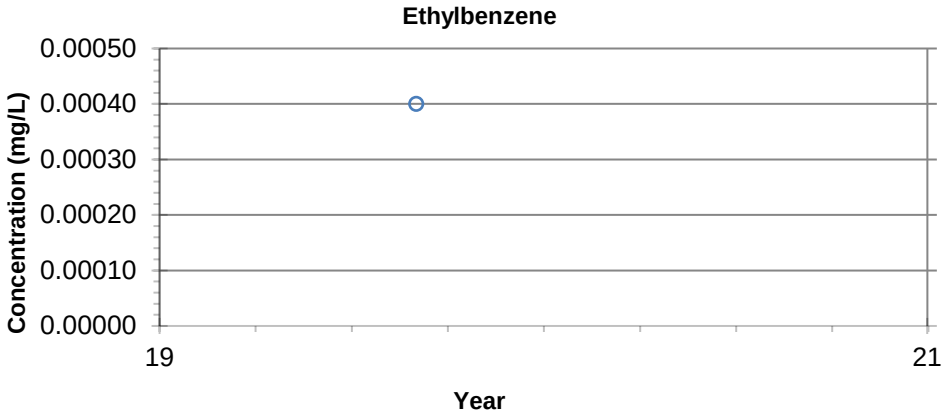

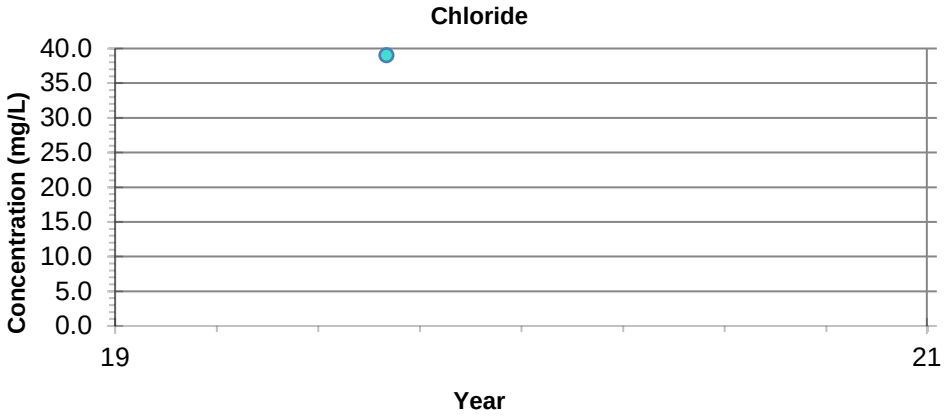

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B30-19-01-5

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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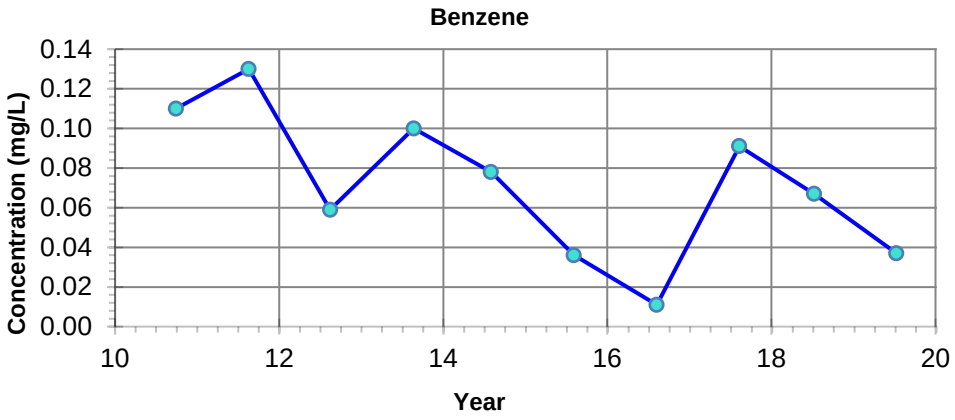

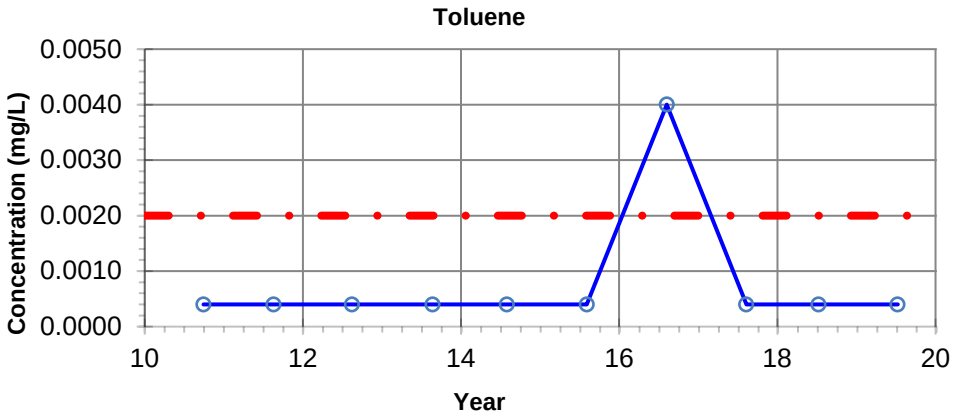

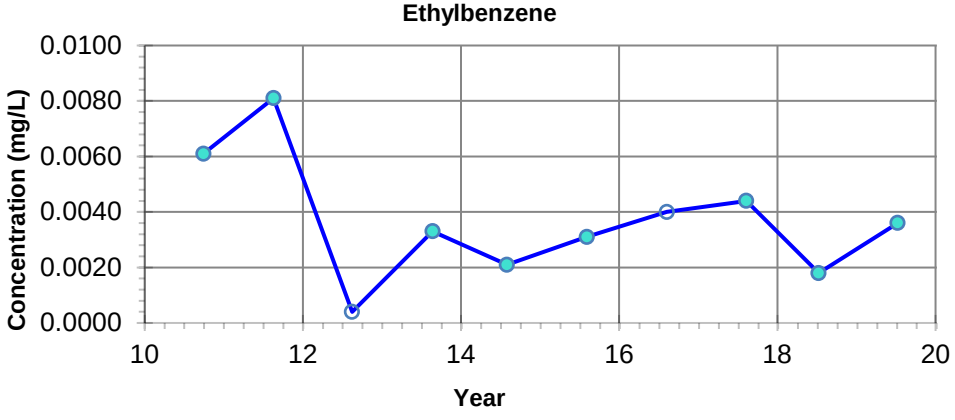

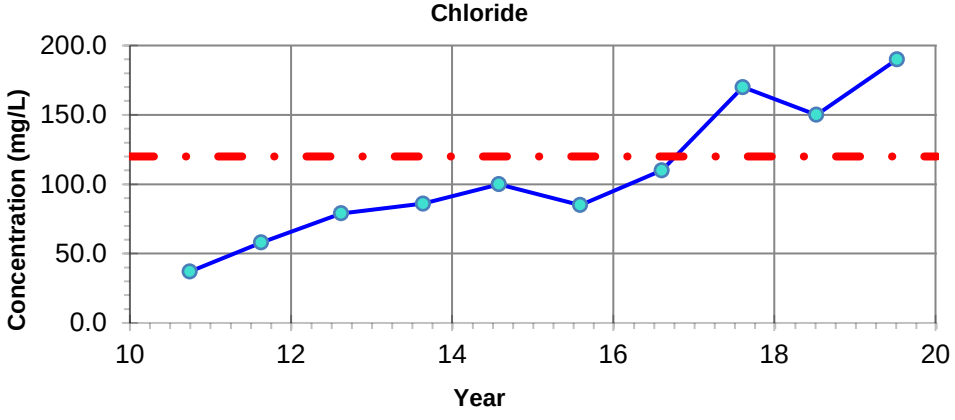

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: C30-10-1-5

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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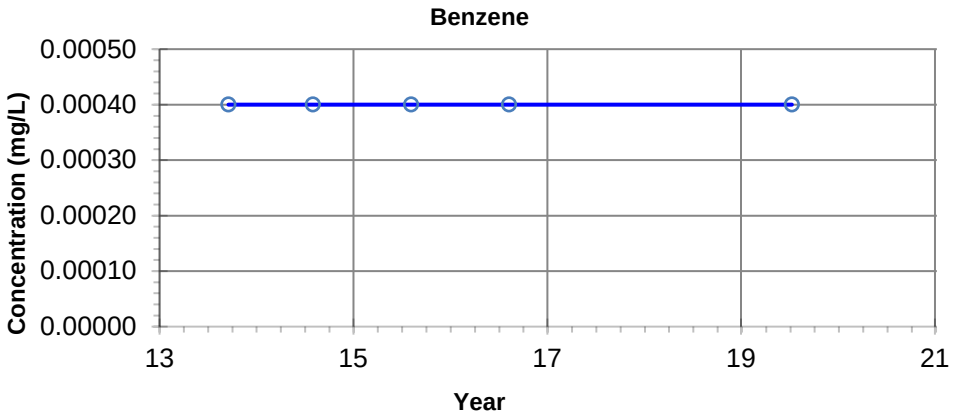

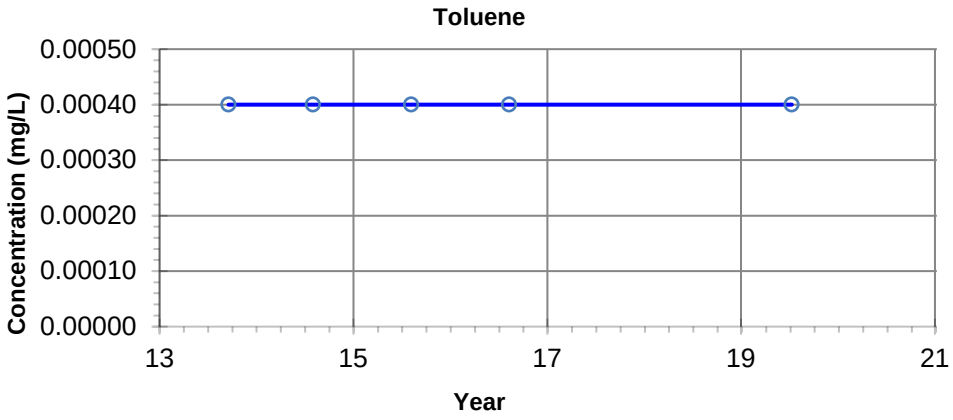

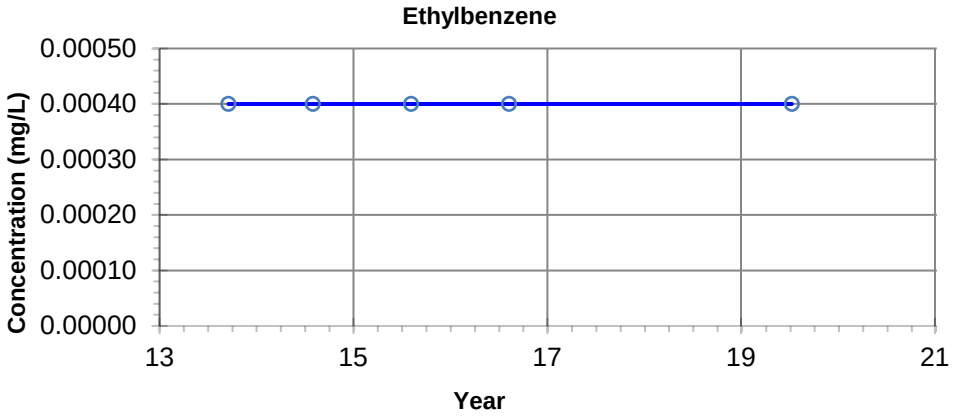

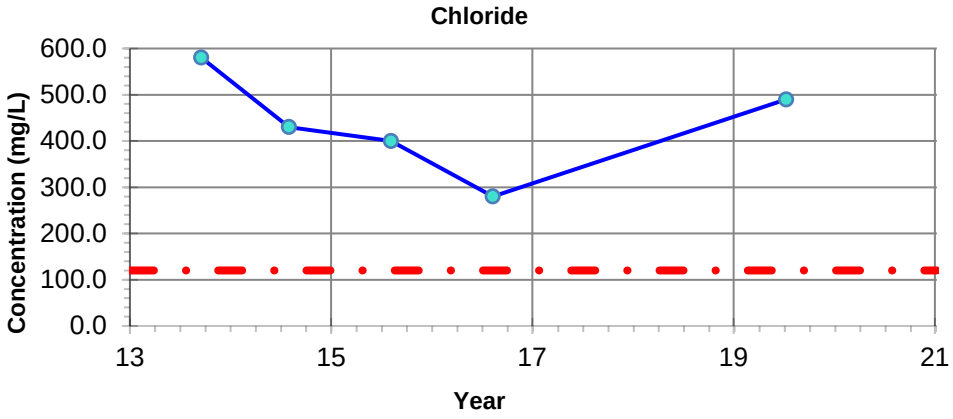

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GUIDELINE:
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Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BOS-DP-13-1-1.4

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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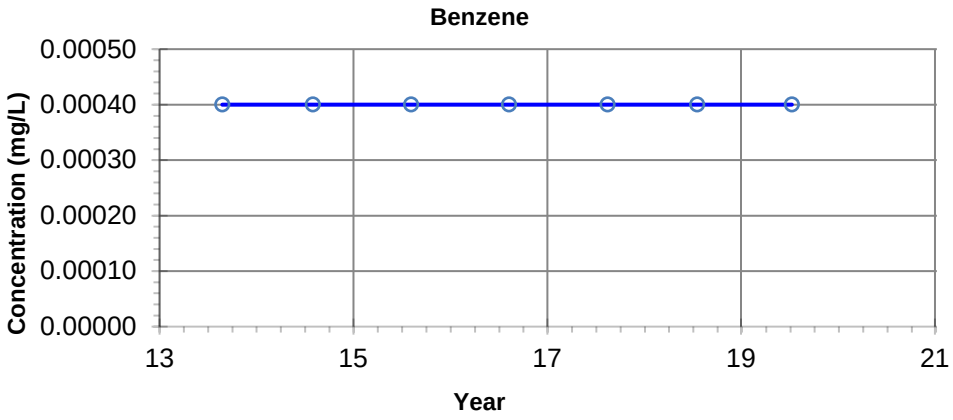

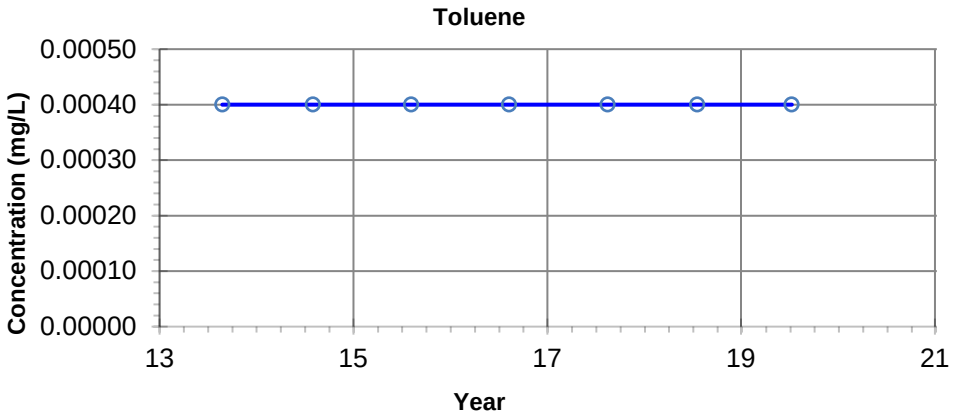

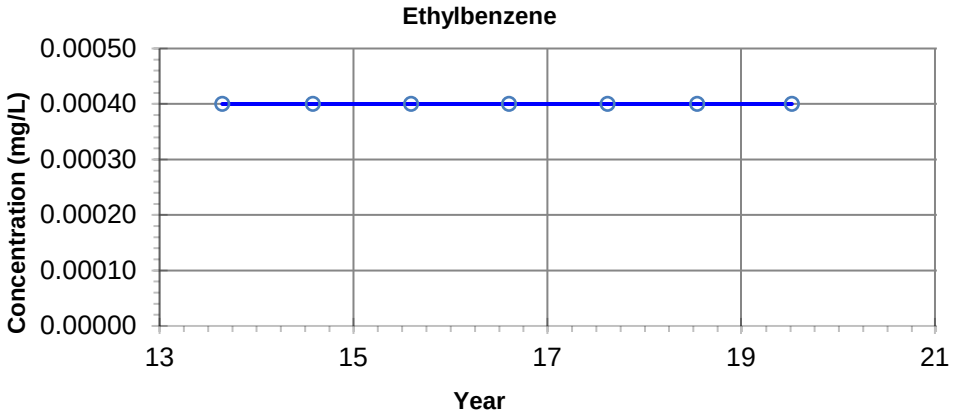

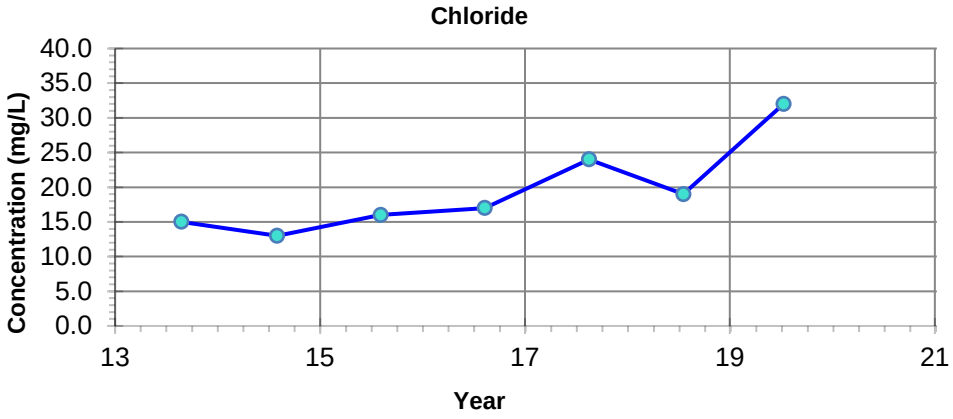

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Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BOS SW01

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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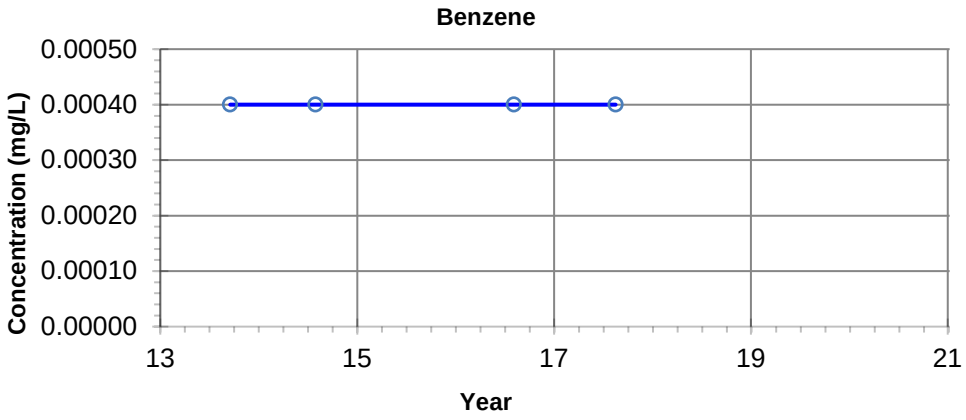

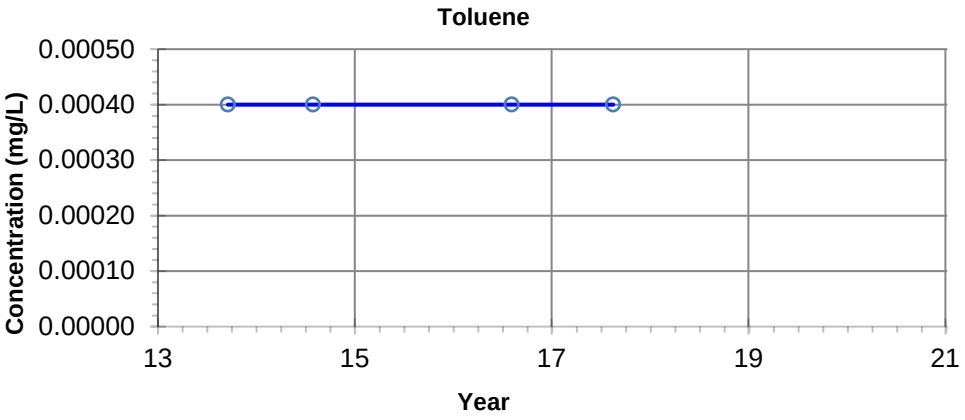

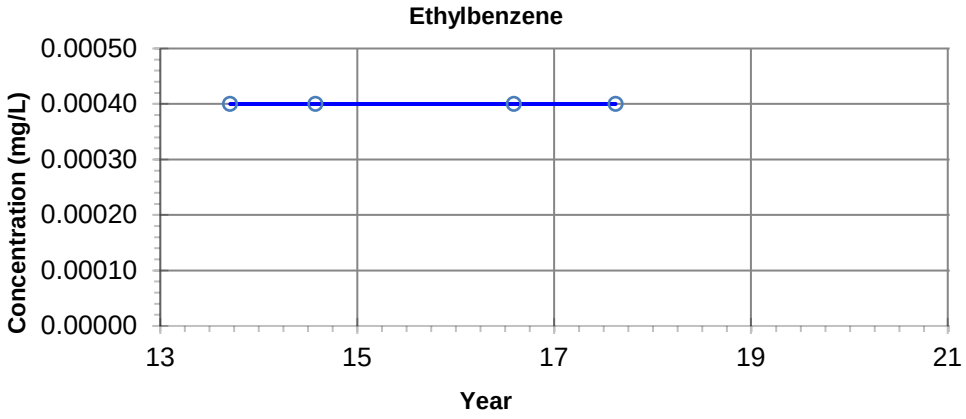

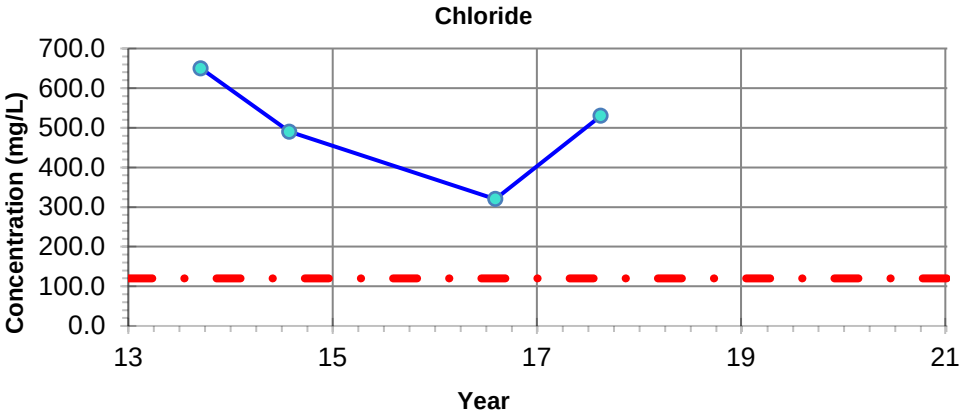

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Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BOS-DP-13-2-1.35

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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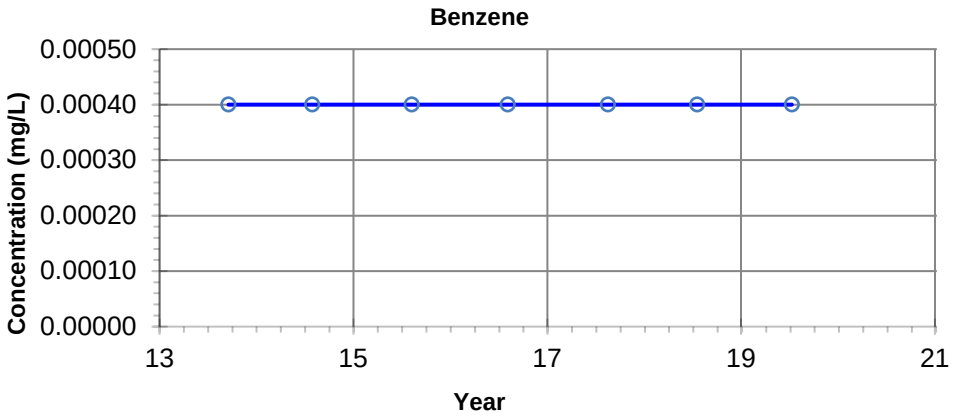

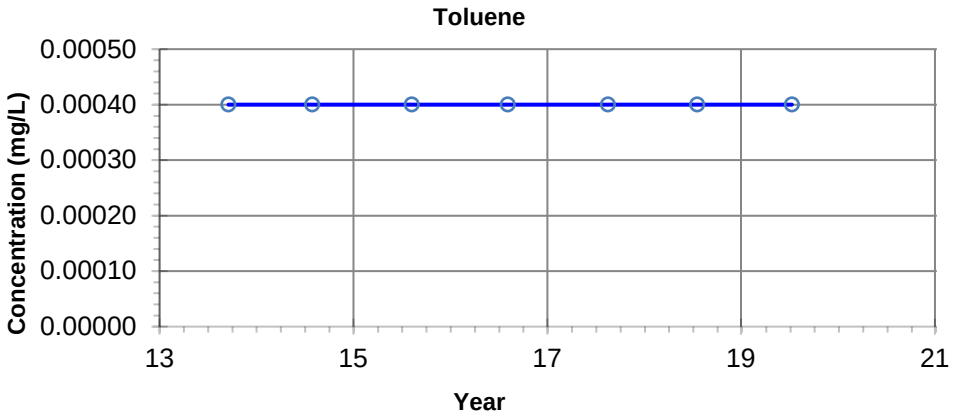

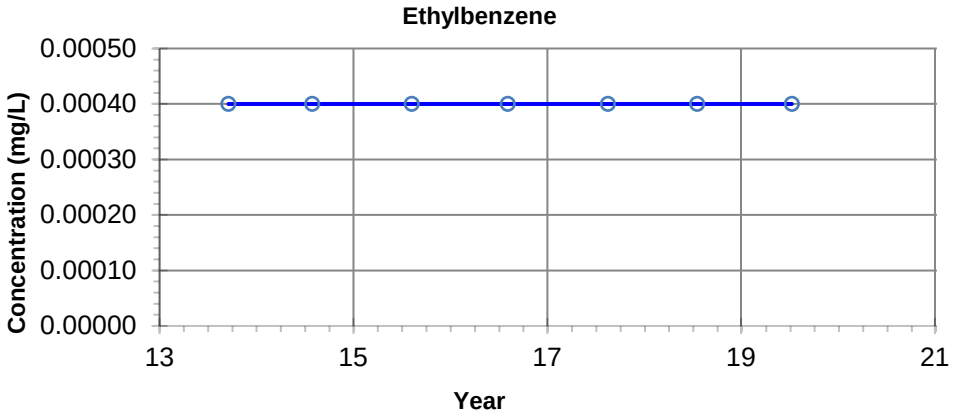

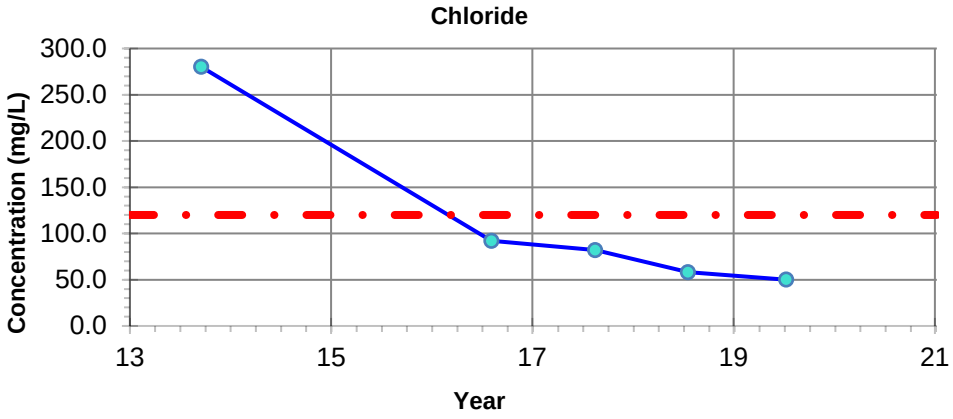

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BOS-DP-13-3-2

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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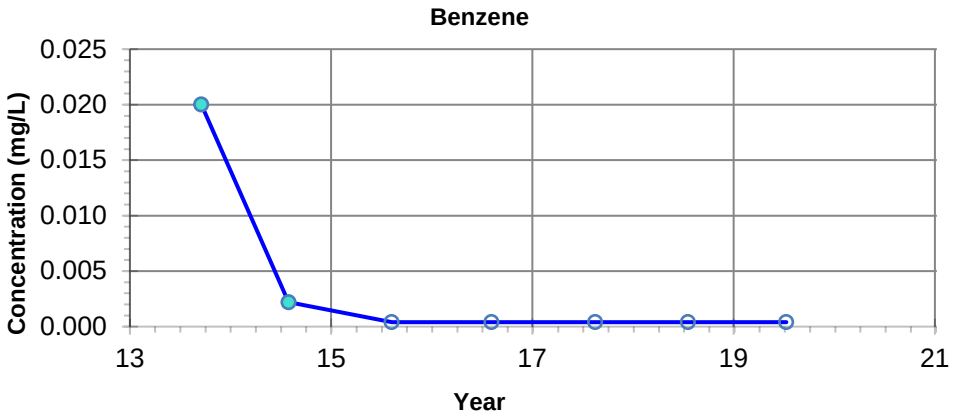

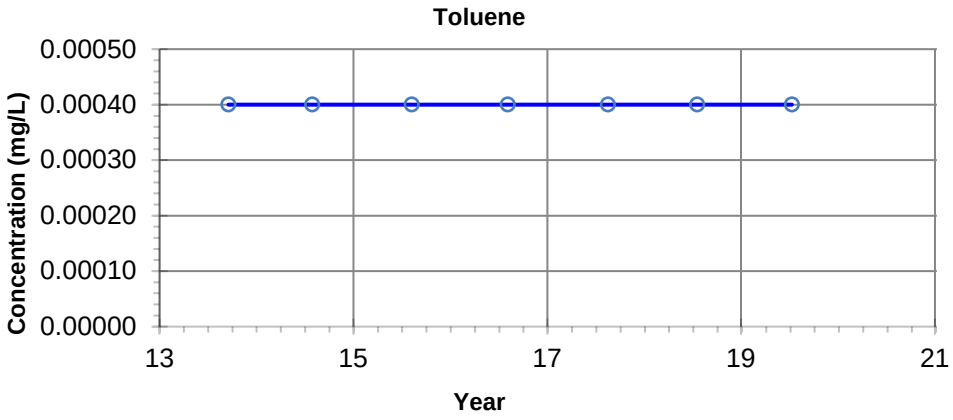

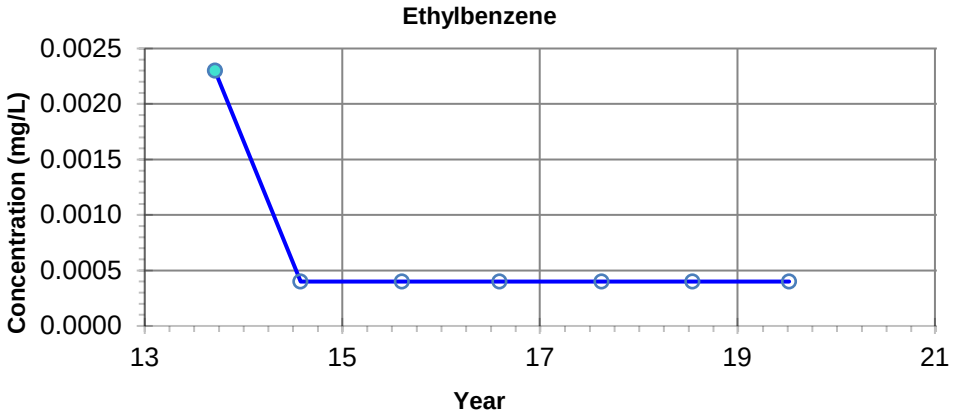

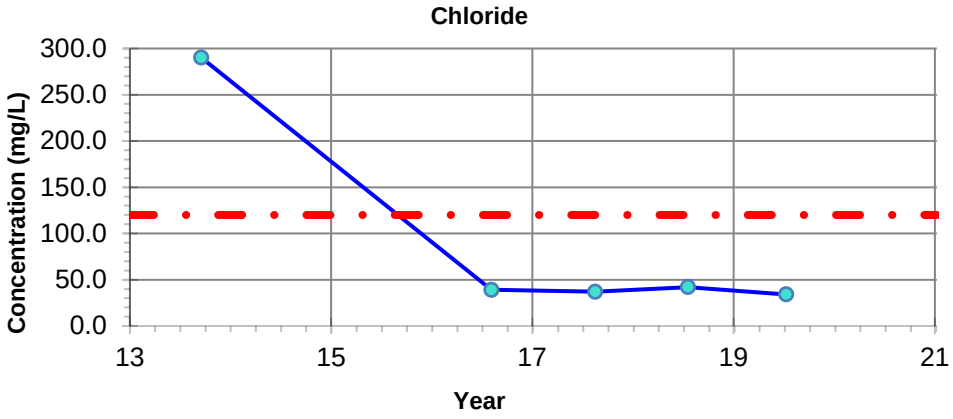

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BOS-DP-13-4-3

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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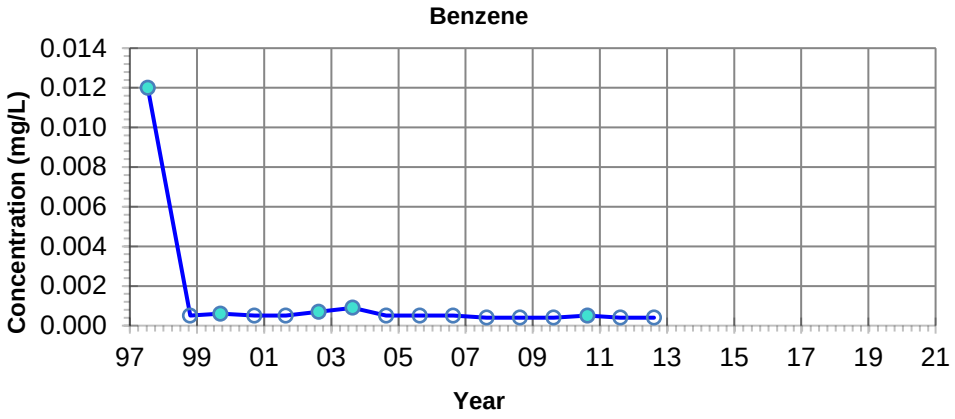

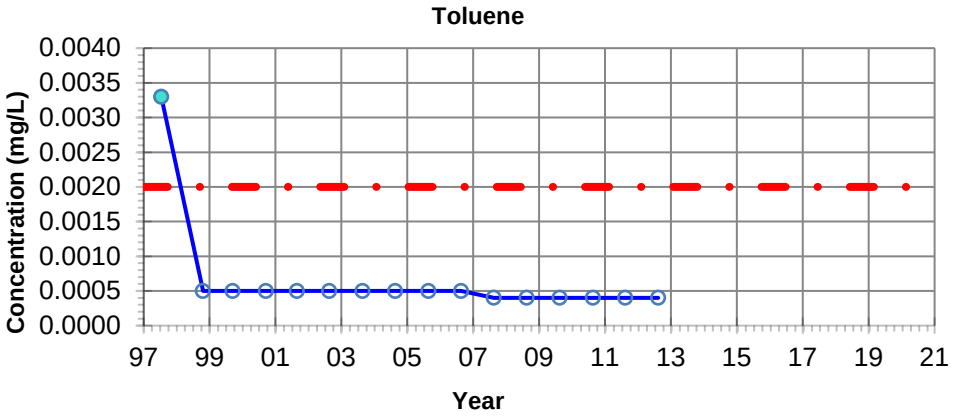

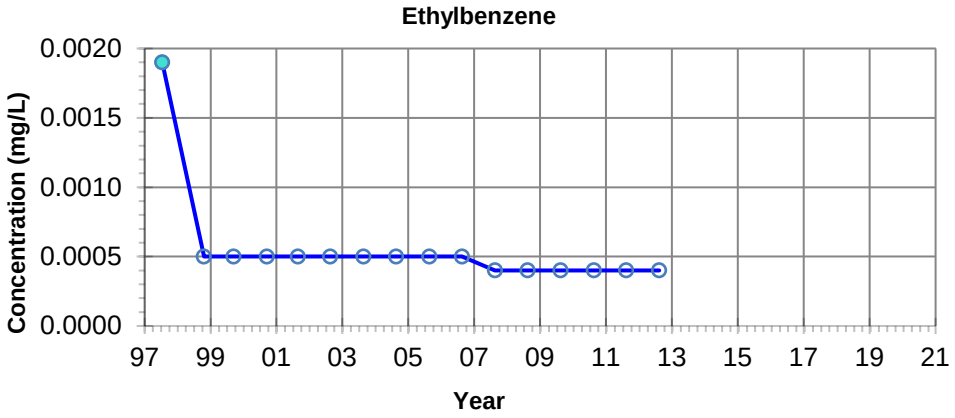

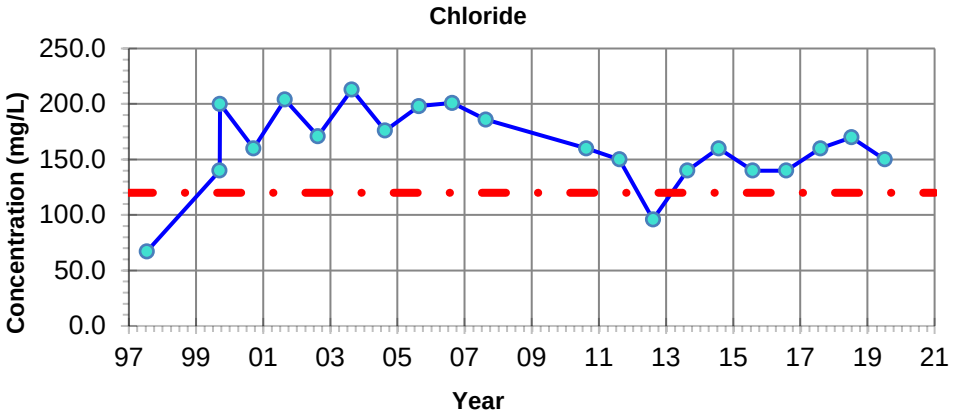

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BT3 97-11-11

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

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PROJECT NUMBER:
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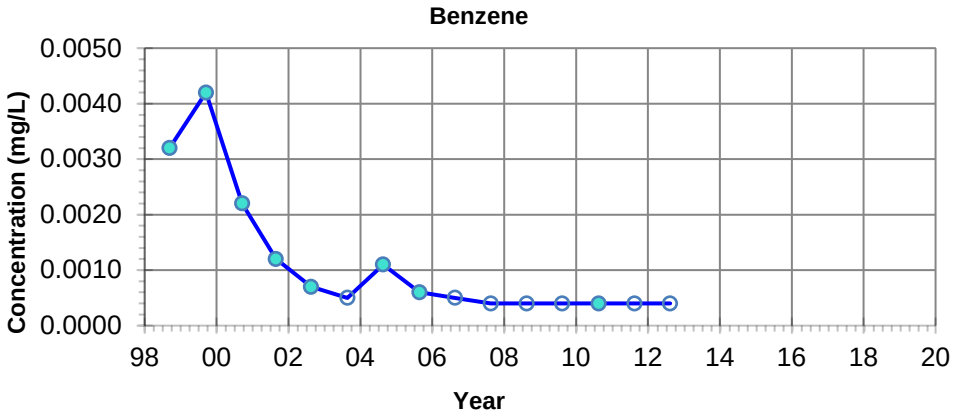

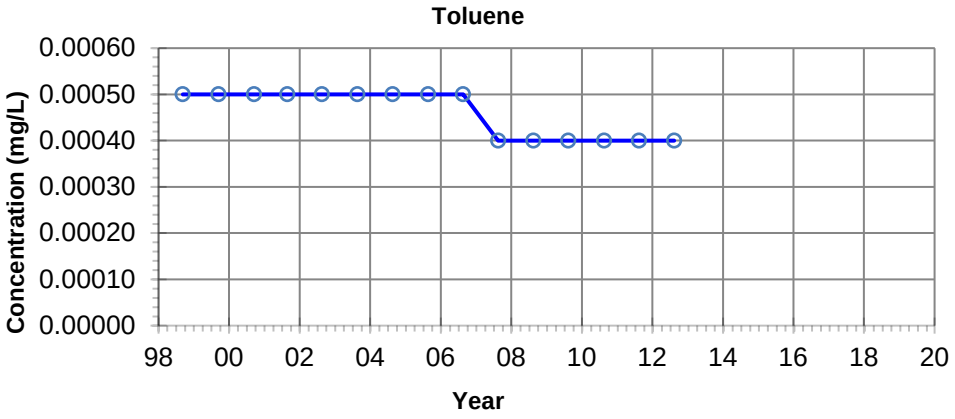

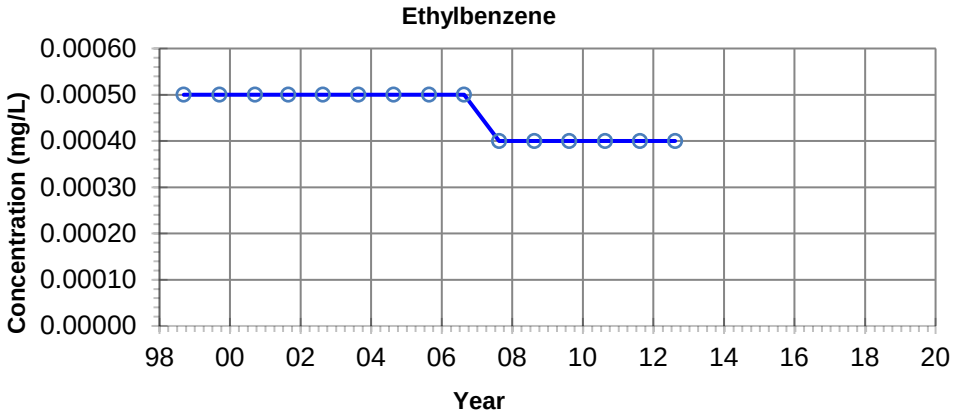

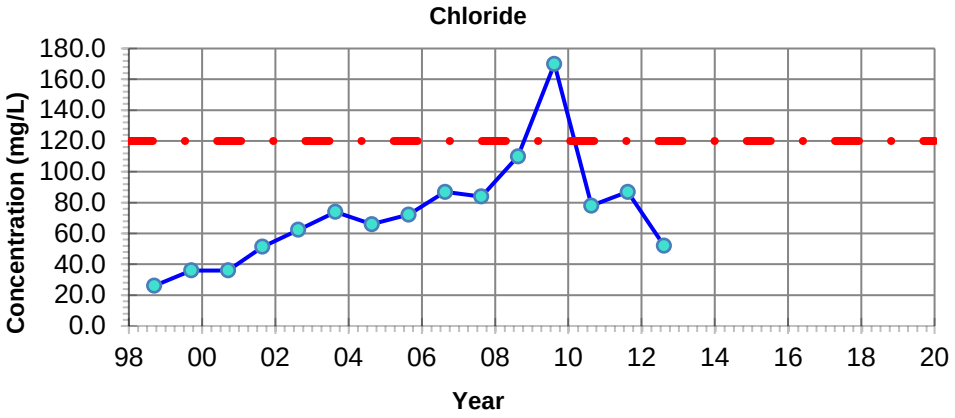

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BT3 98-7-7

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

PROJECT NUMBER:
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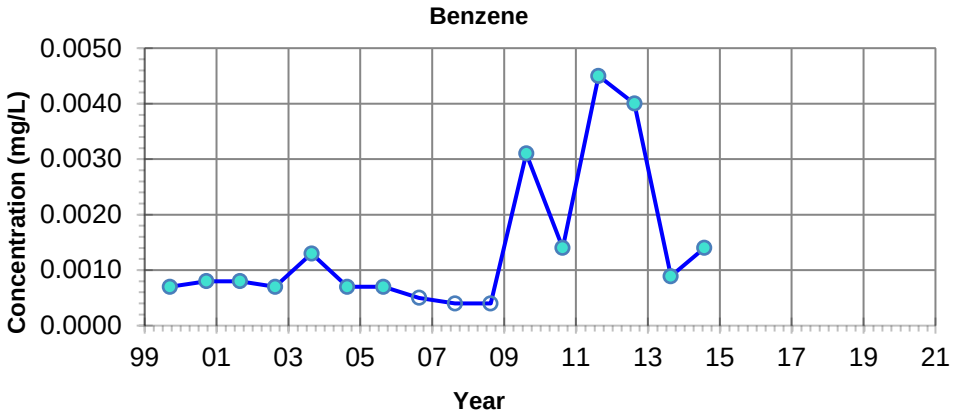

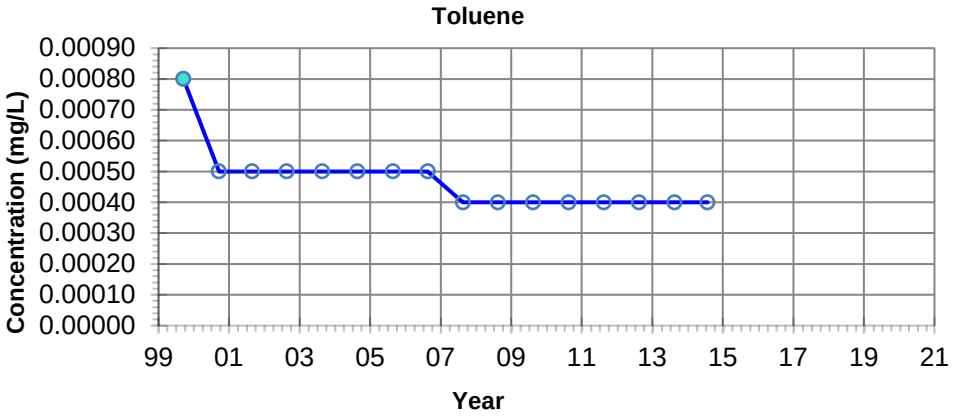

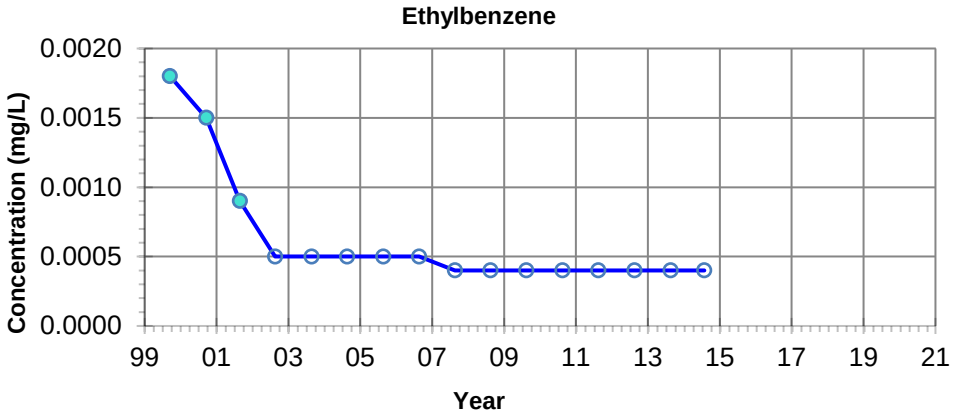

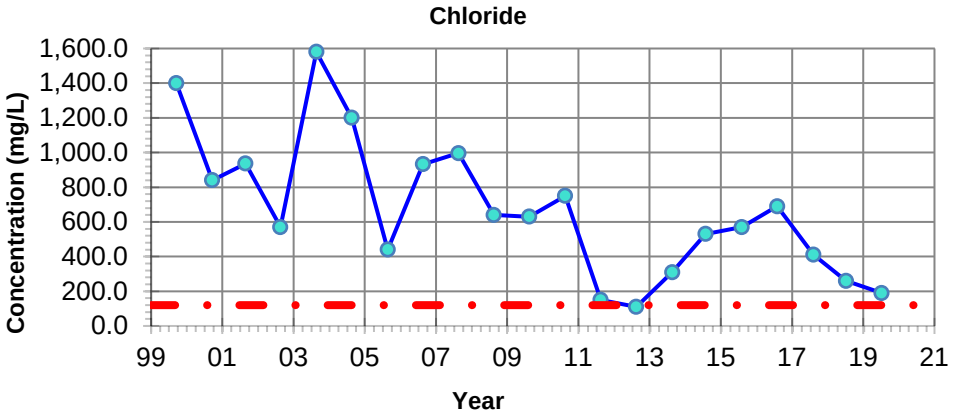

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BT3 99-20-13

20-Mar-2020 date	NA edited by	JC drawn by	NA app by

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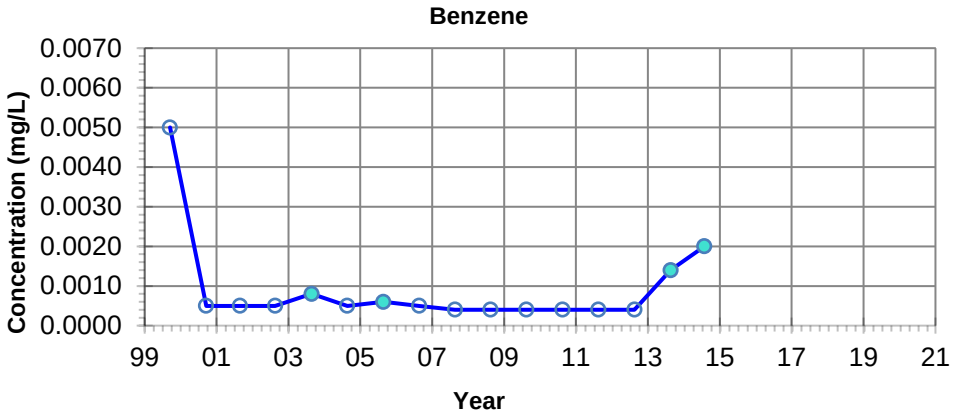

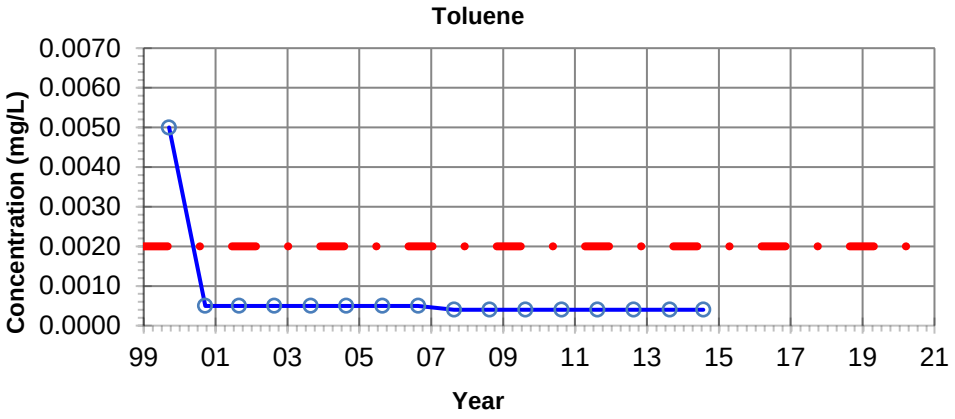

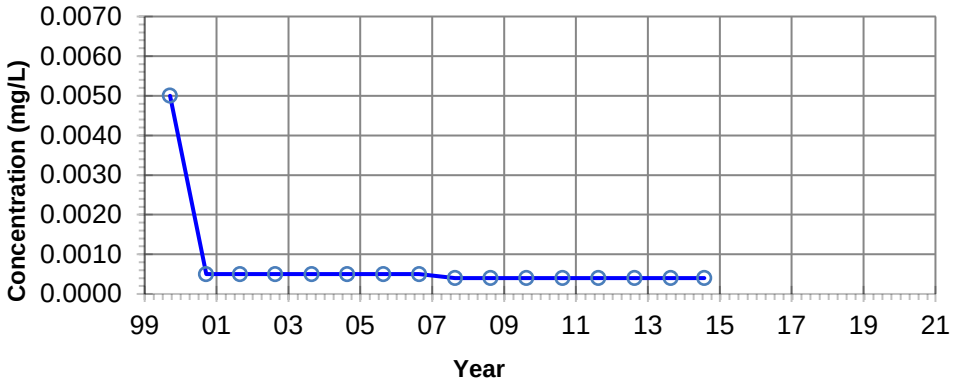

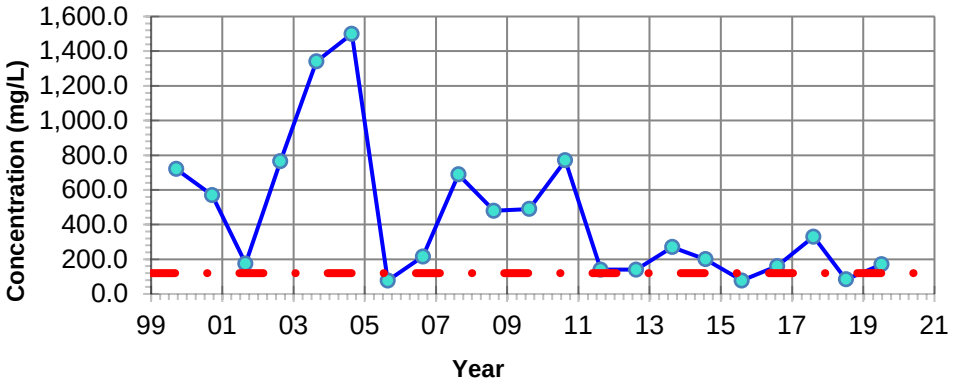

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BT3 99-21-12

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

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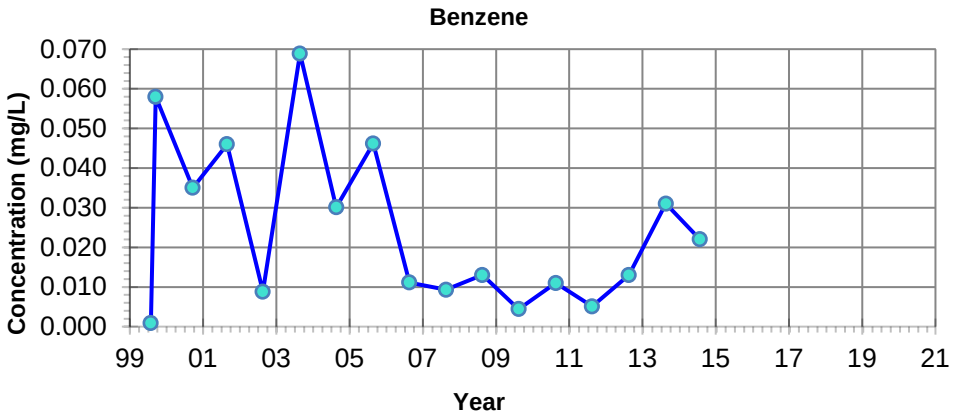

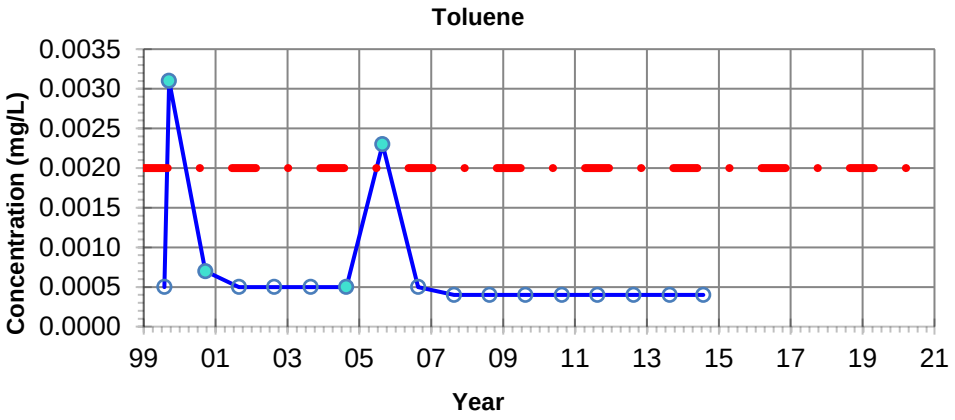

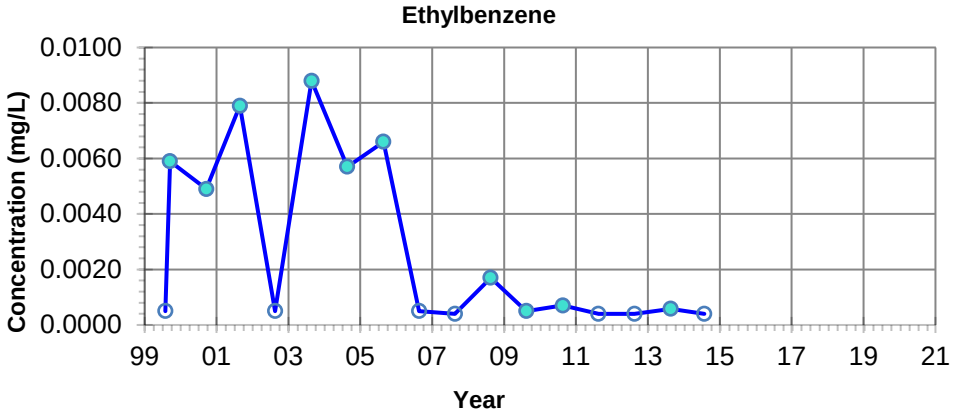

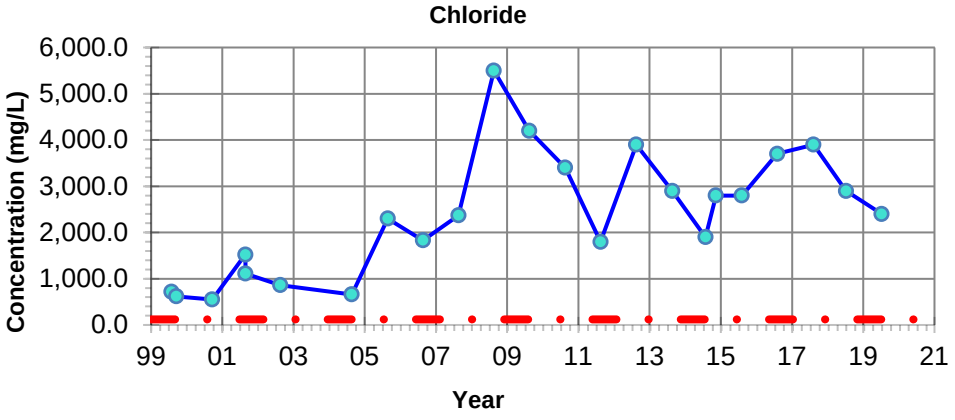

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BT3 99-23-13

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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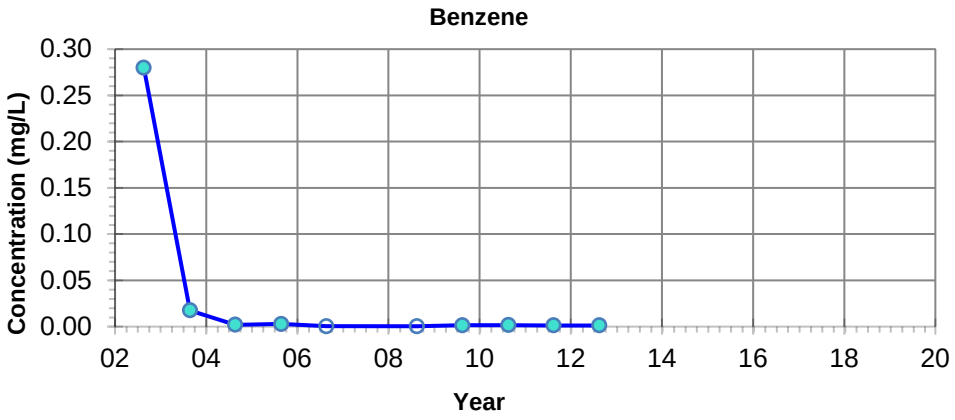

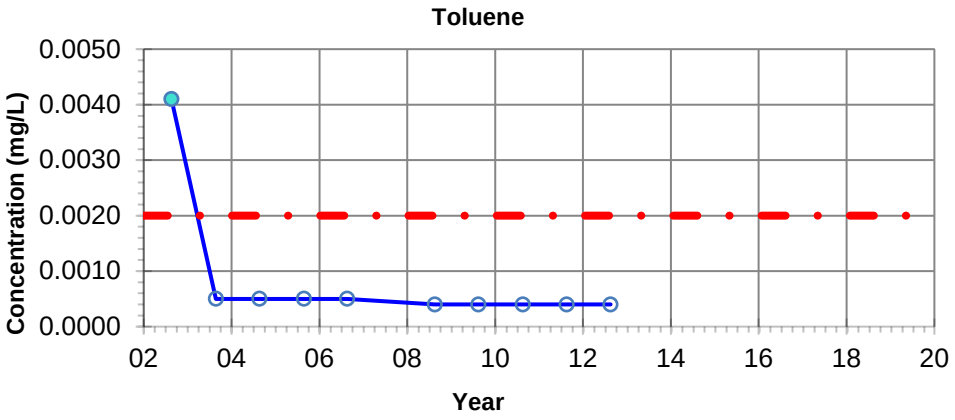

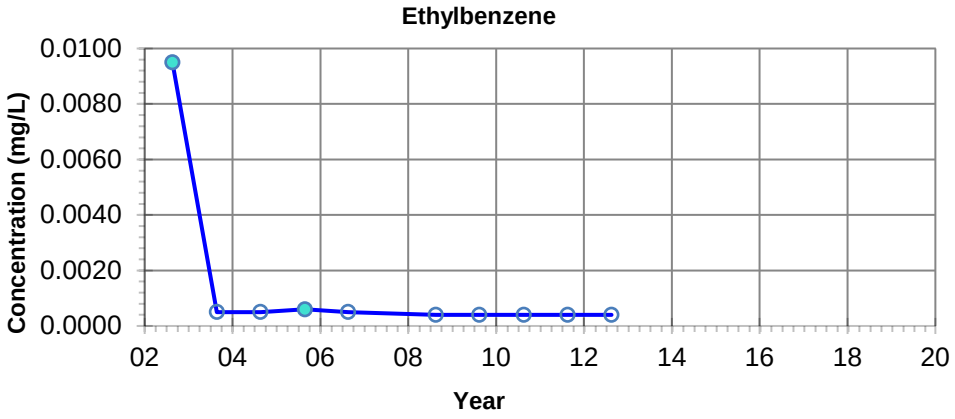

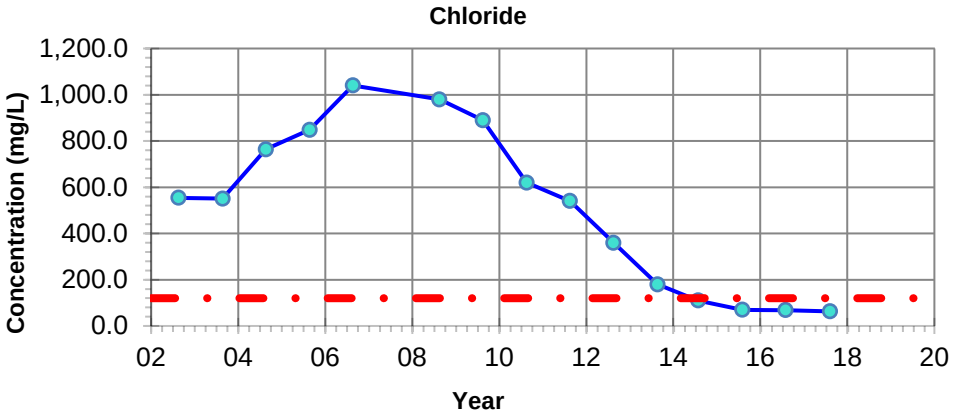

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BT3 02-32-6

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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PROJECT NUMBER:
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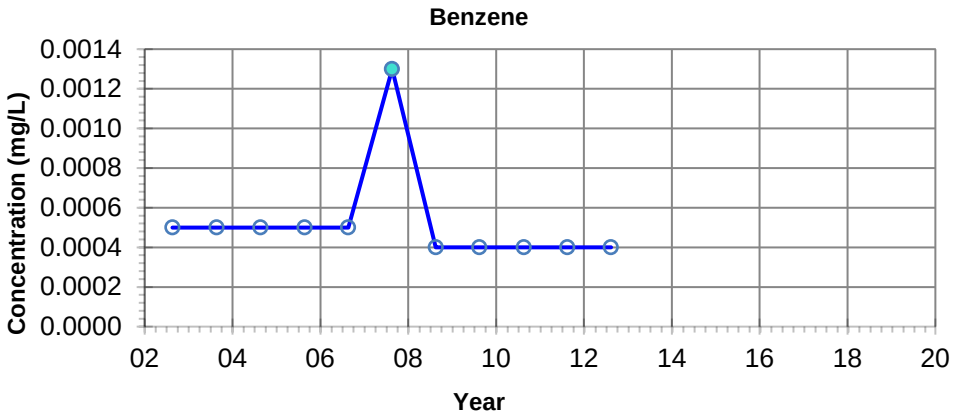

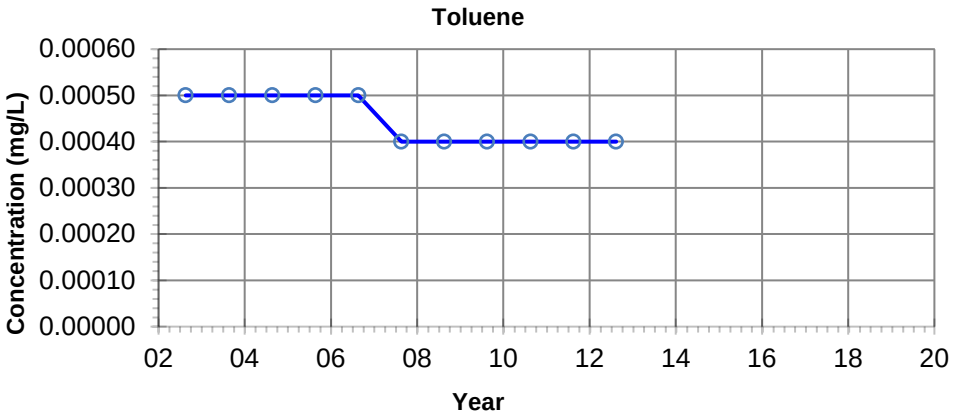

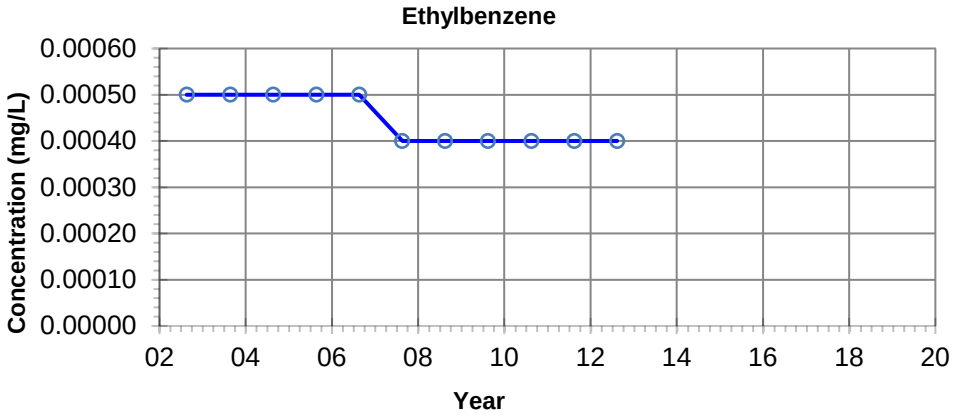

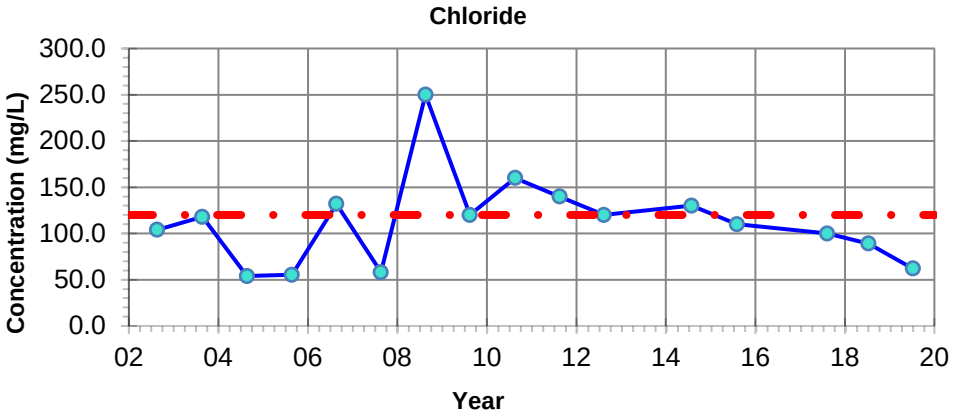

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GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BT3 02-34-4

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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PROJECT NUMBER:
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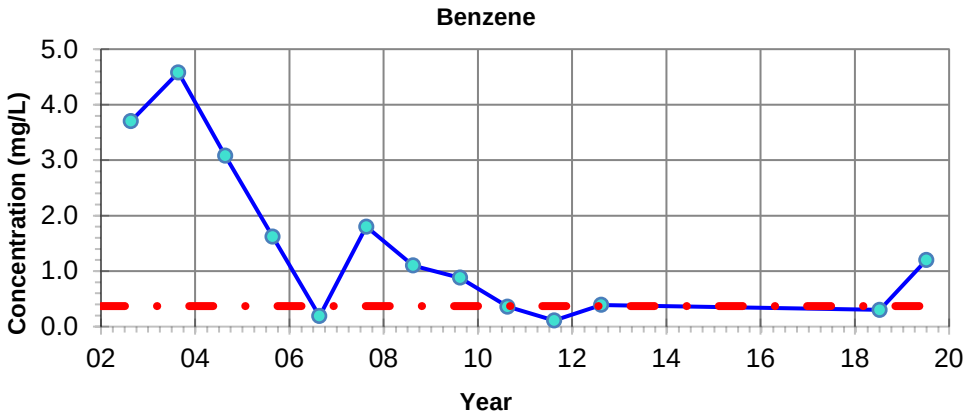

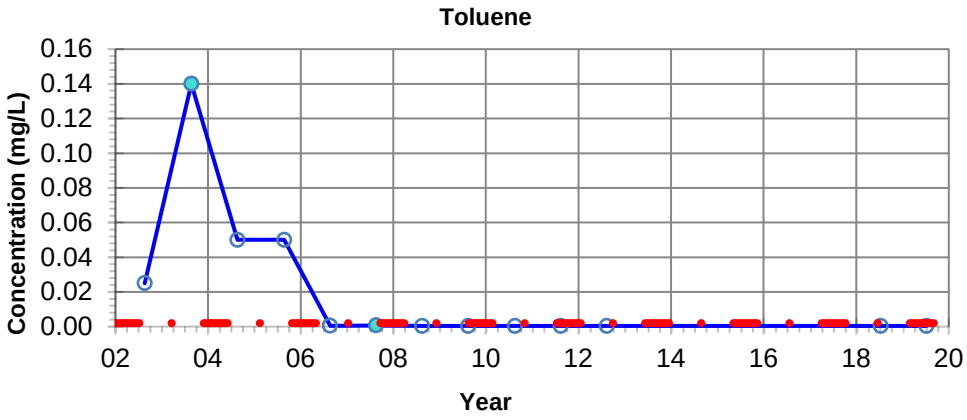

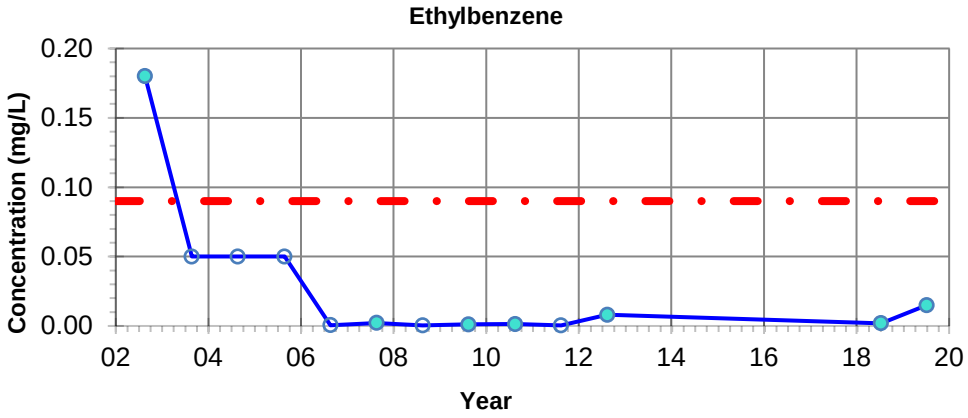

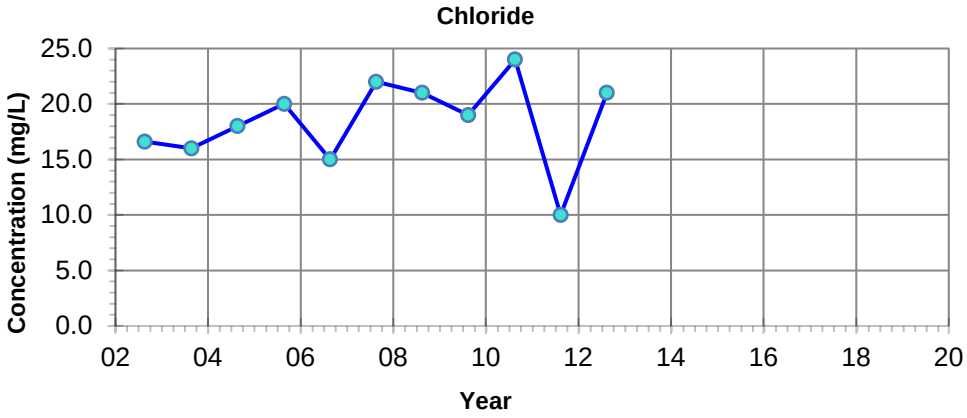

NOTES: - Filled symbols denote Sample Values
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GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BT3 02-36-4

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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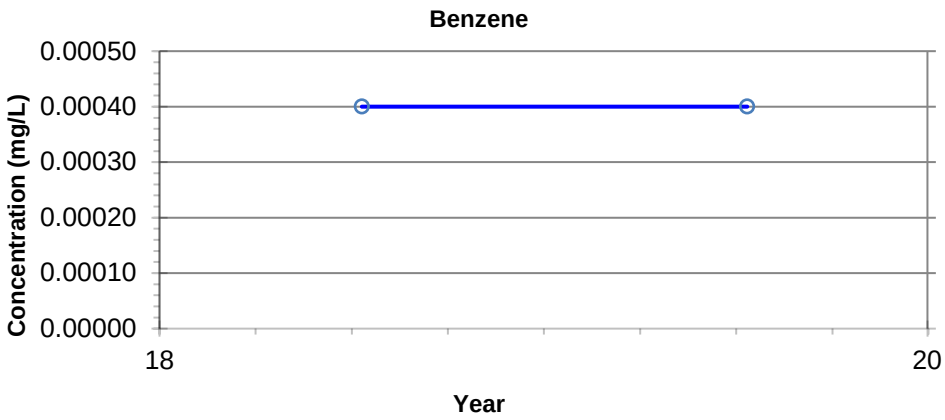
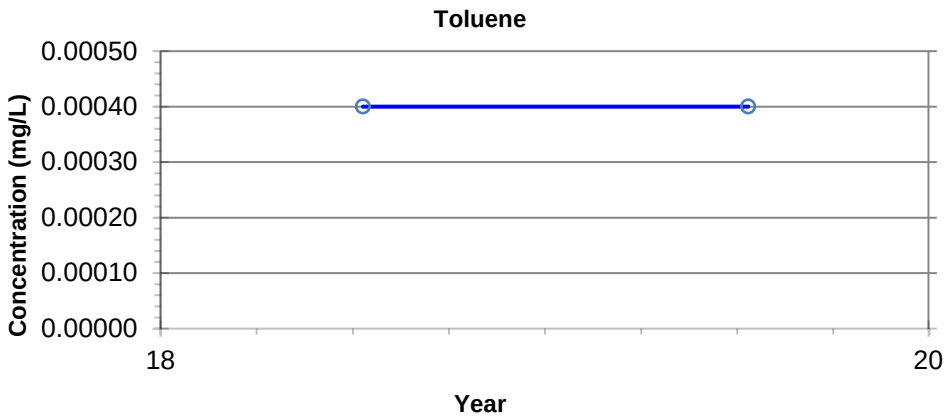
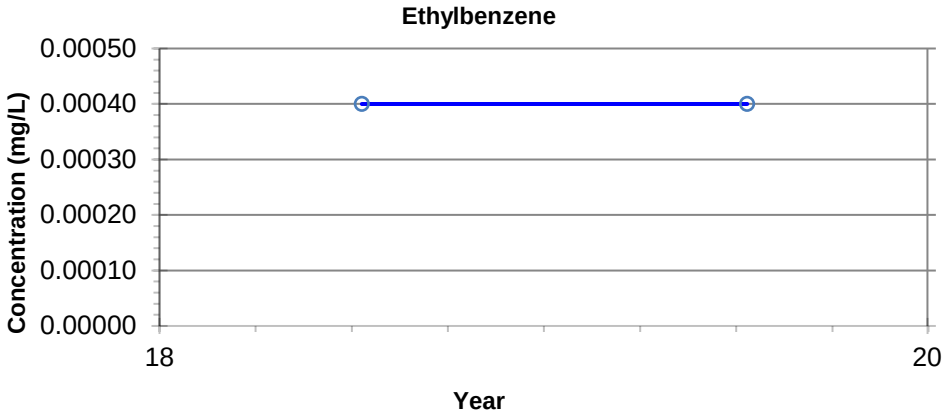
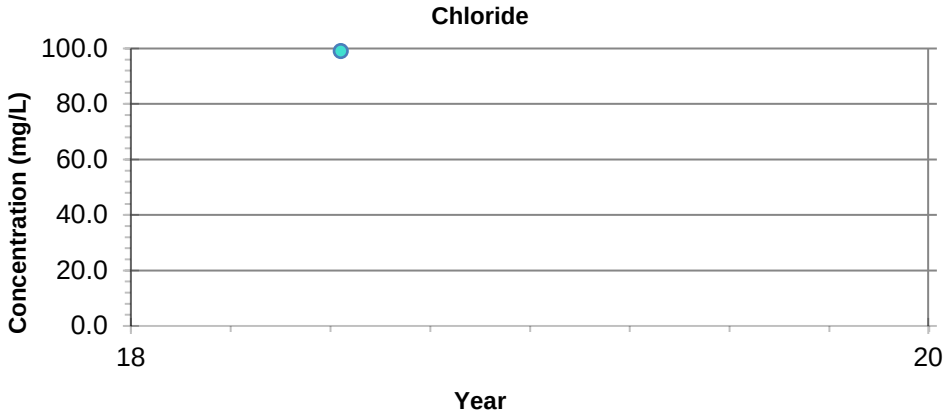
PROJECT NUMBER:
417011-00096

File Path: C:\Users\Jinrong.Cui\Desktop\Graphs\417011-00096









NOTES:
- Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)
- Lower control limits below zero for Sulphate and Chloride

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BT3-18-1-5.5

20-Mar-2020 date	NA edited by	JC drawn by	NA app by

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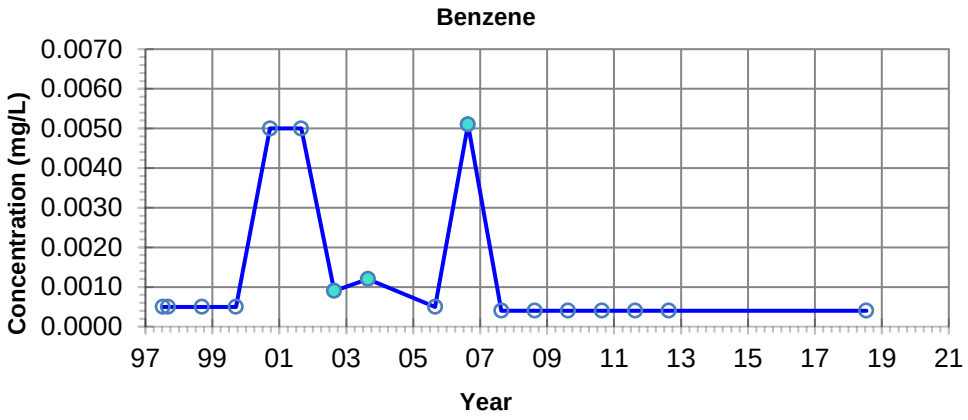
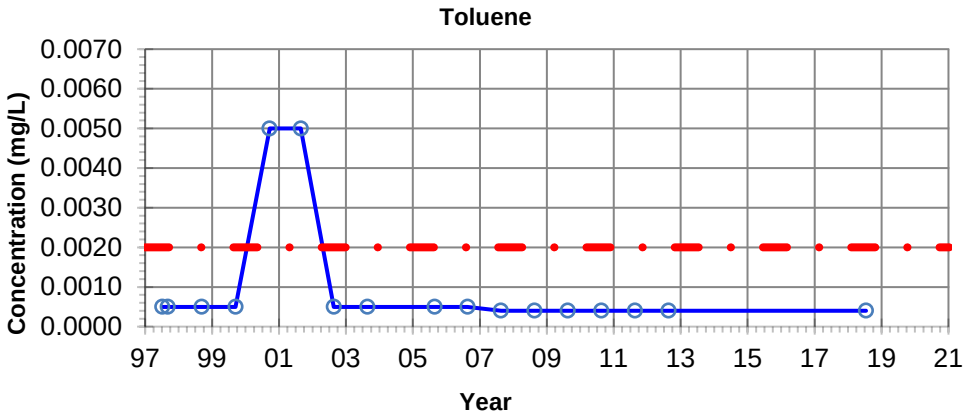
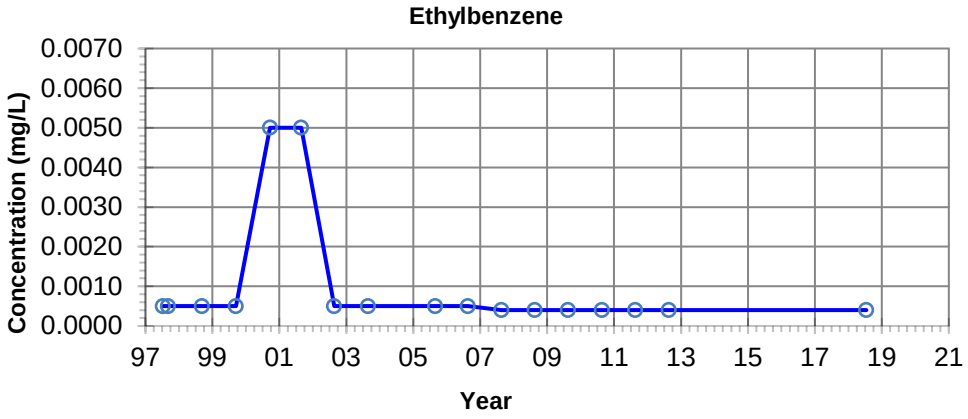
PROJECT NUMBER: 417011-00096

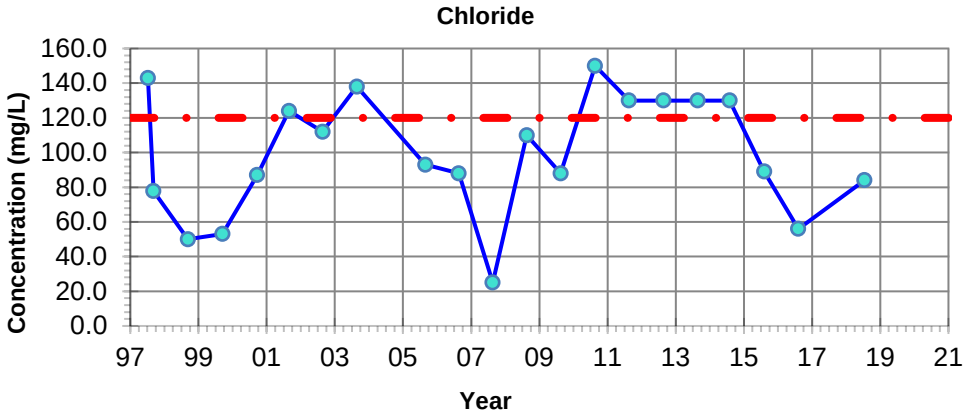
Figure 9

File Path: C:\Users\Jinrong.Cui\Desktop\Graphs\417011-00096









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GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: F31 97-3-5

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

Advisian
Worley Group

PROJECT NUMBER:
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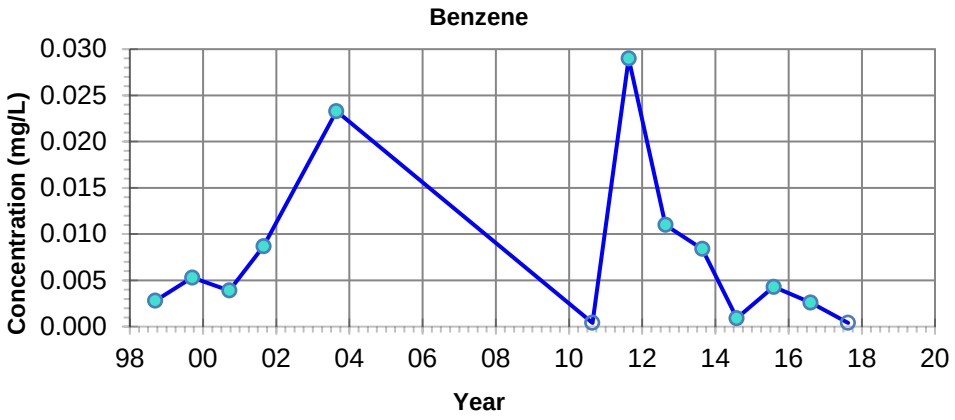

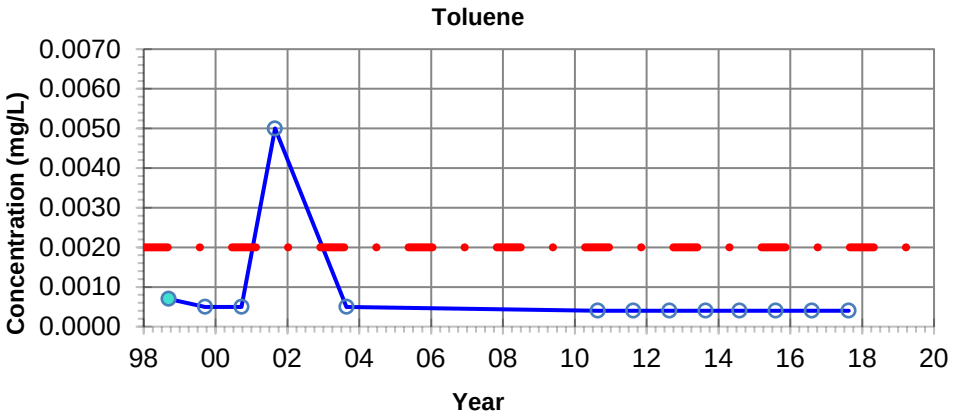

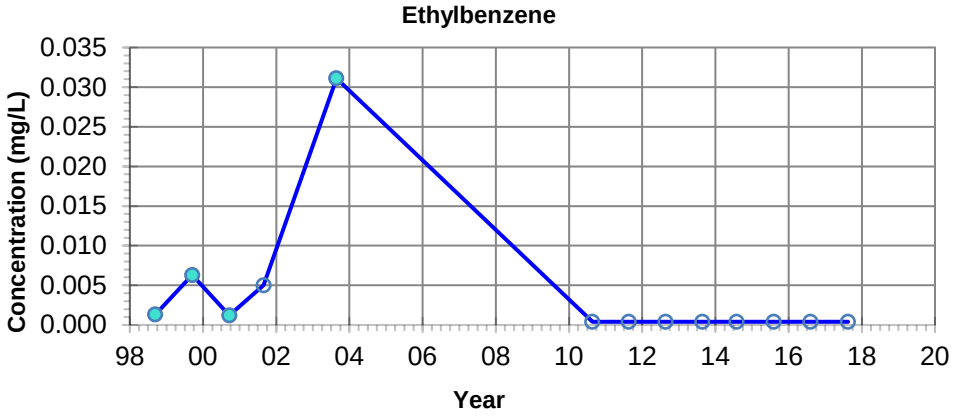

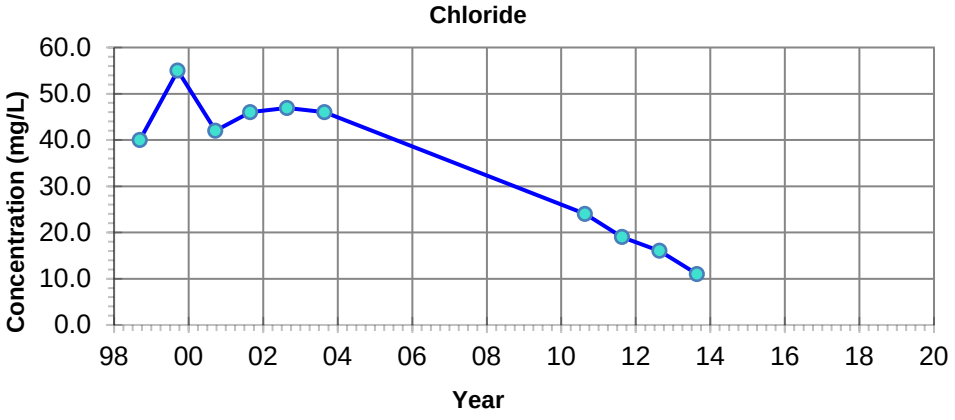

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: F31 98-1-4

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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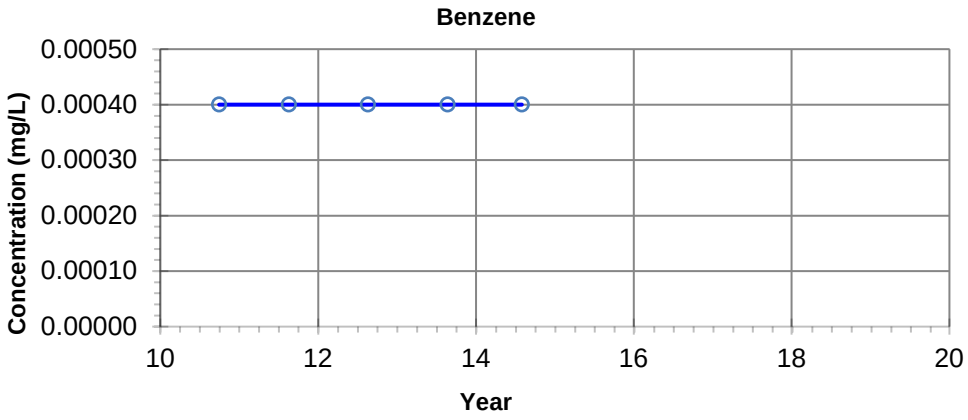

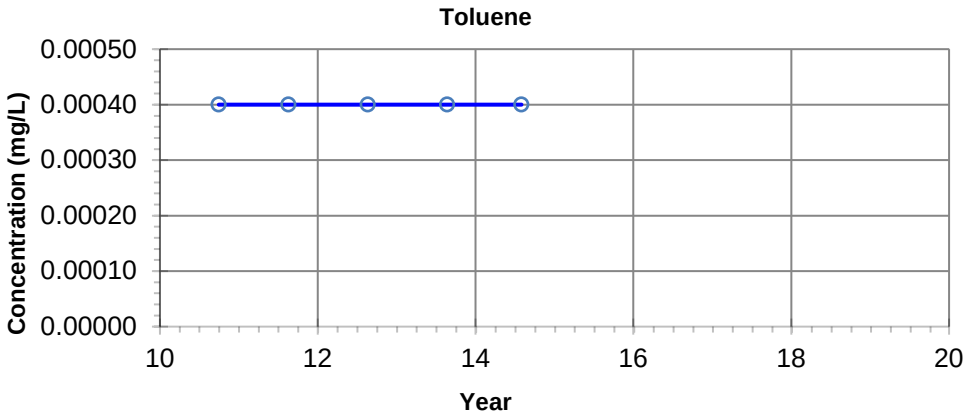

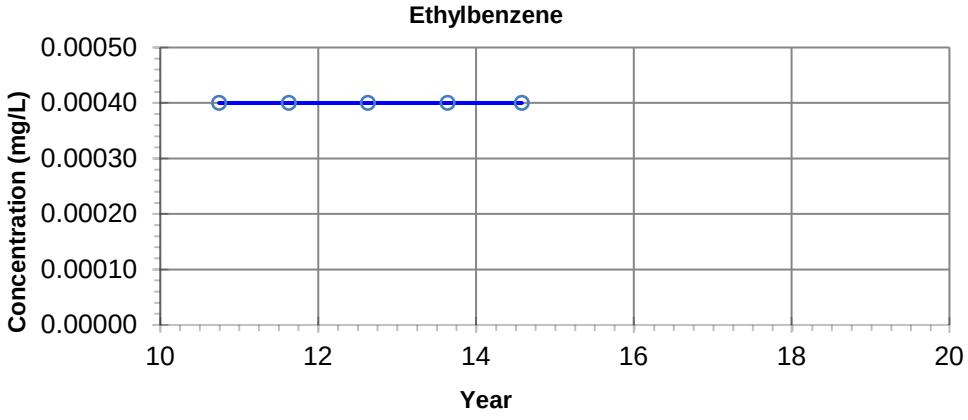

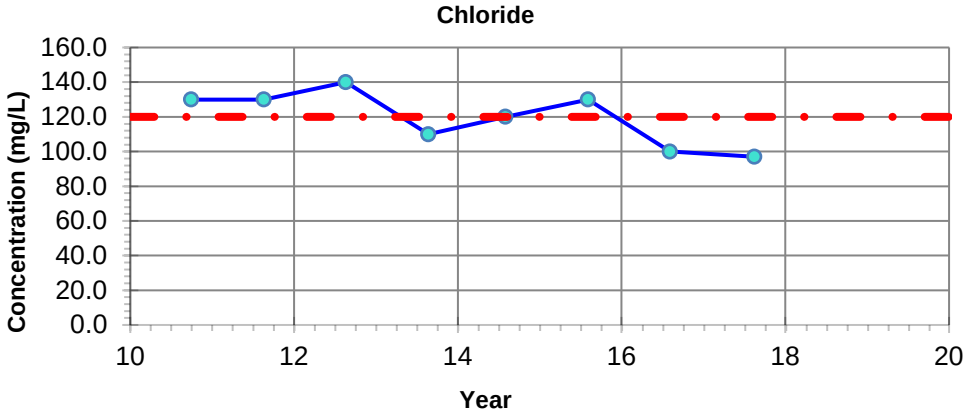

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: G32-10-1-3

20-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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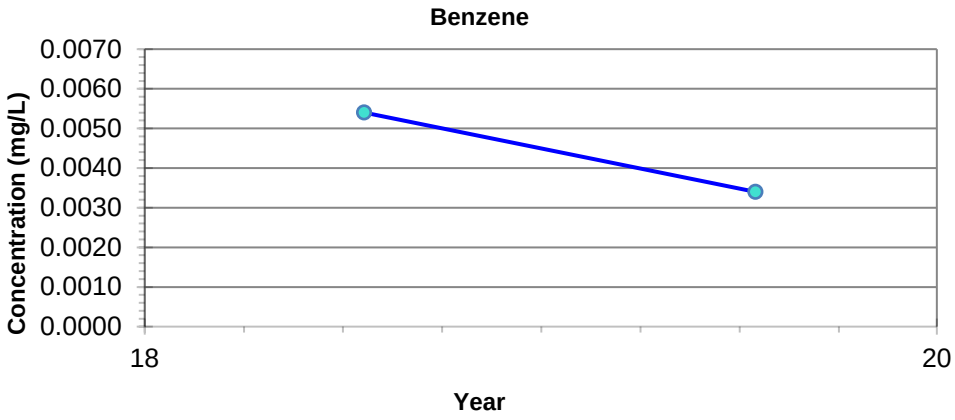

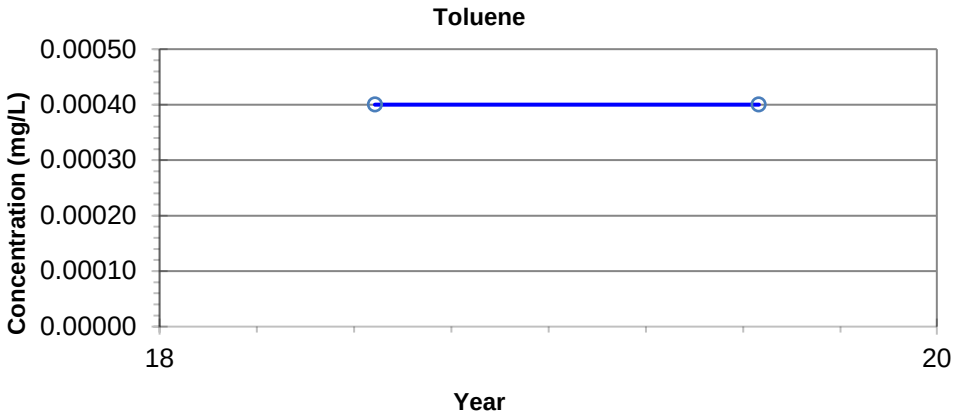

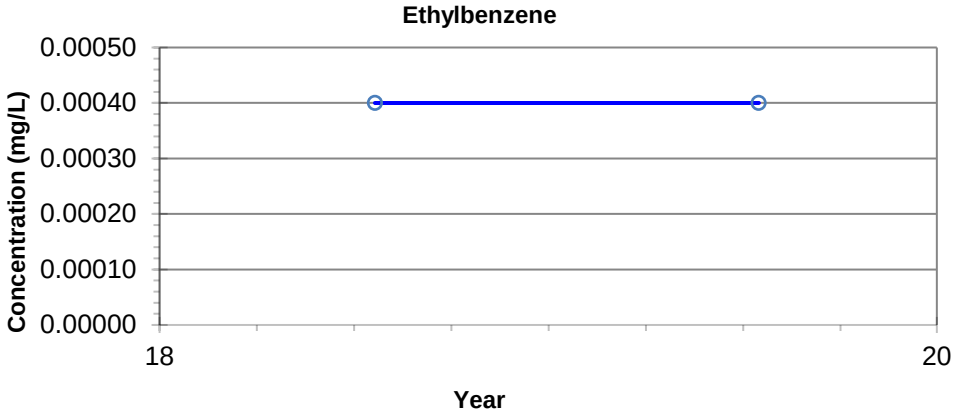

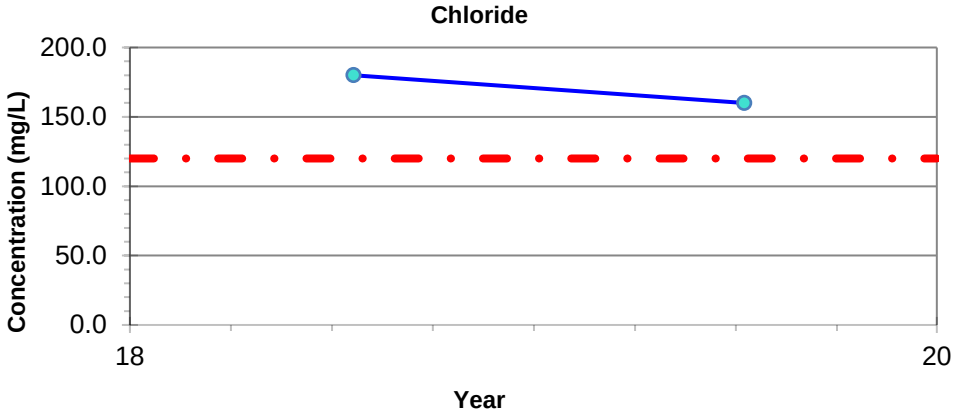

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: E33-18-1-2.5

23-Mar-2020 date	NA edited by	JC drawn by	NA app by

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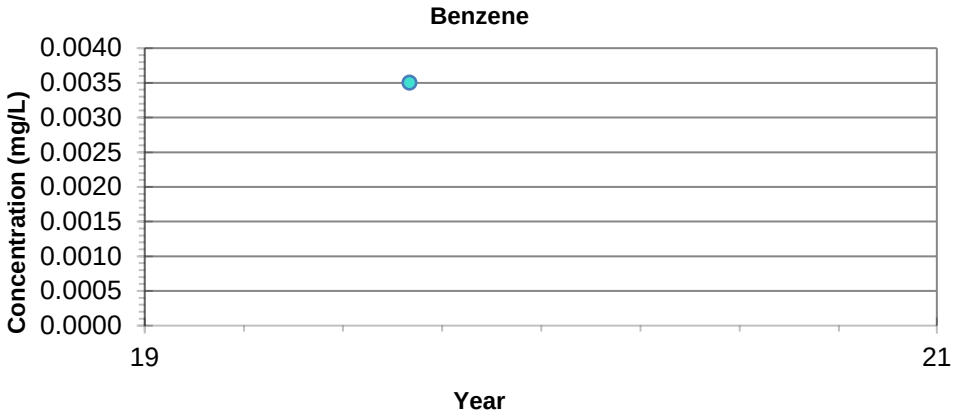

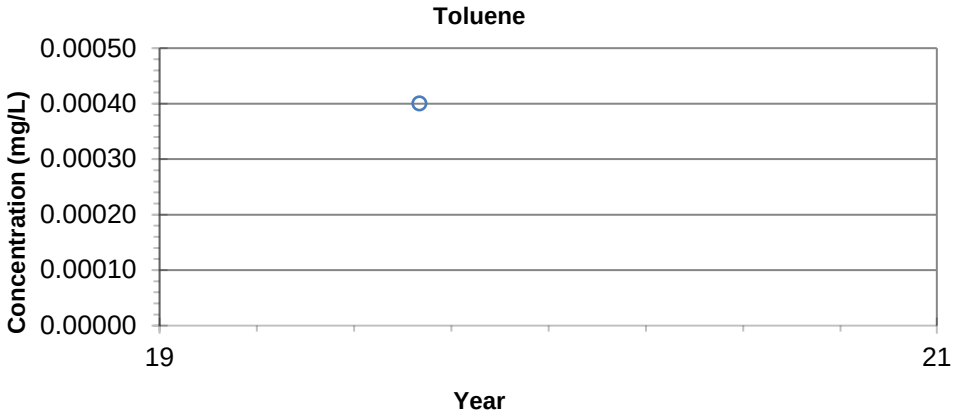

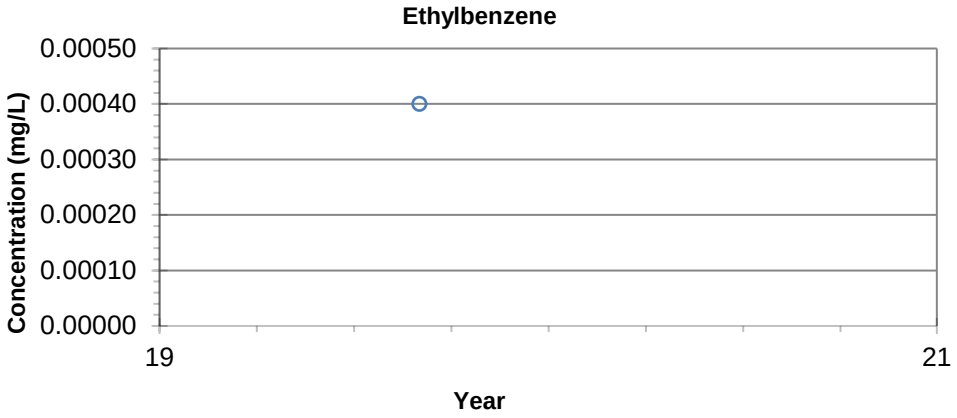

***** No Chloride Data *****

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: E33-19-02-5

23-Mar-2020 date	NA edited by	JC drawn by	NA app by

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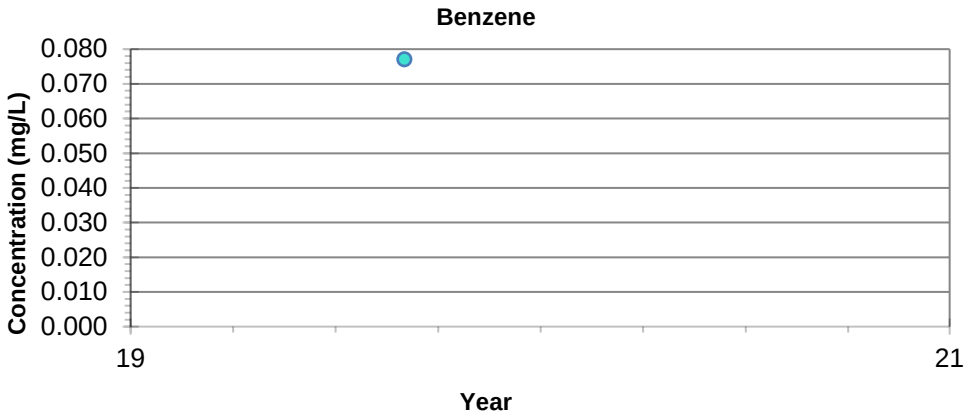

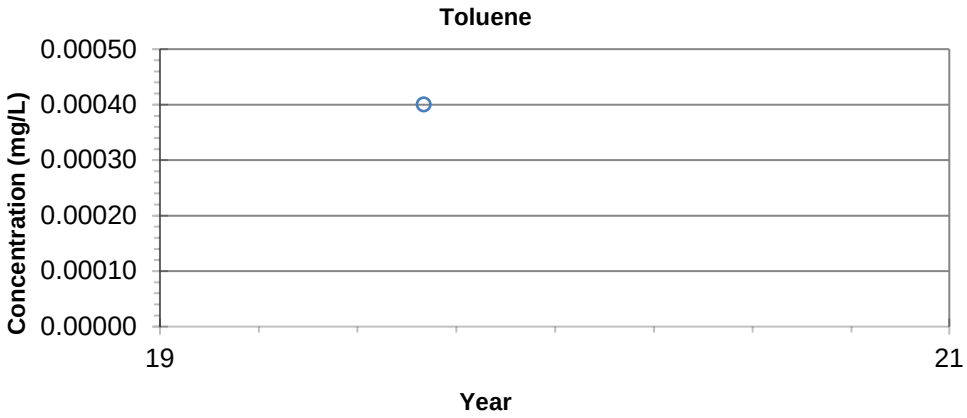

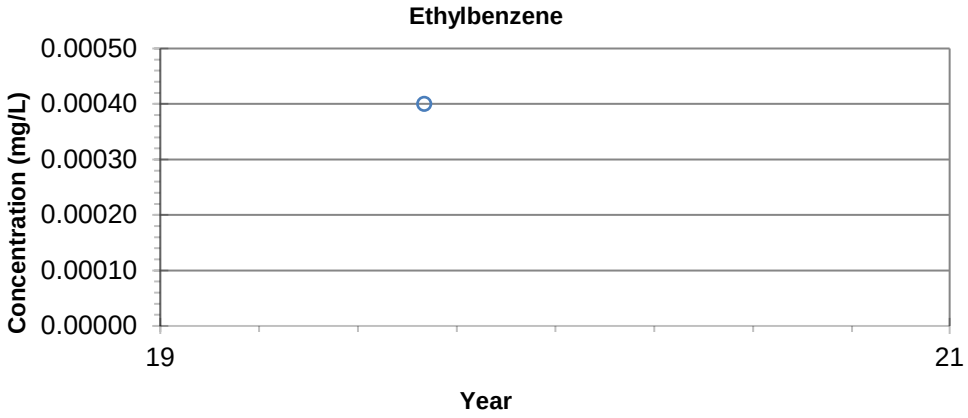

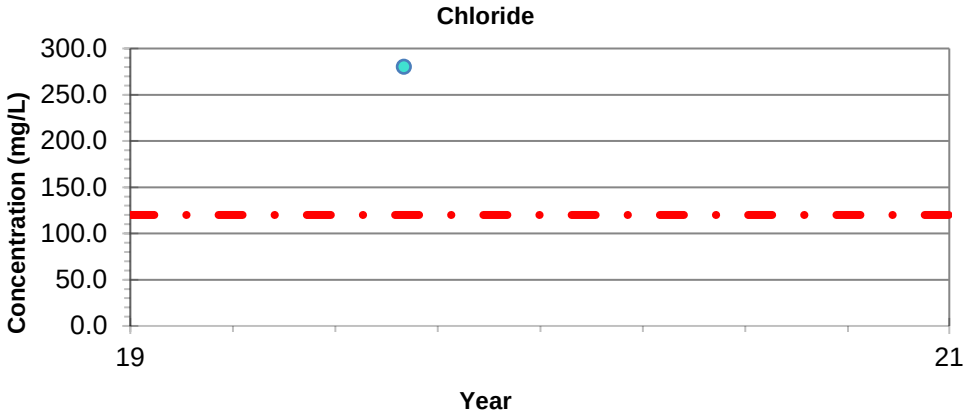

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: E33-19-01-4

23-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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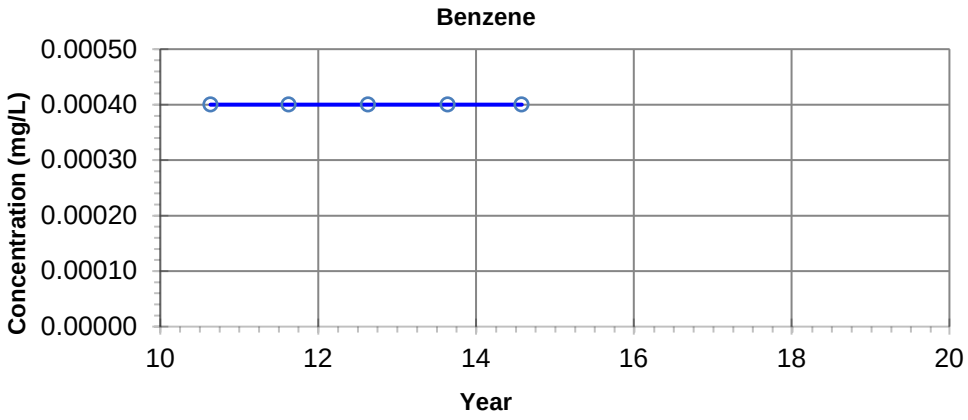

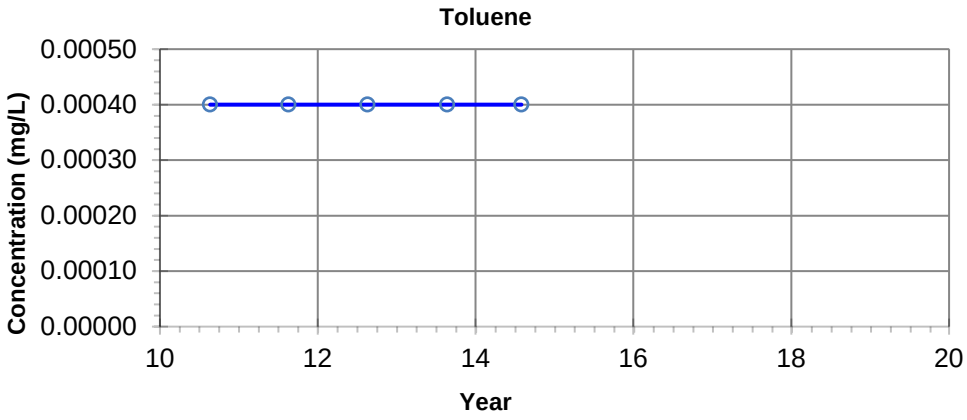

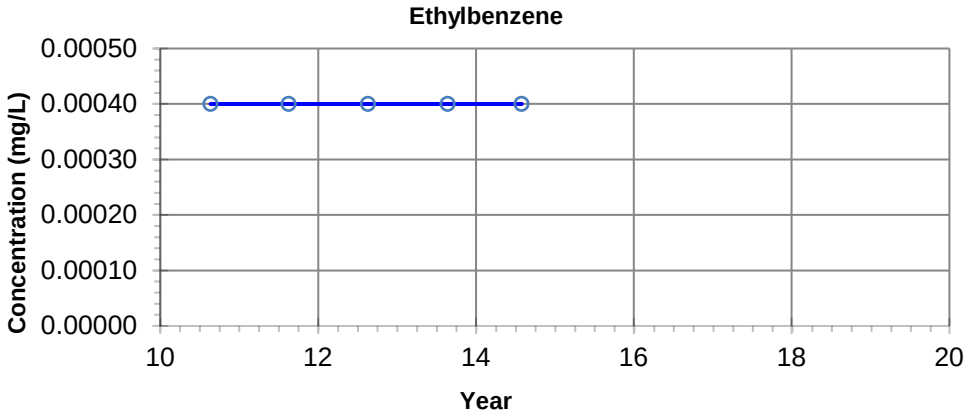

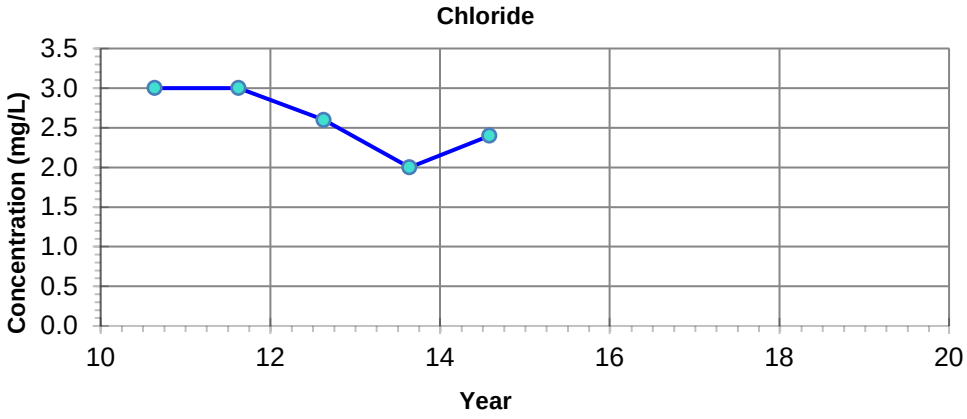

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: CAB 09-3-3

23-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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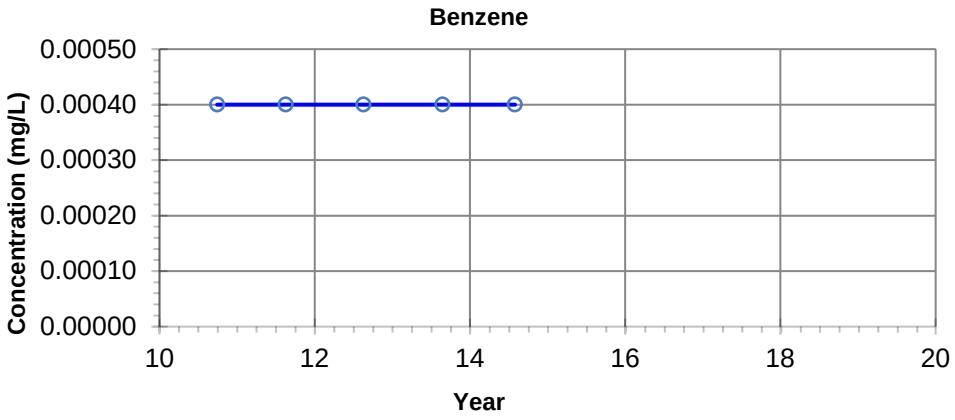

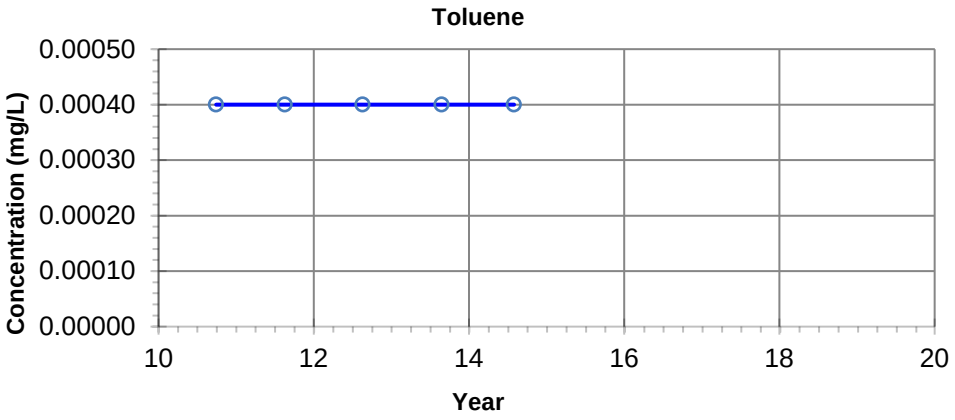

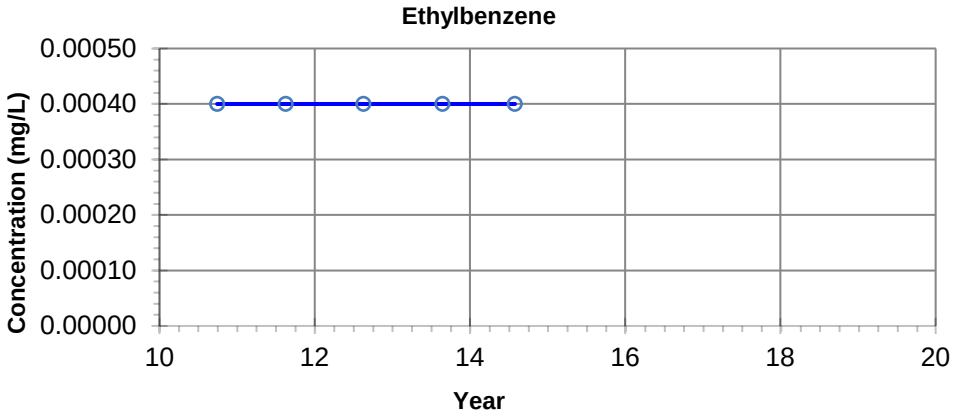

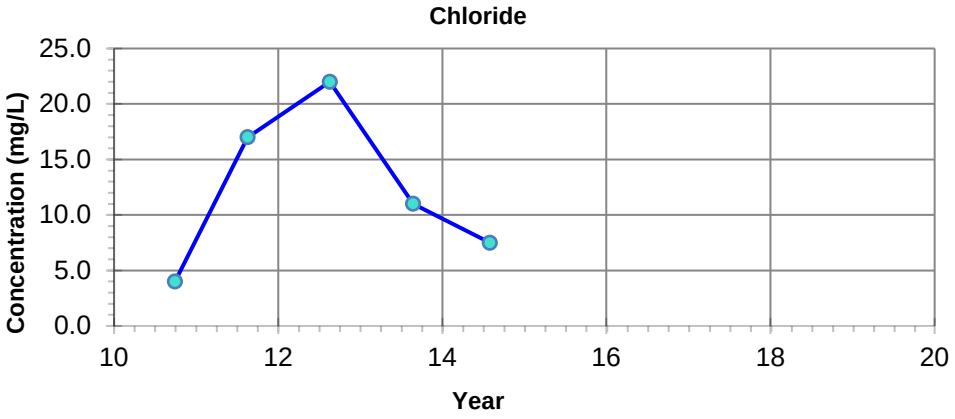

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: FT-10-1-3

23-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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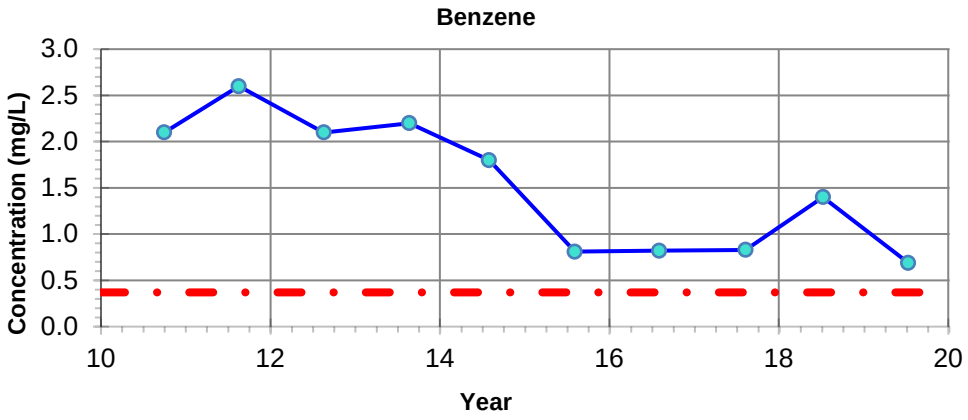

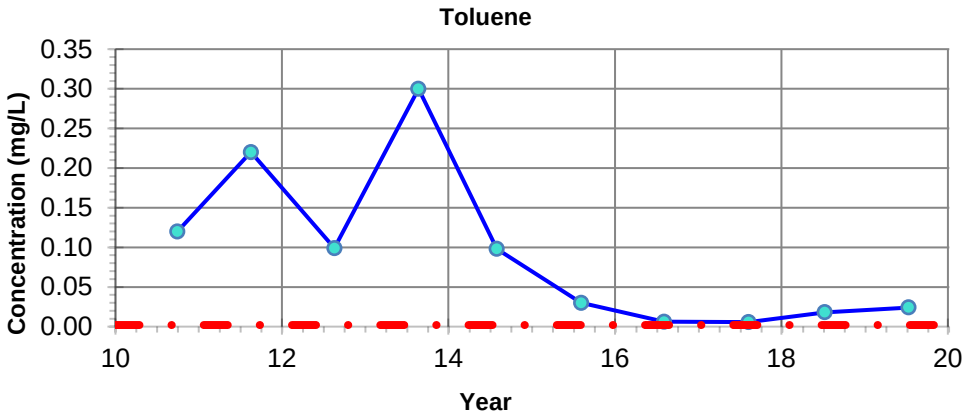

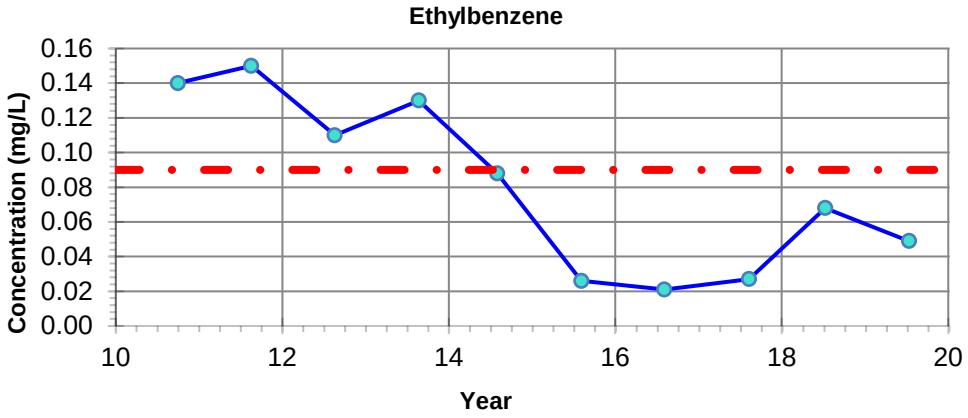

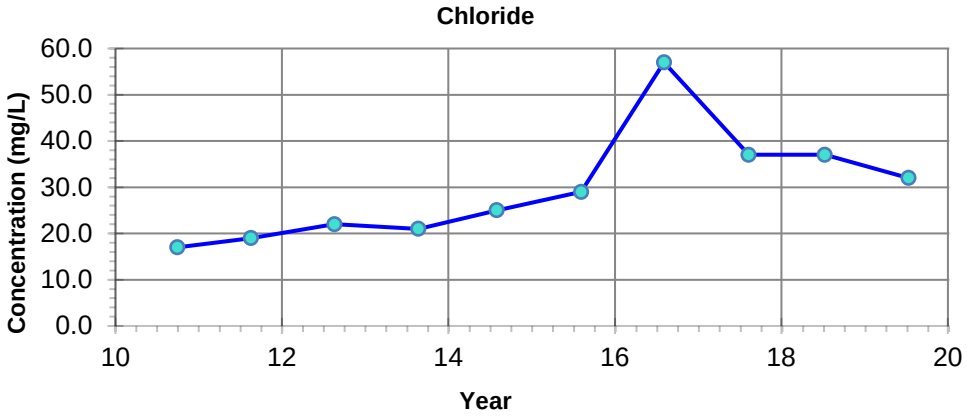

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: C36-10-1-3

23-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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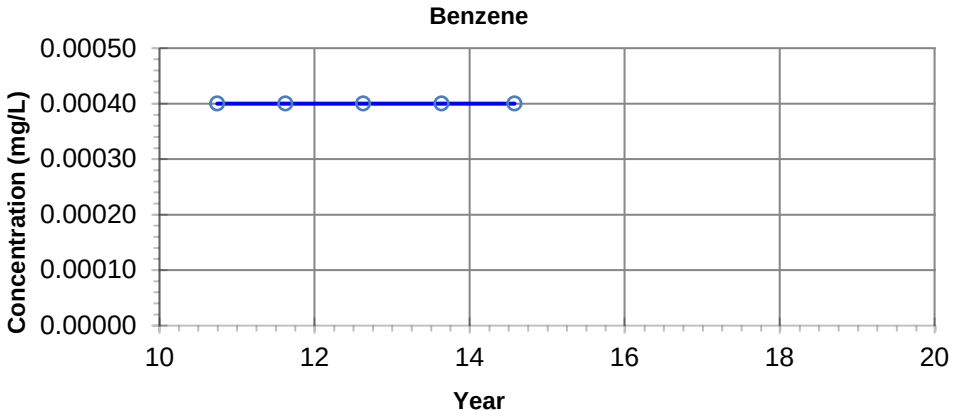

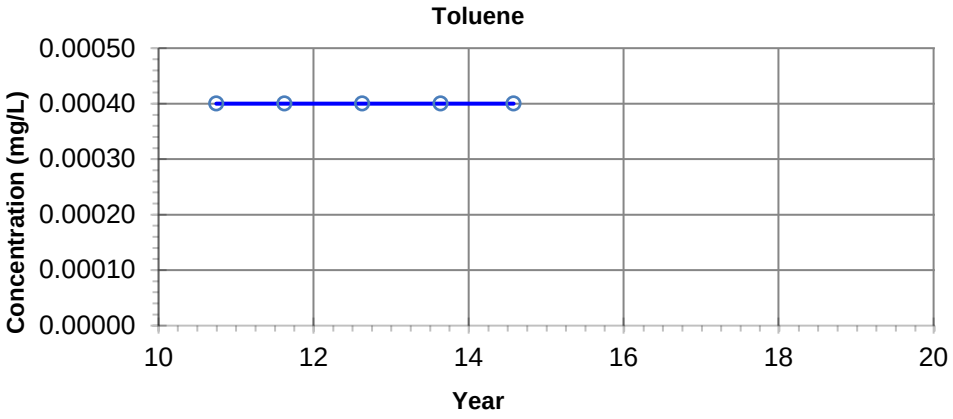

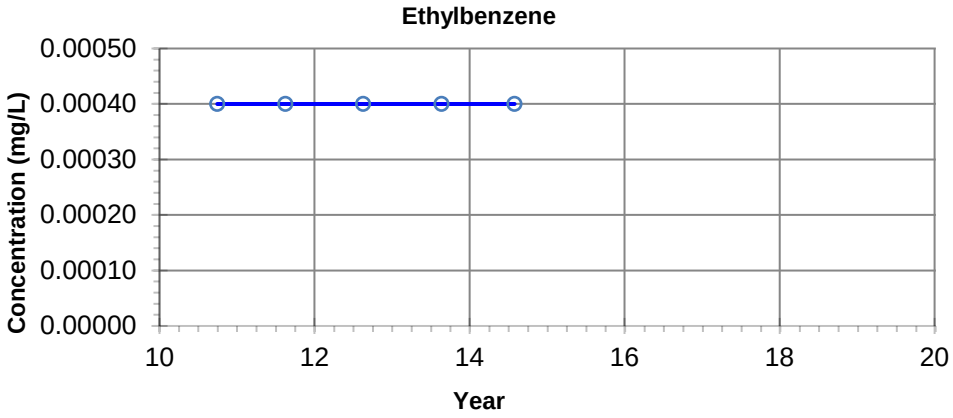

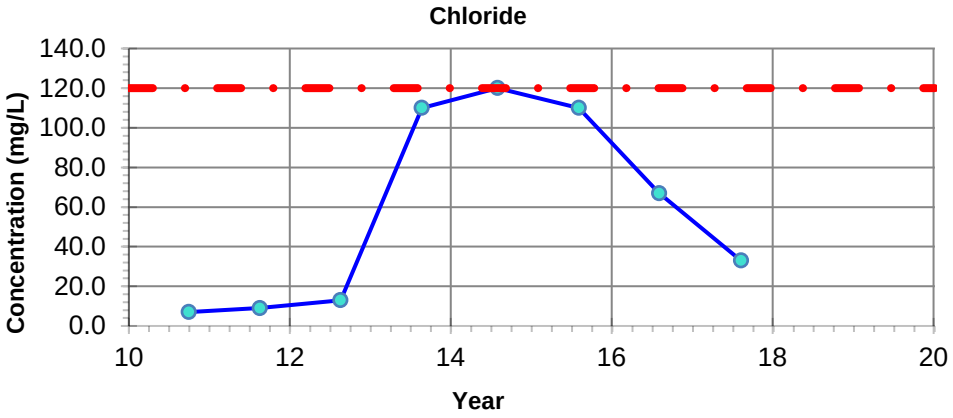

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Petroleum Hydrocarbon and Chloride Concentrations
Location: C36-10-2-3

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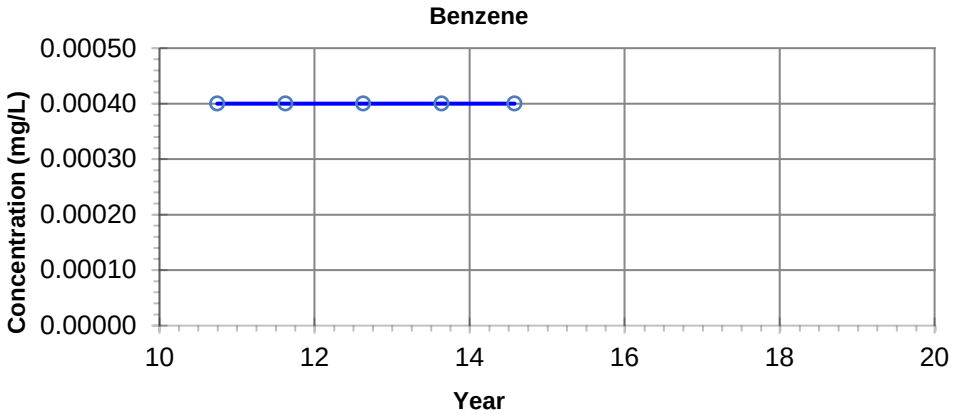

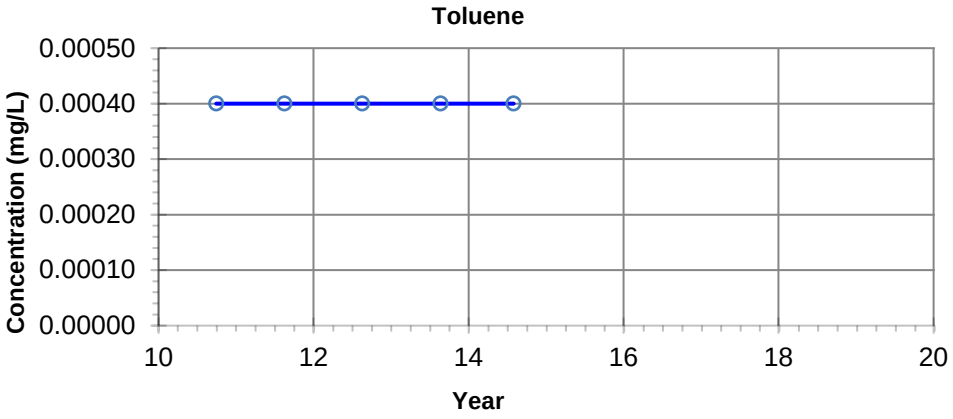

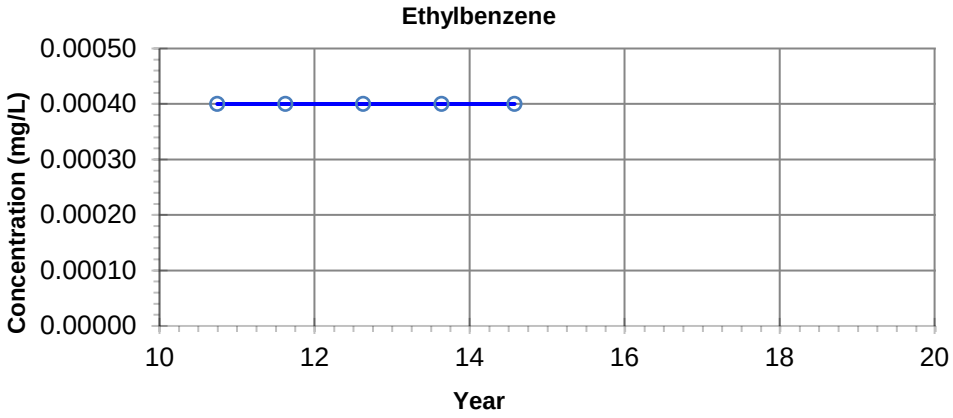

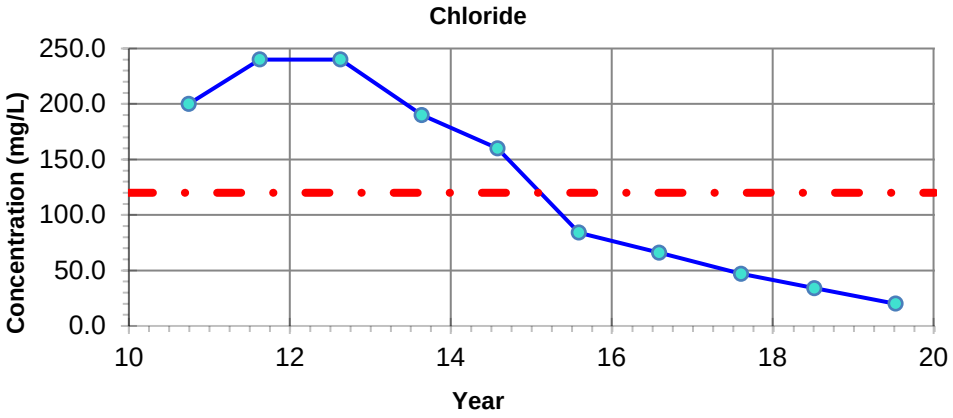

NOTES: - Filled symbols denote Sample Values
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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: C36-10-3-3

23-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

PROJECT NUMBER:
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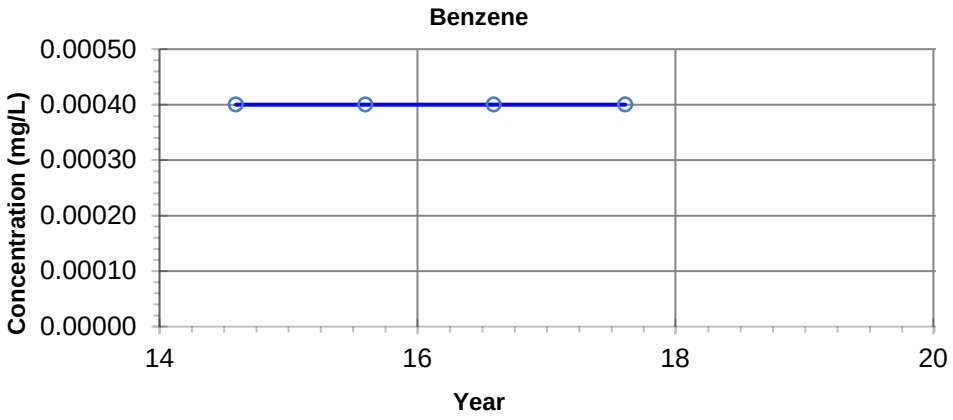

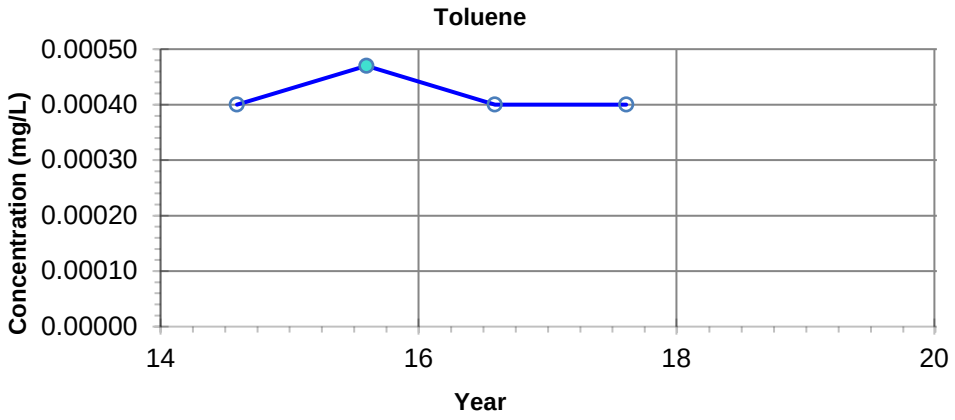

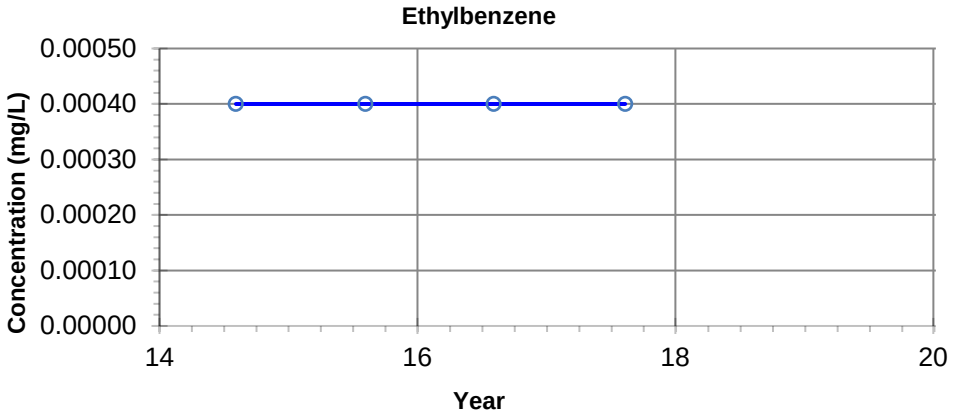

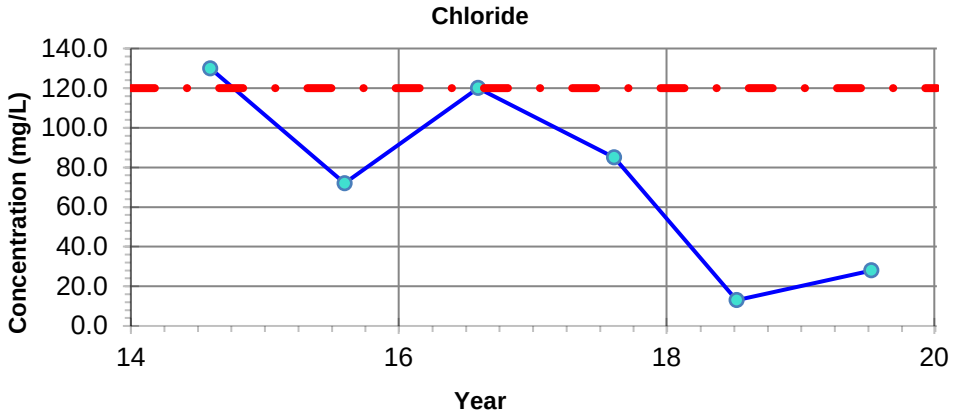

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Benzene - 0.37 mg/L
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Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: C36 SW01

23-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

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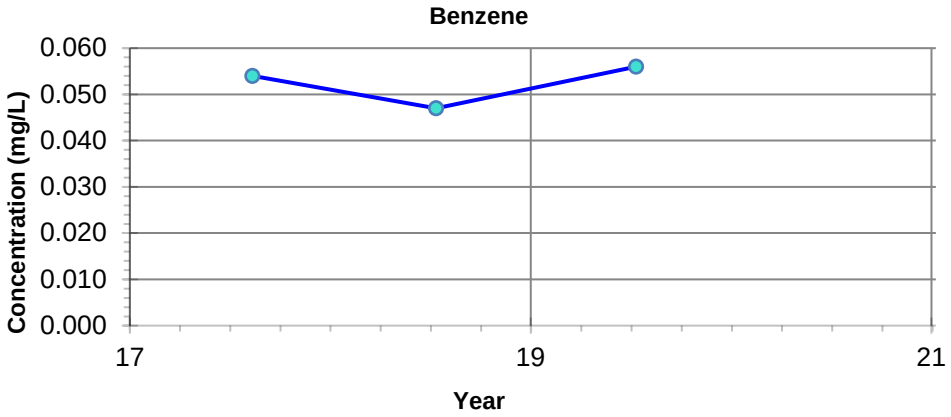

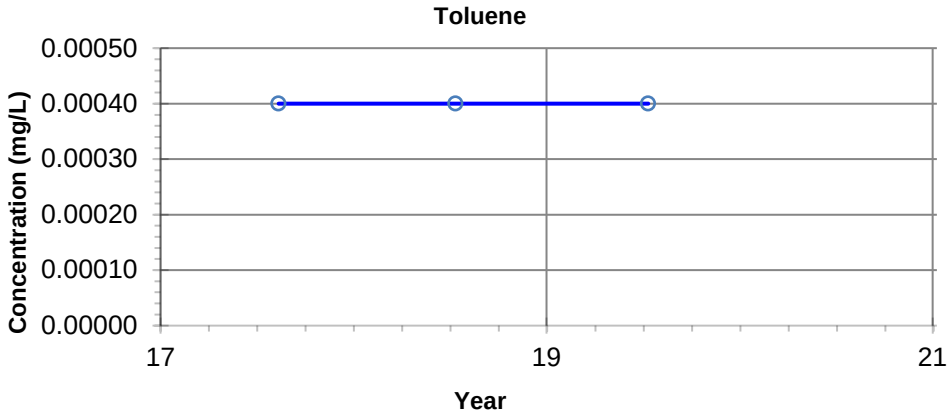

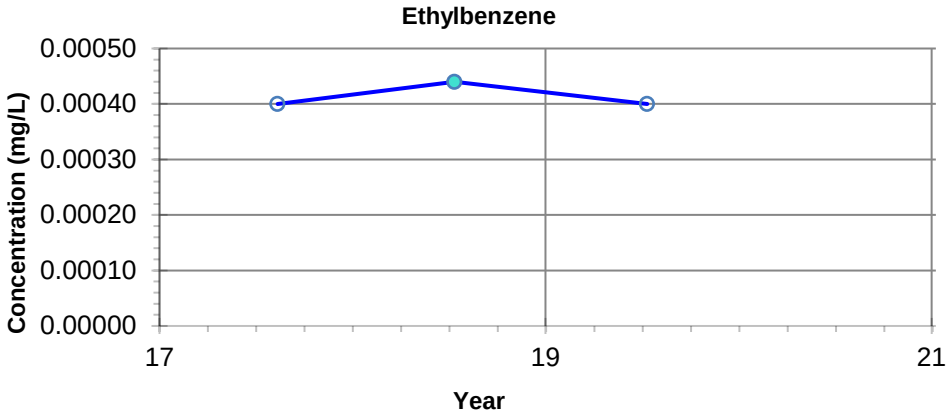

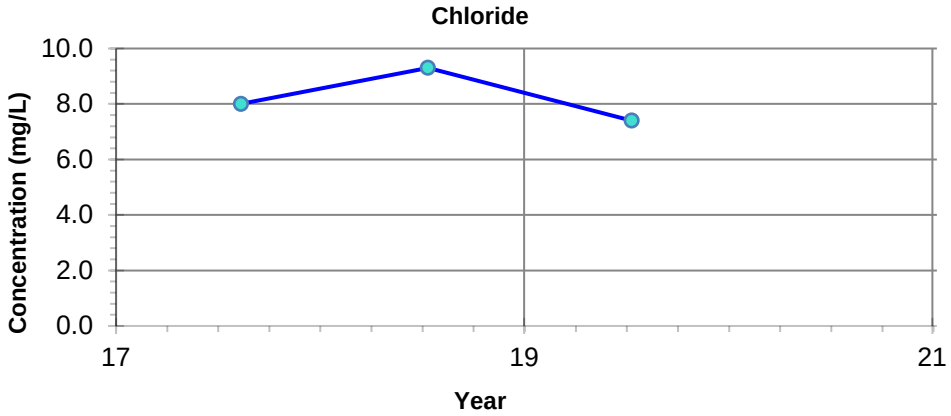

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B38-16-1-3

23-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

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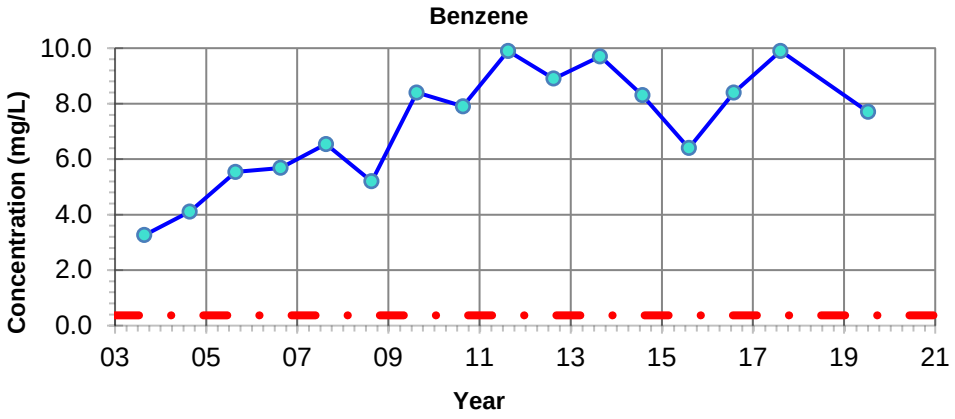

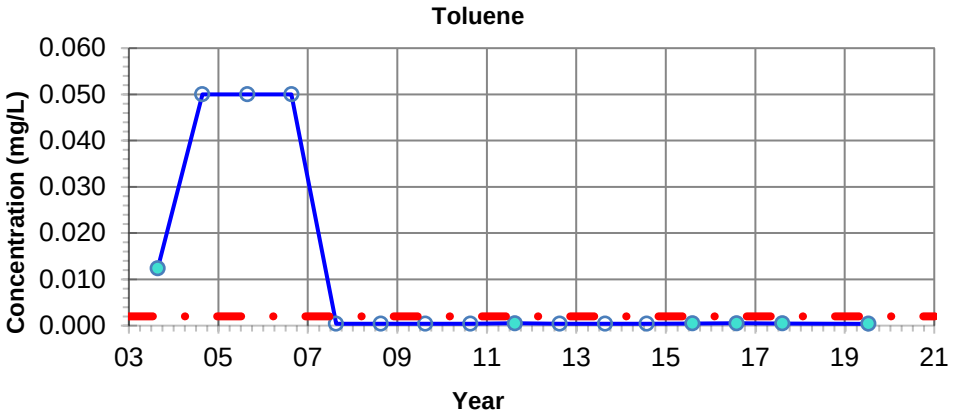

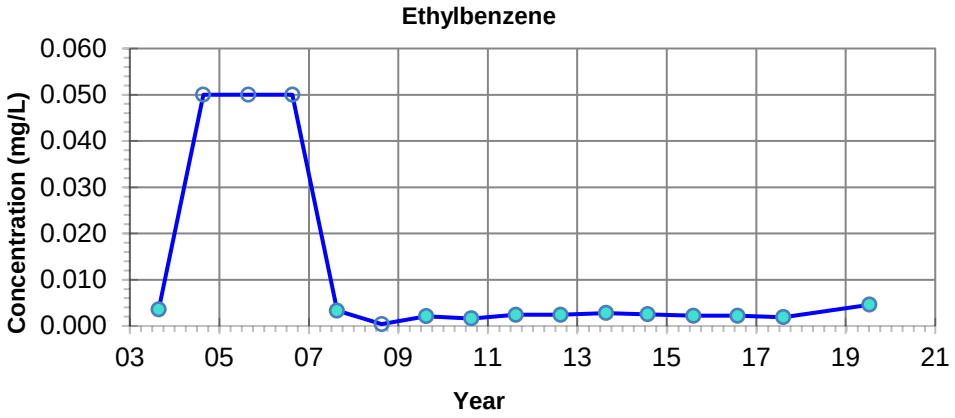

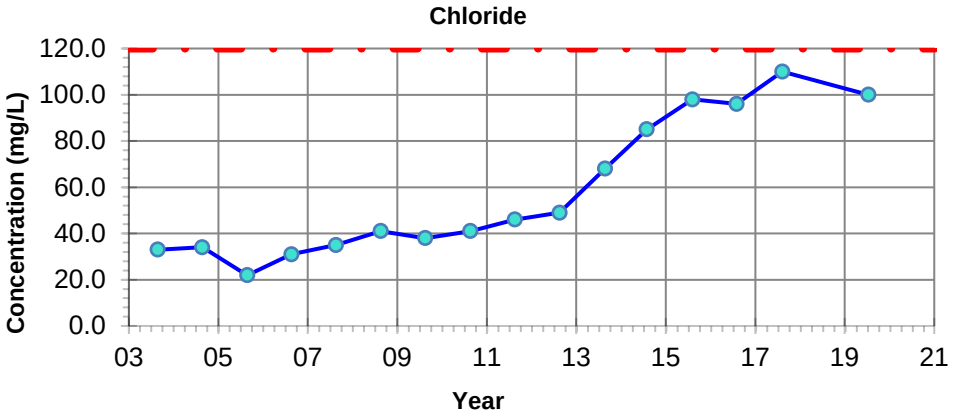

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B38 03-38-5

23-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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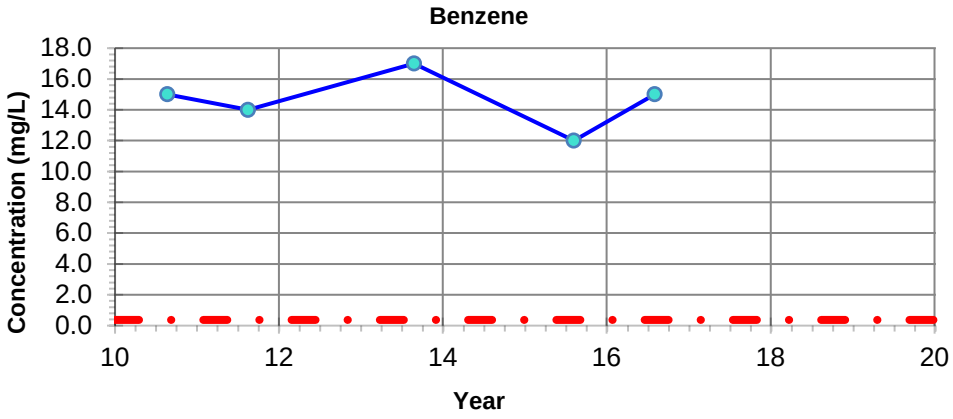

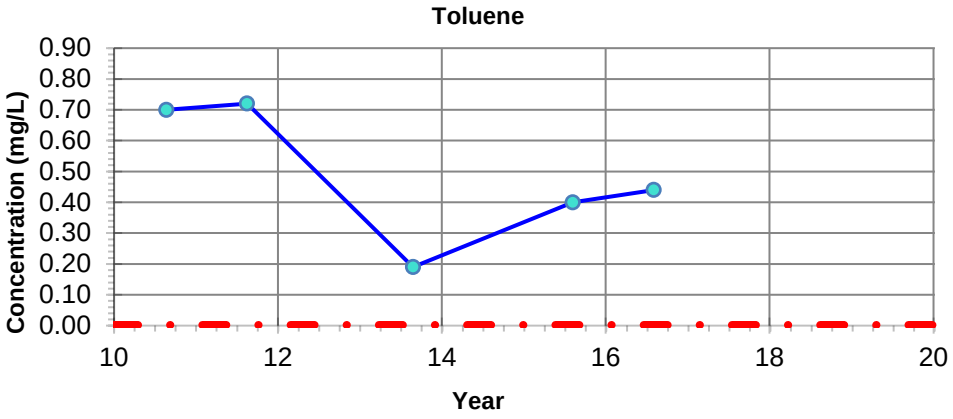

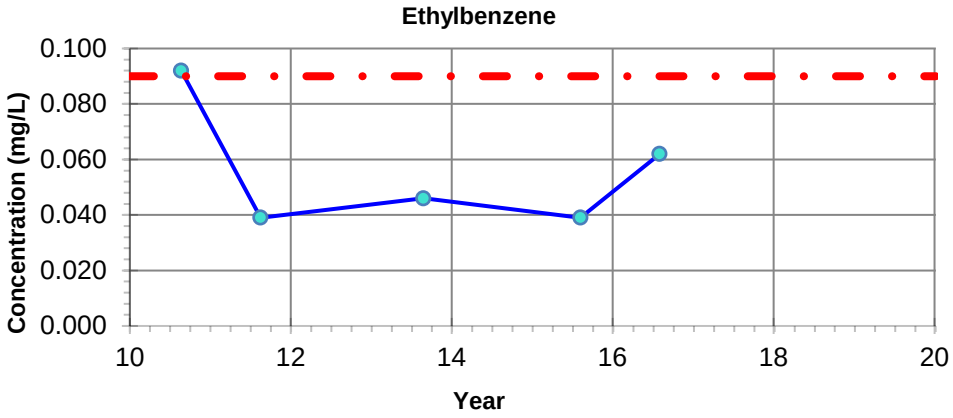

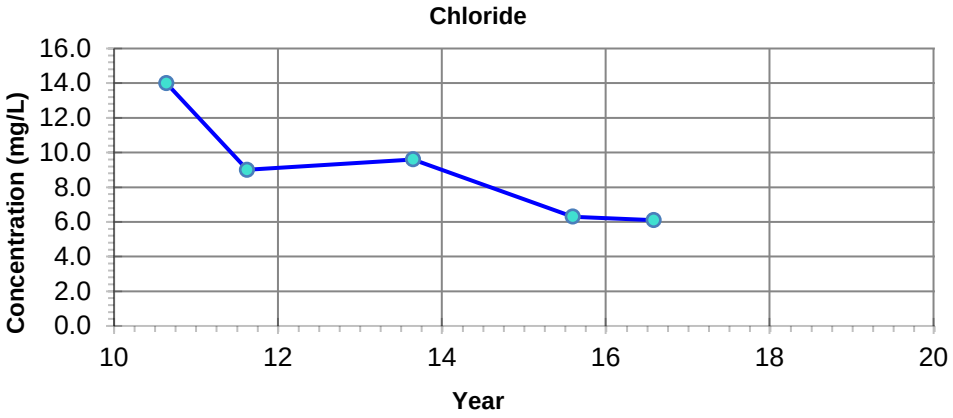

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B38 08-2-4

23-Mar-2020 date	NA edited by	JC drawn by	NA app by

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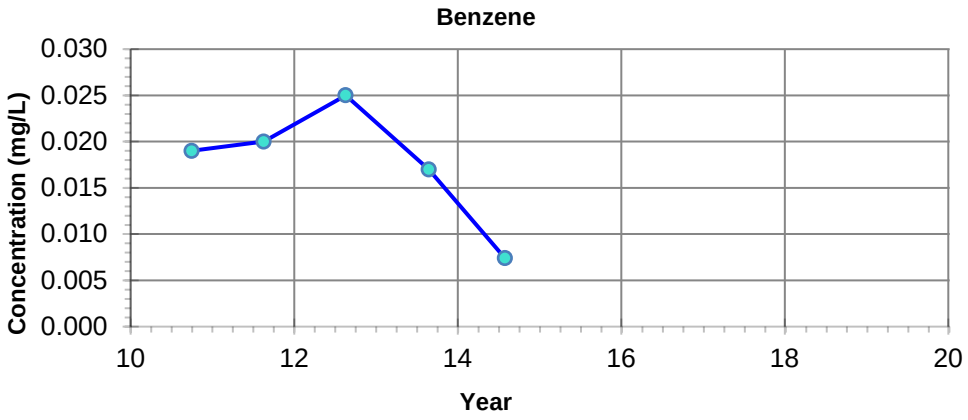

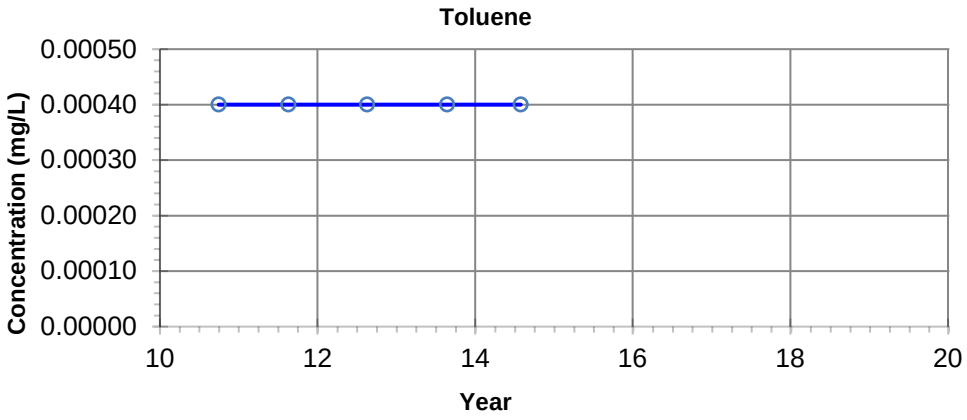

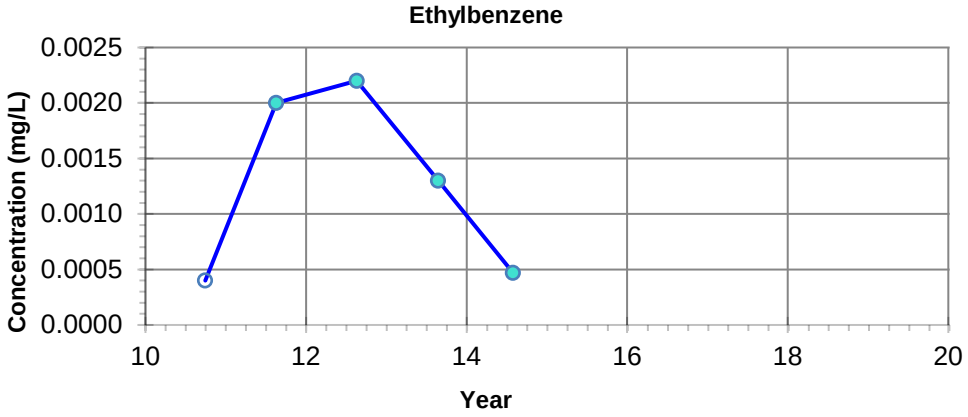

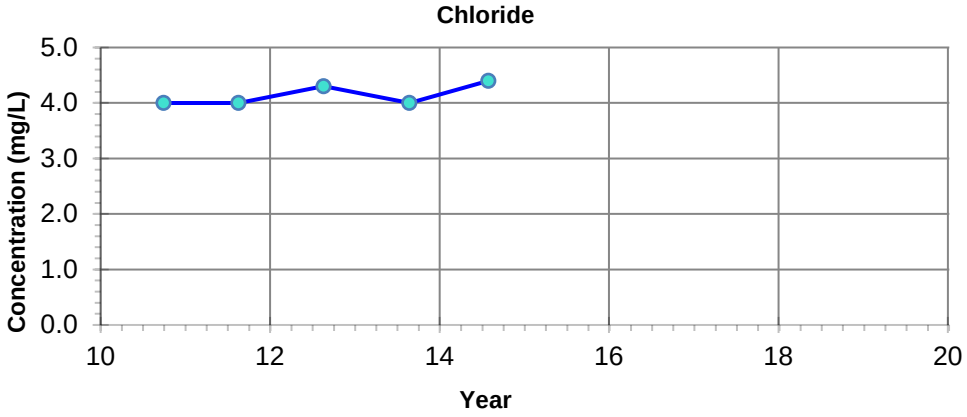

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B38-10-1-5

23-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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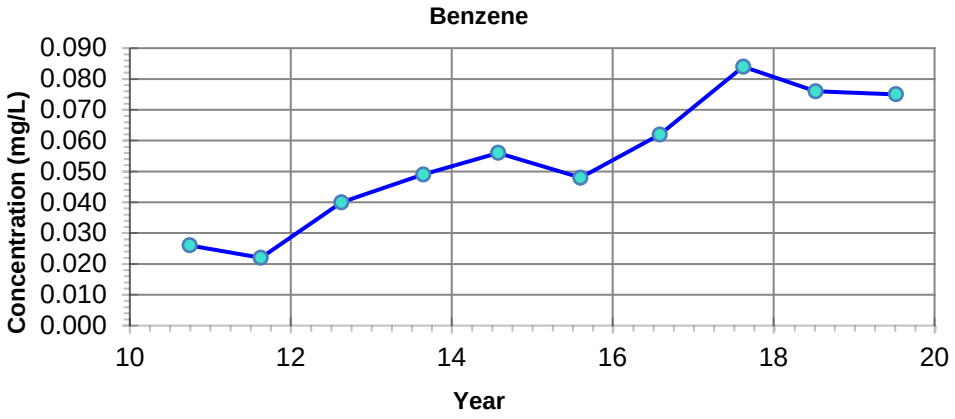

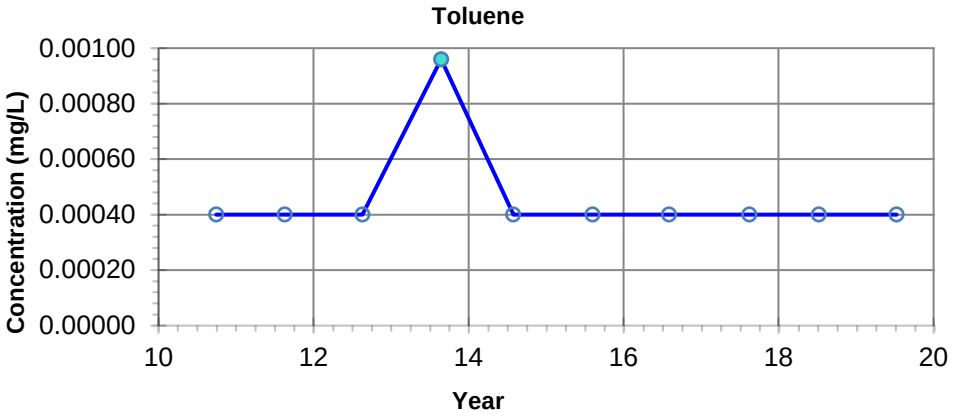

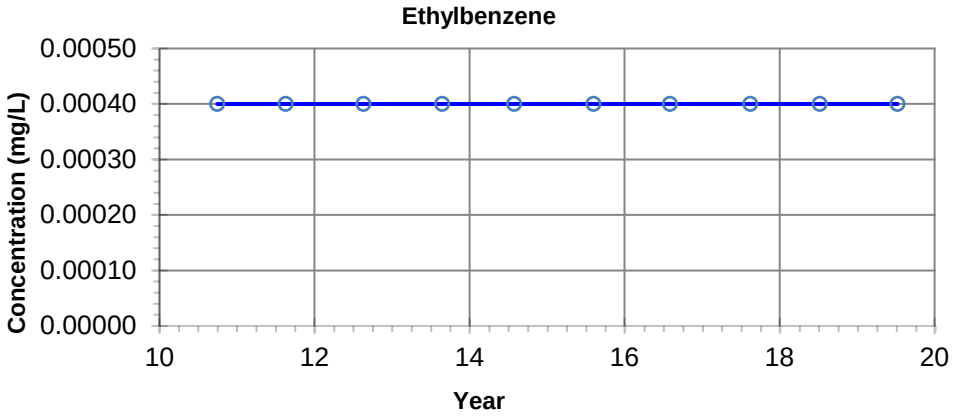

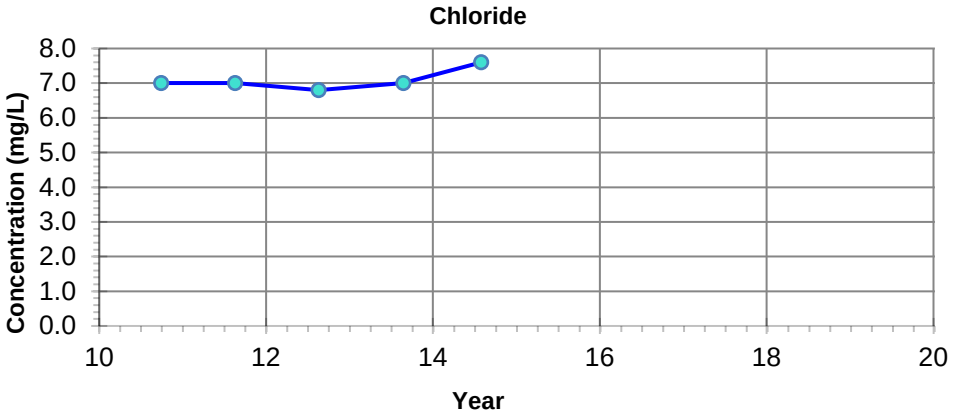

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B38-10-2-5

23-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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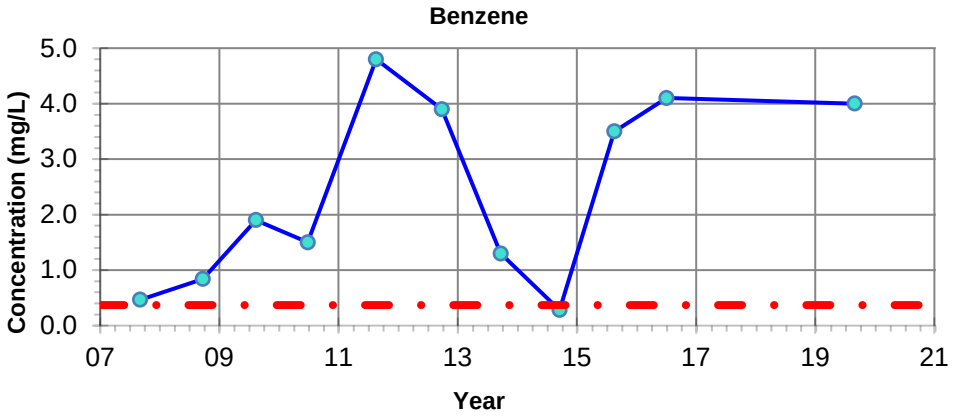

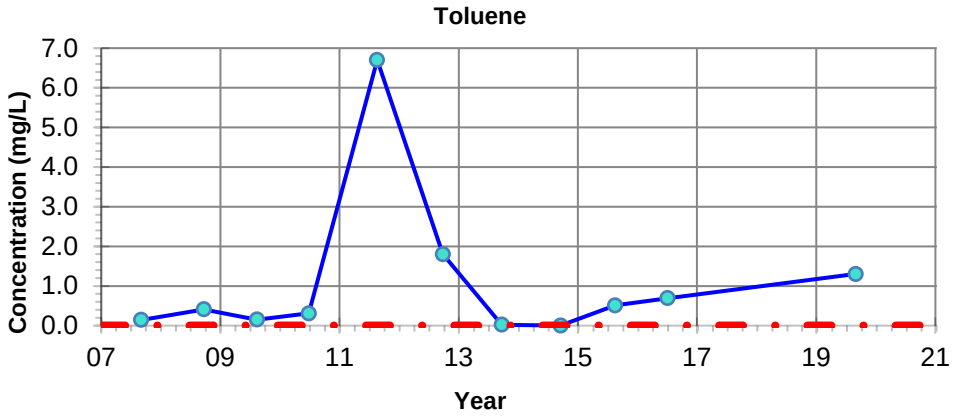

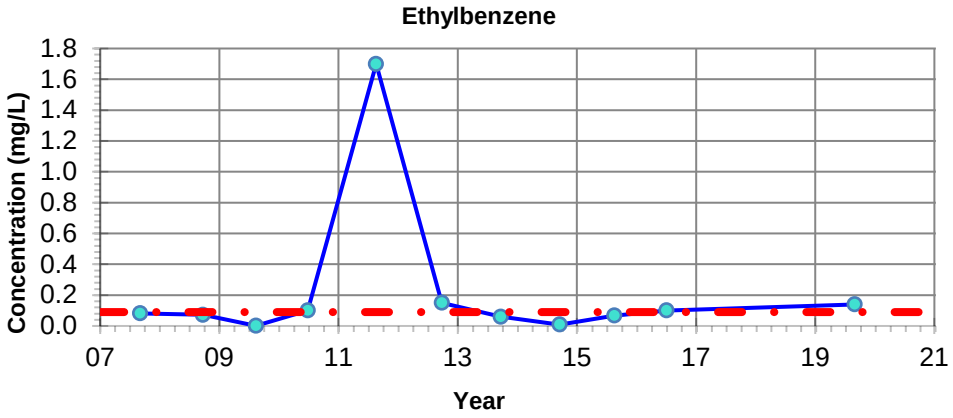

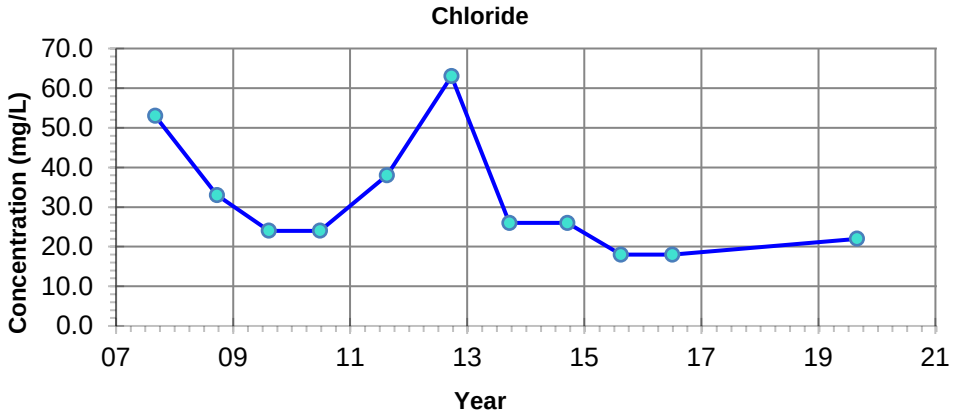

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B38-N-INLET

23-Mar-2020 date	NA edited by	JC drawn by	NA app by

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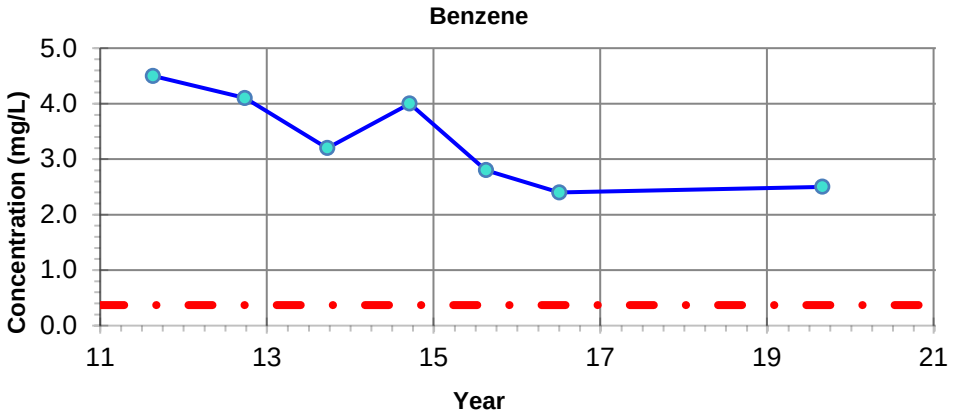

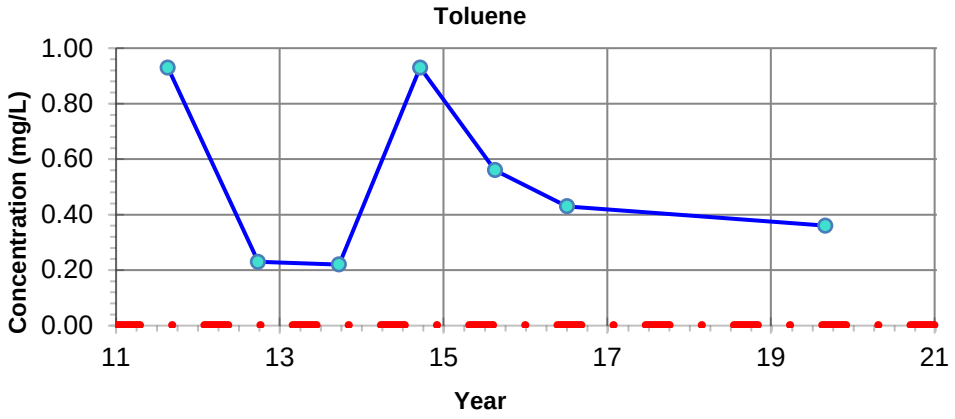

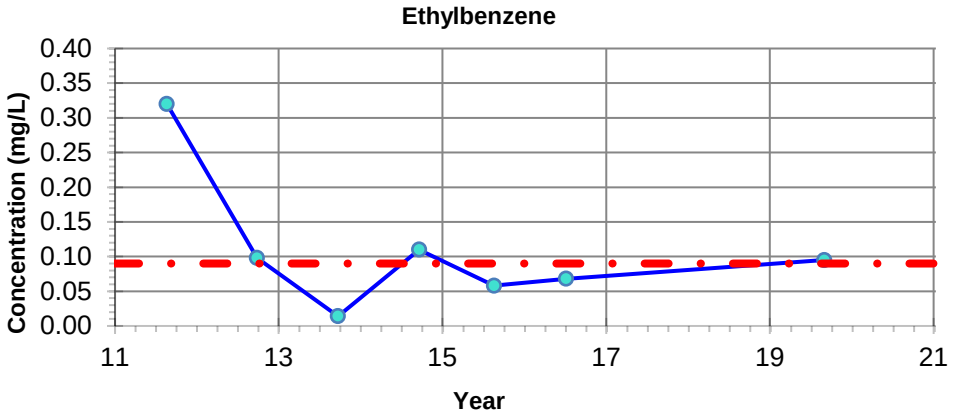

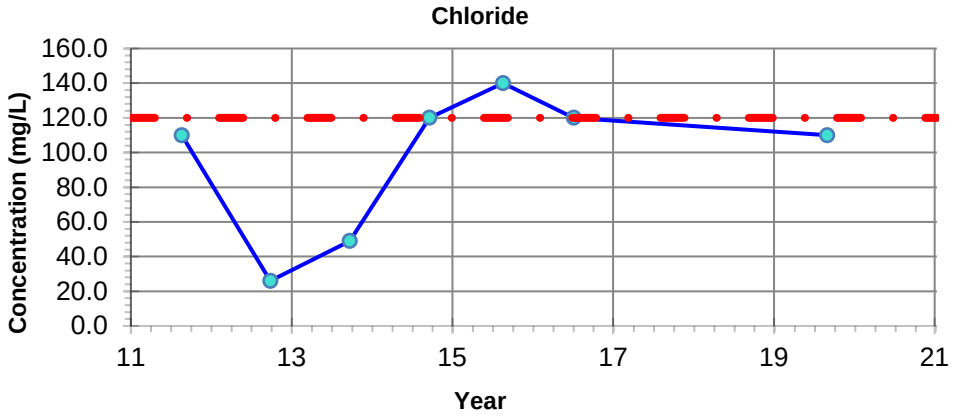

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: FTA-N-INLET

23-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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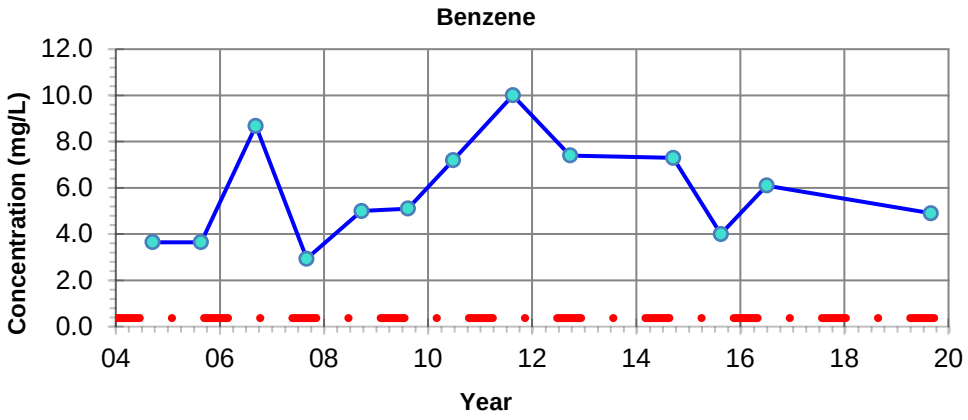

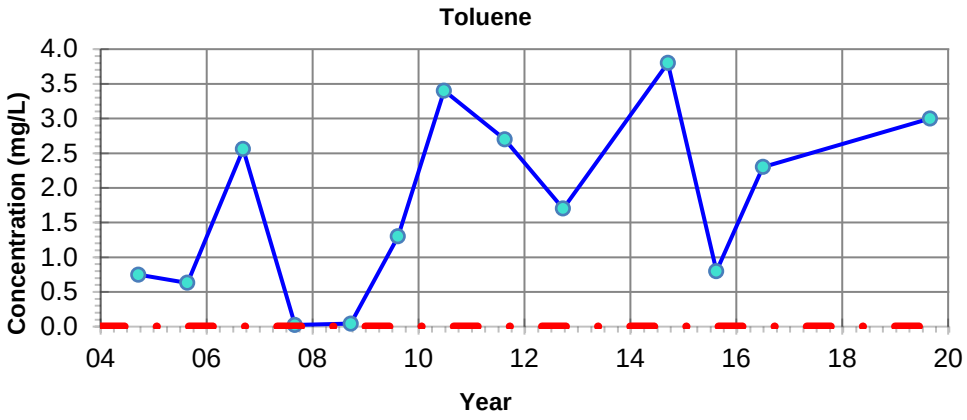

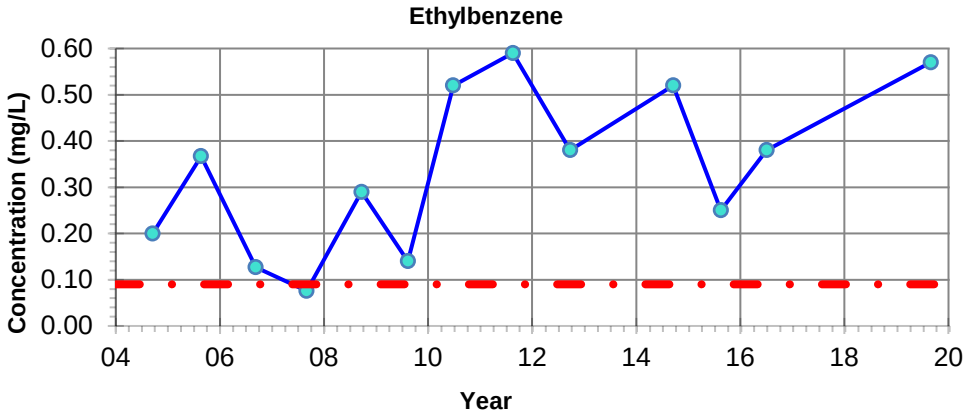

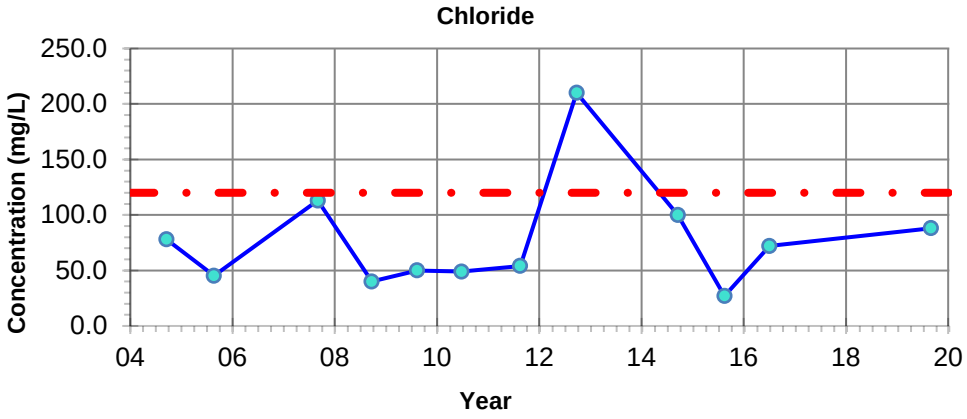

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: LT7-INLET

23-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

Advisian
Worley Group

PROJECT NUMBER:
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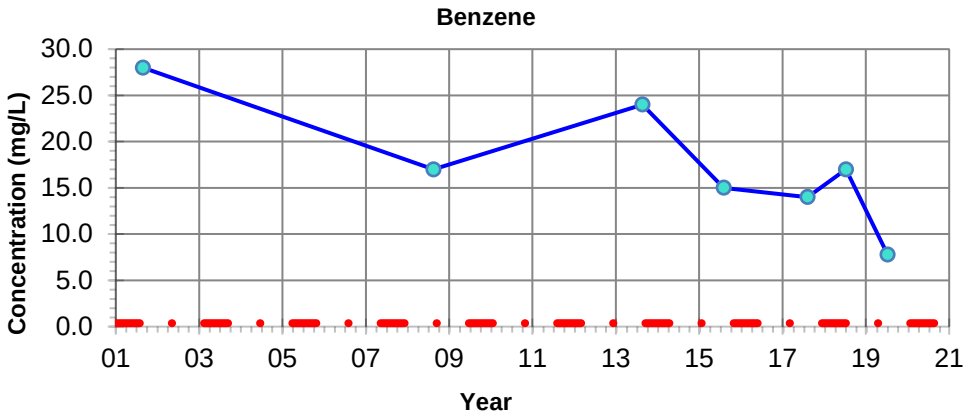

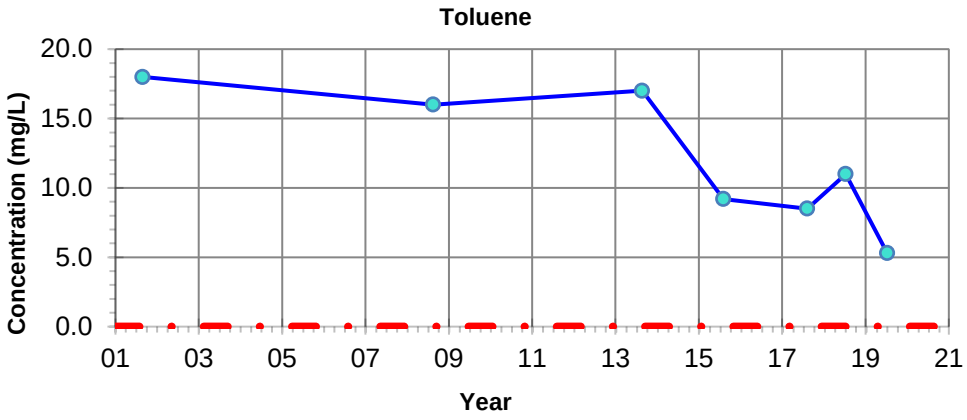

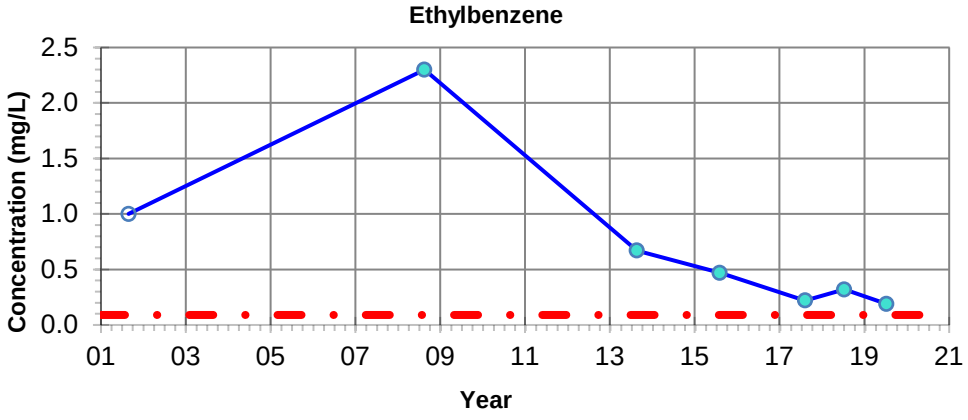

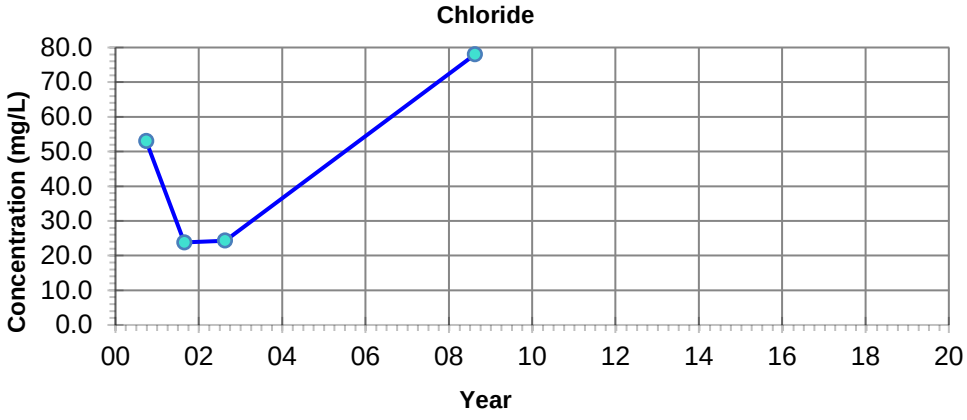

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: FTA 98-4-5

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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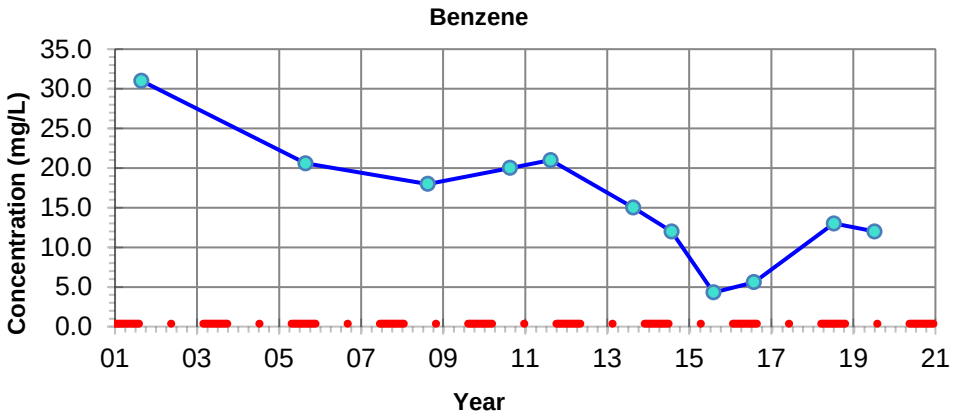

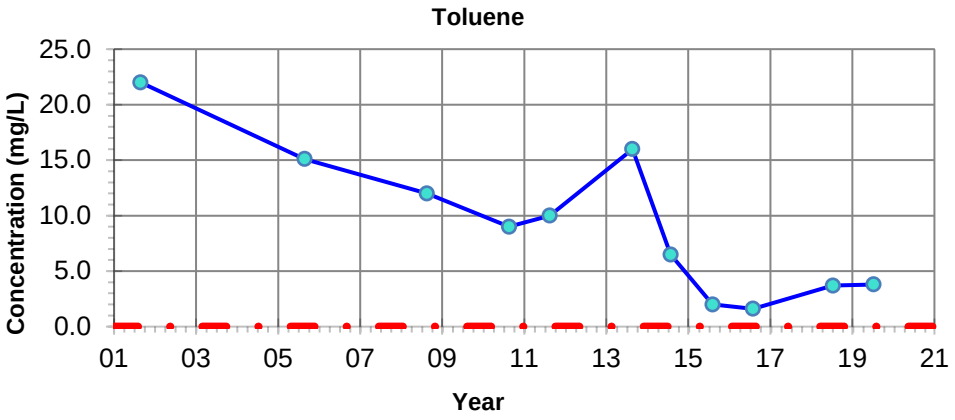

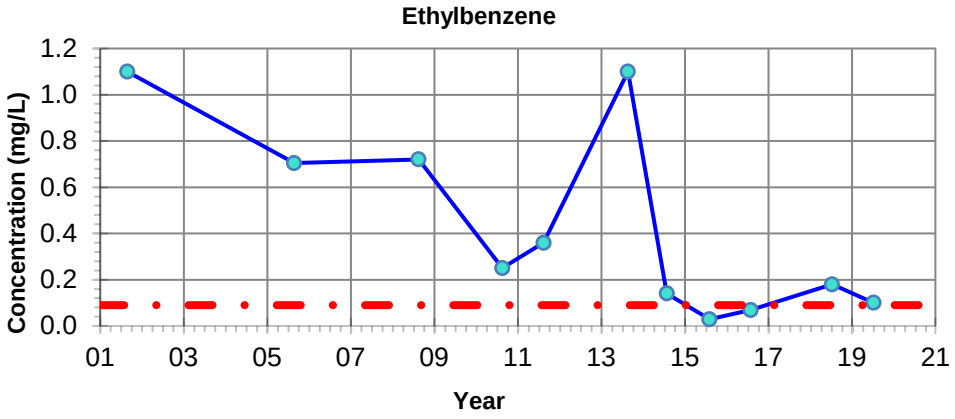

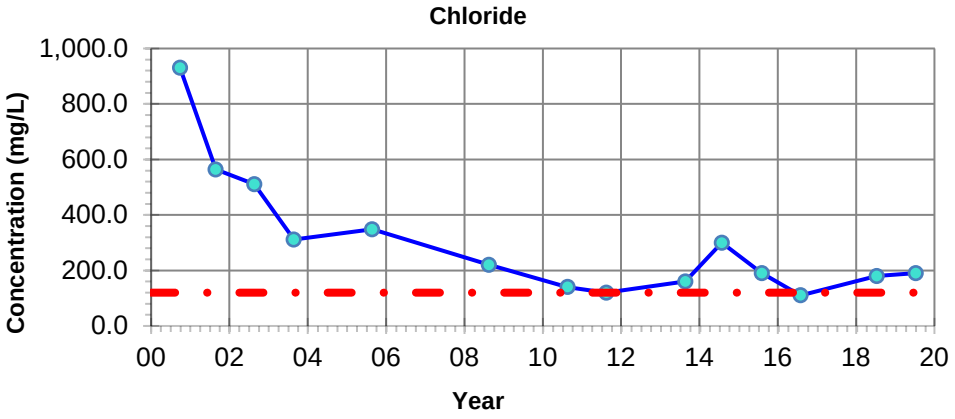

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: FTA 99-2-4

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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Worley Group

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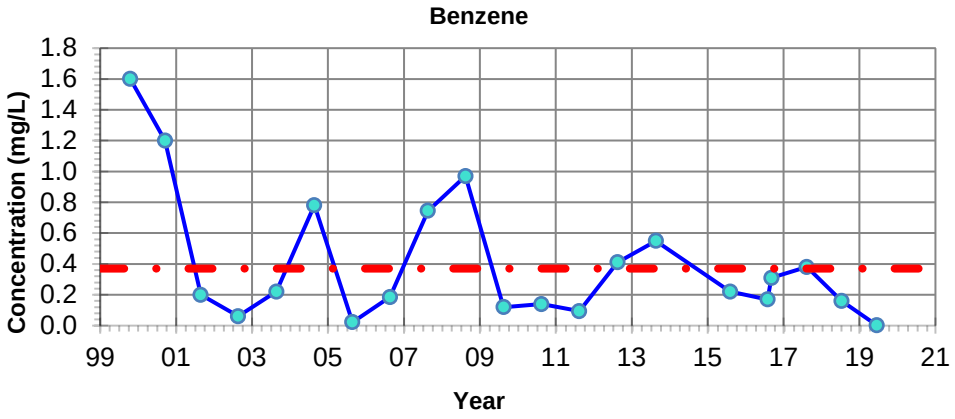

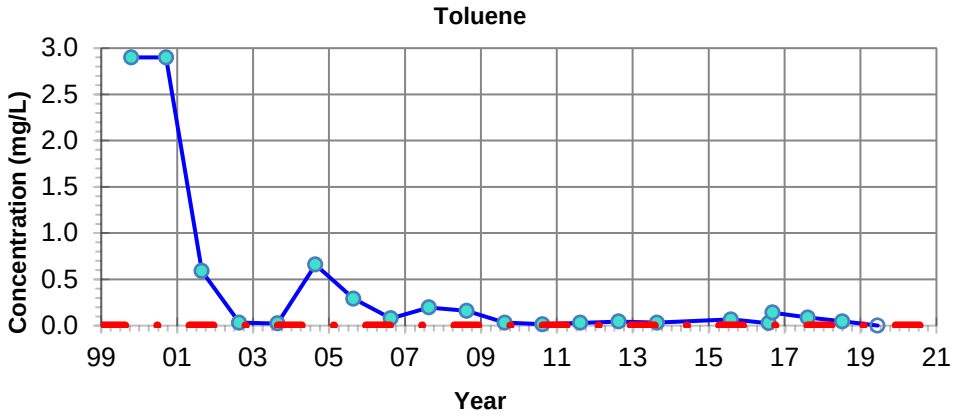

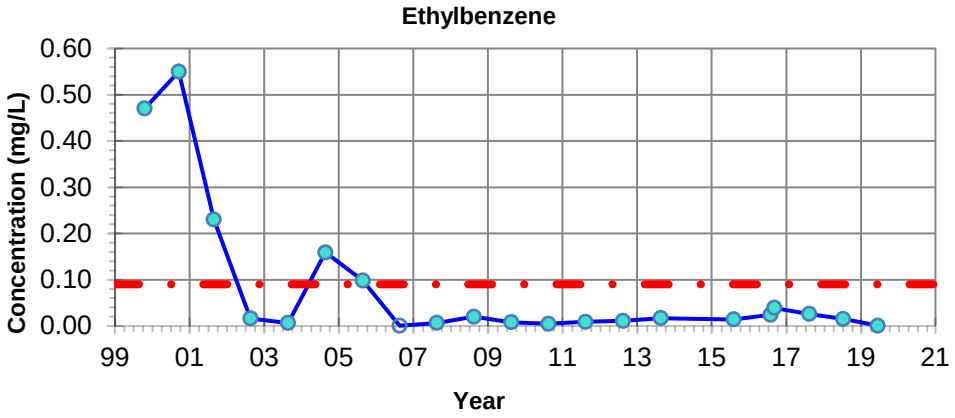

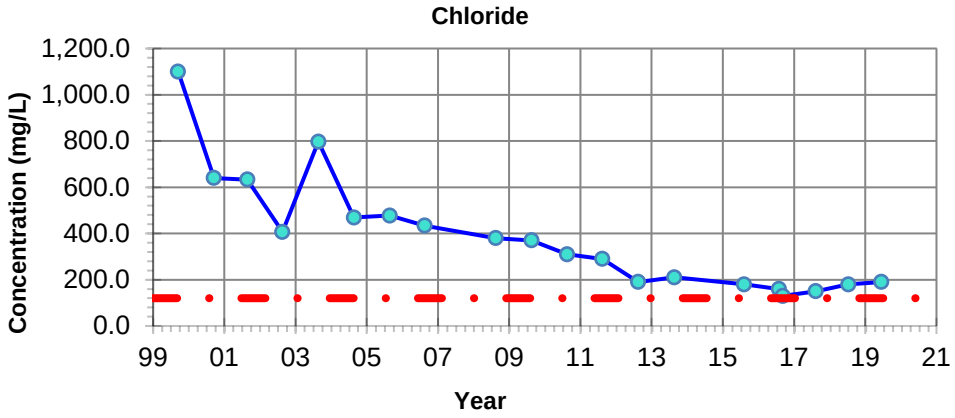

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: FTA 99-3-4

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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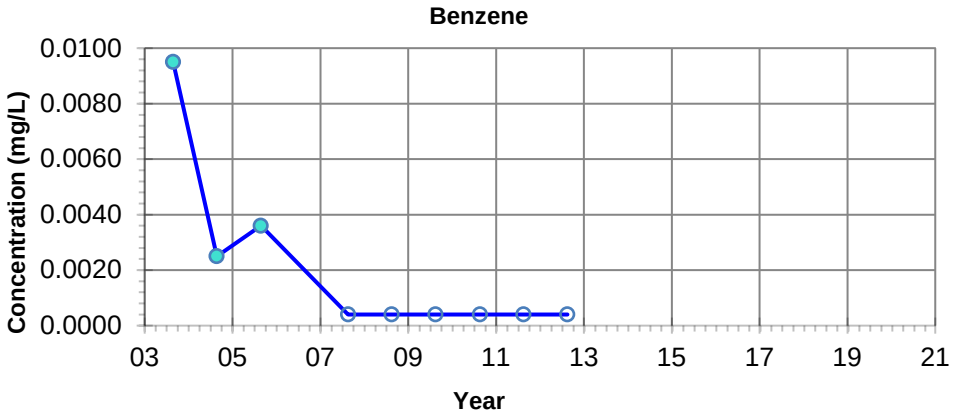

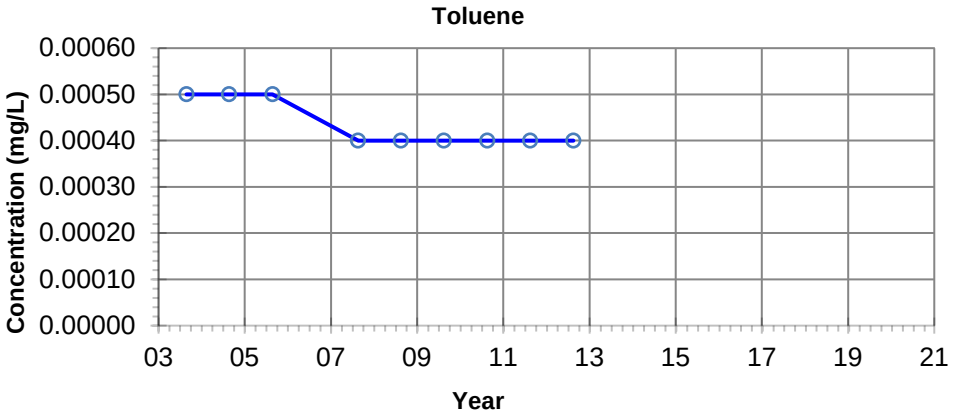

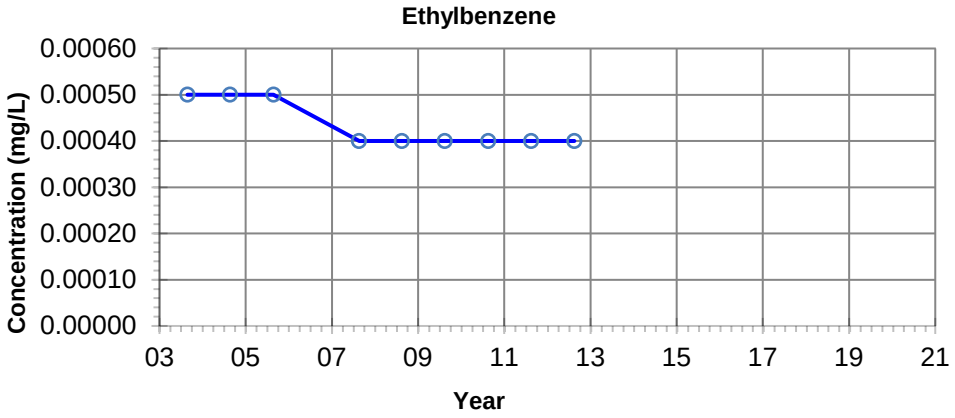

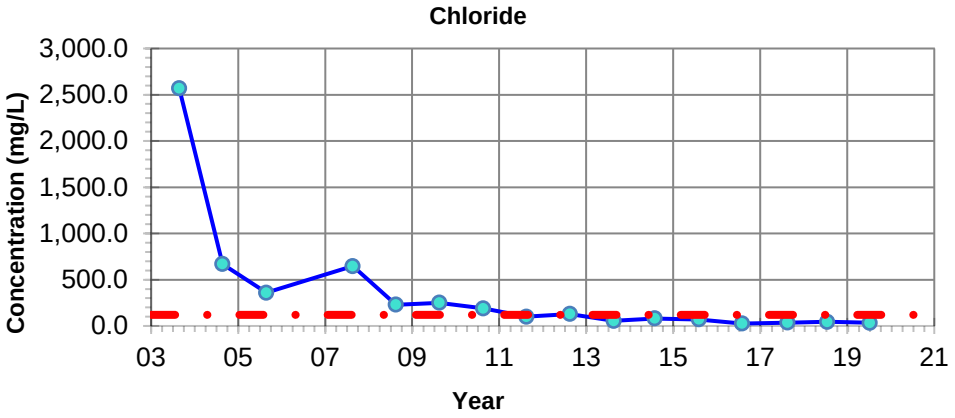

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RCF 03-1-5

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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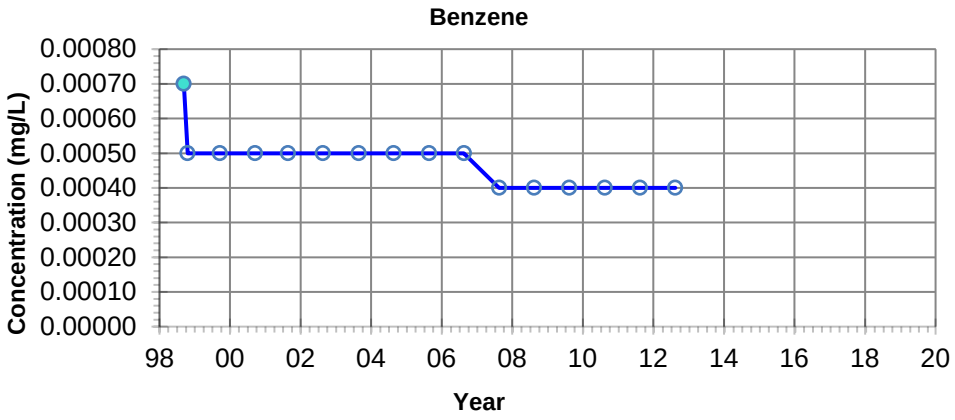

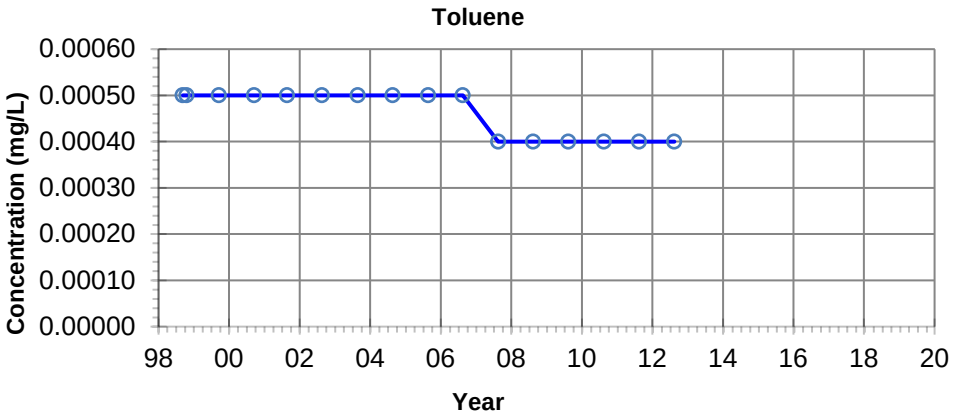

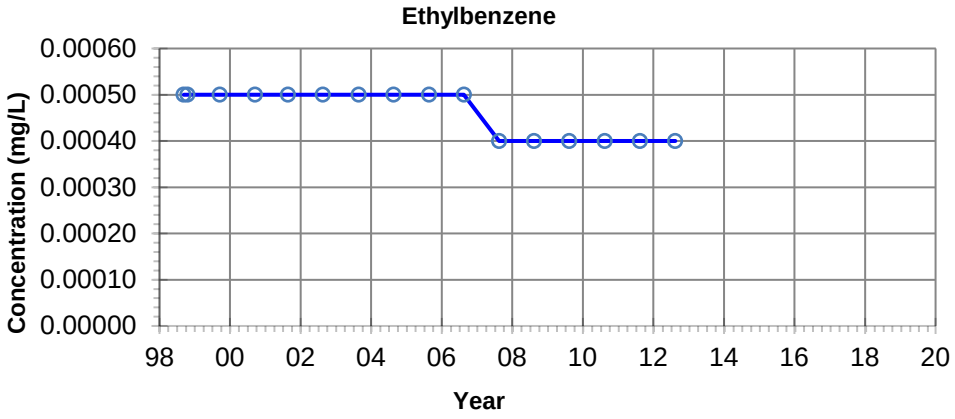

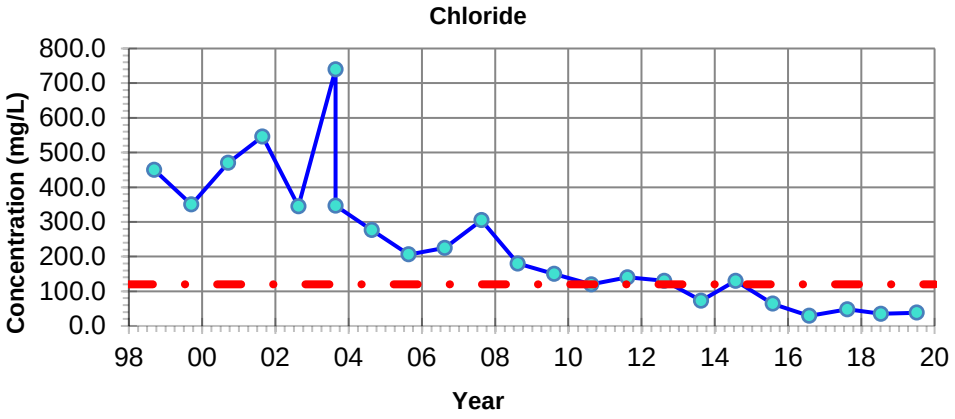

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RCF 98-3-4

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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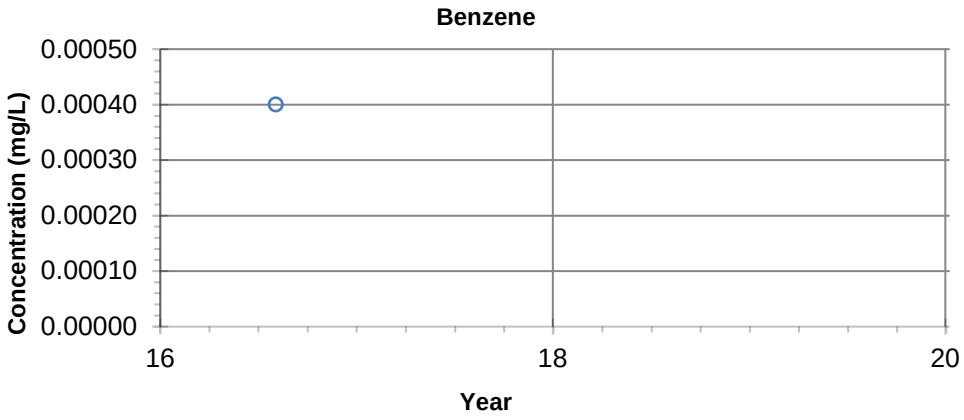

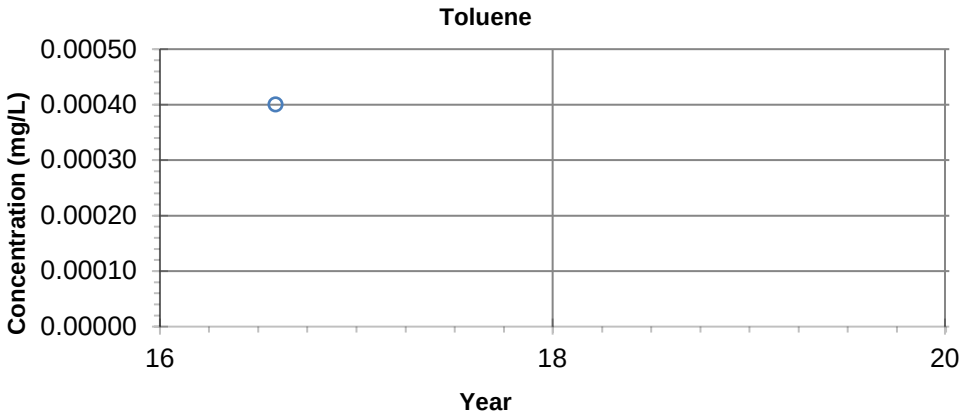

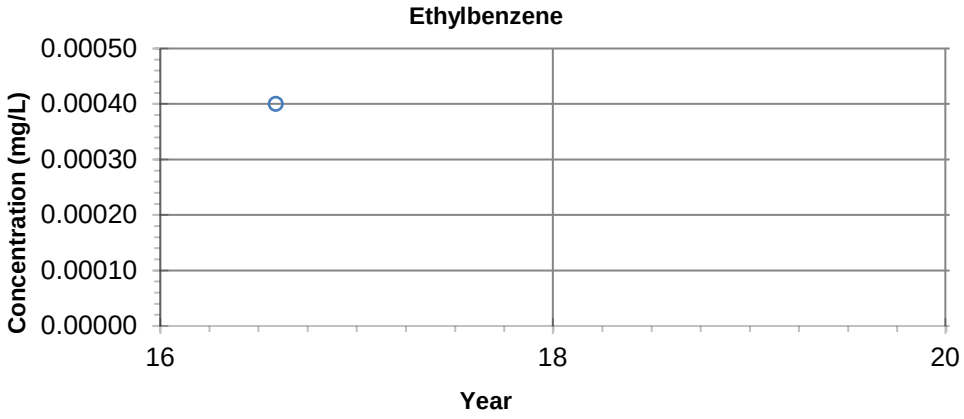

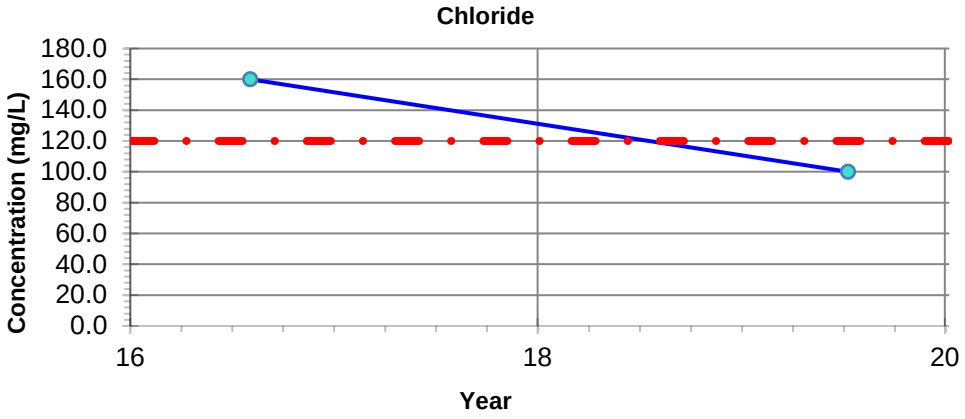

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RCF-16-SW01

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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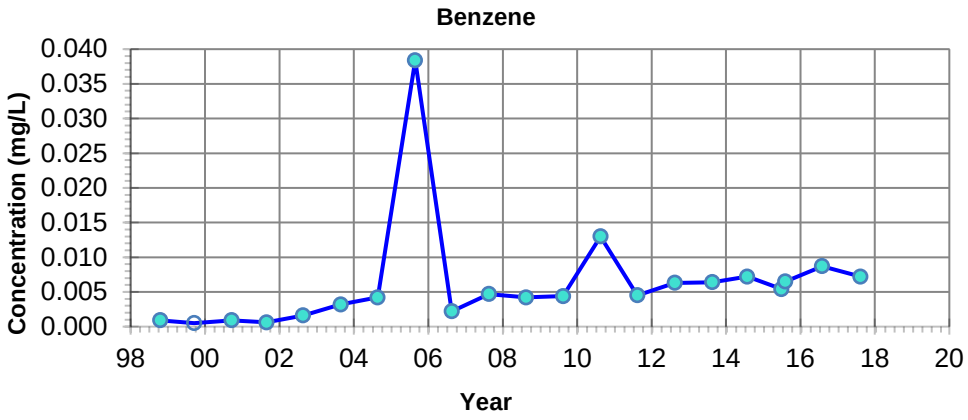

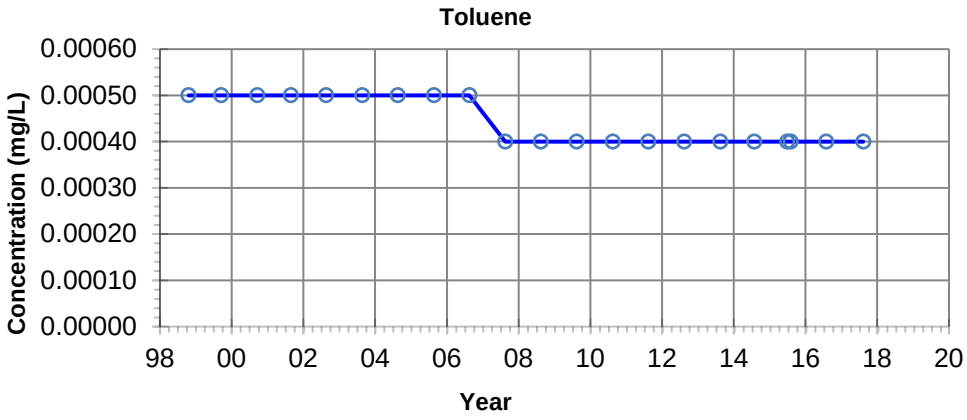

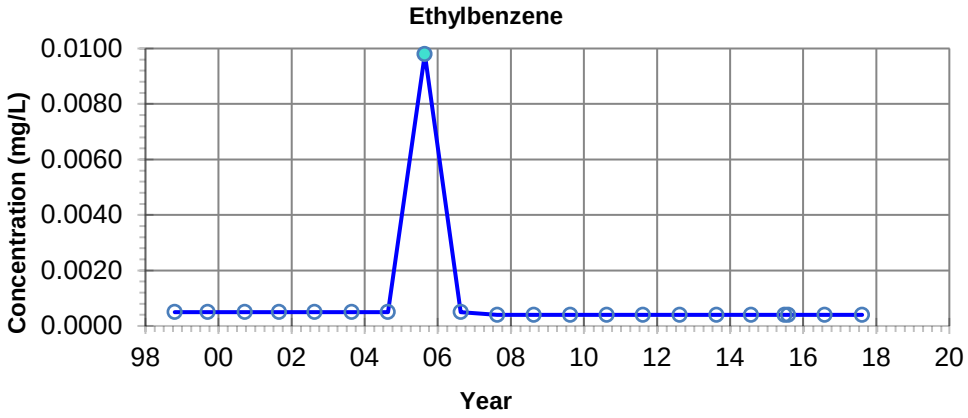

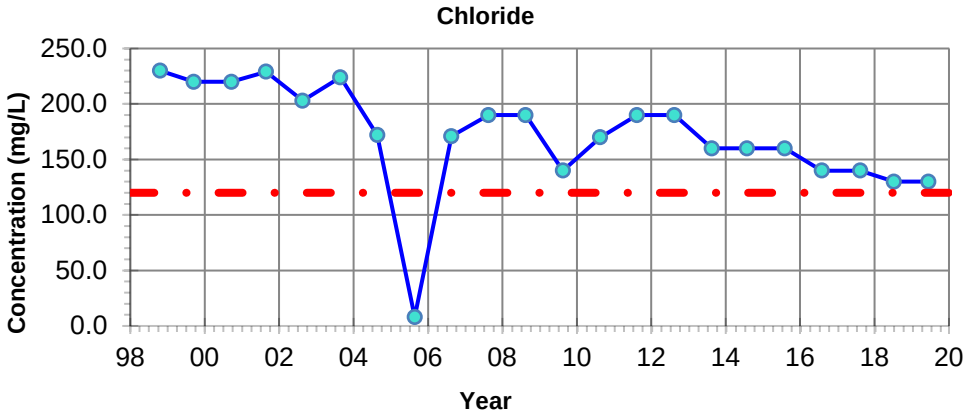

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MTF 98-4-5

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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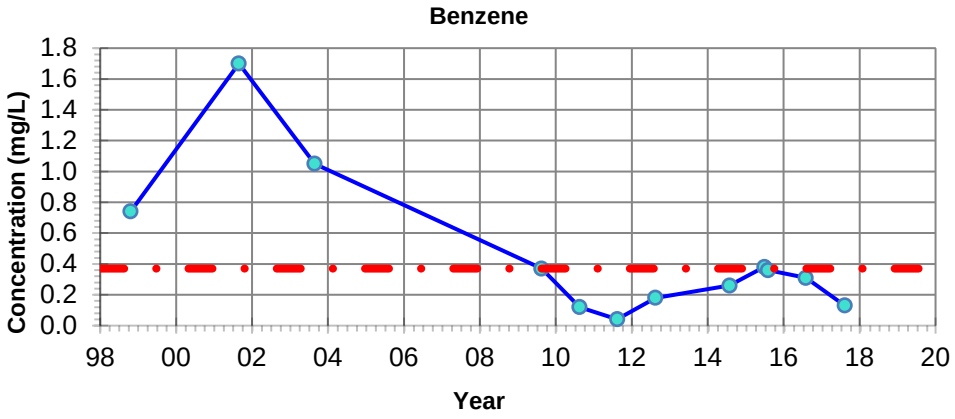

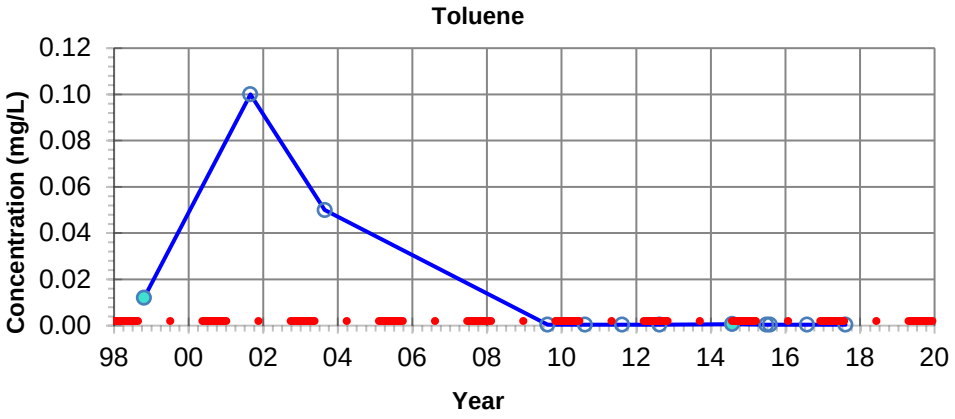

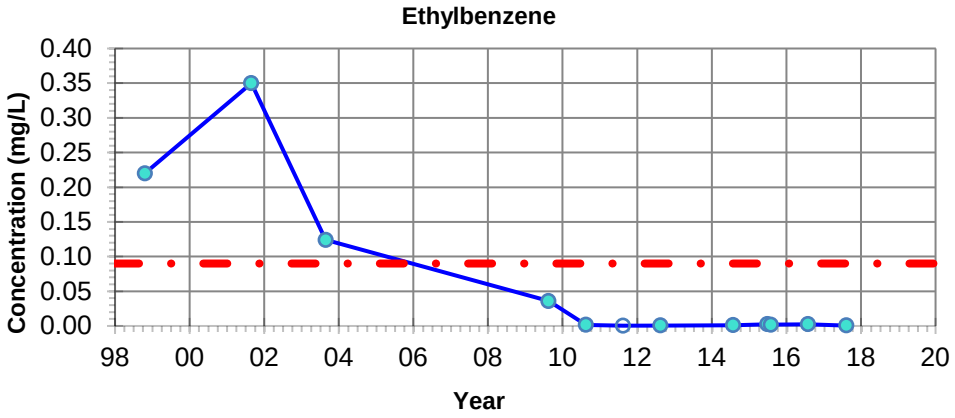

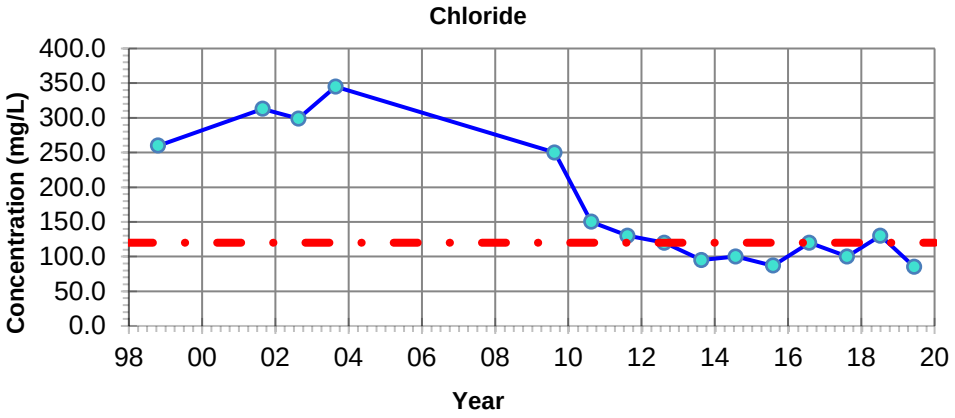

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MTF 98-5-4

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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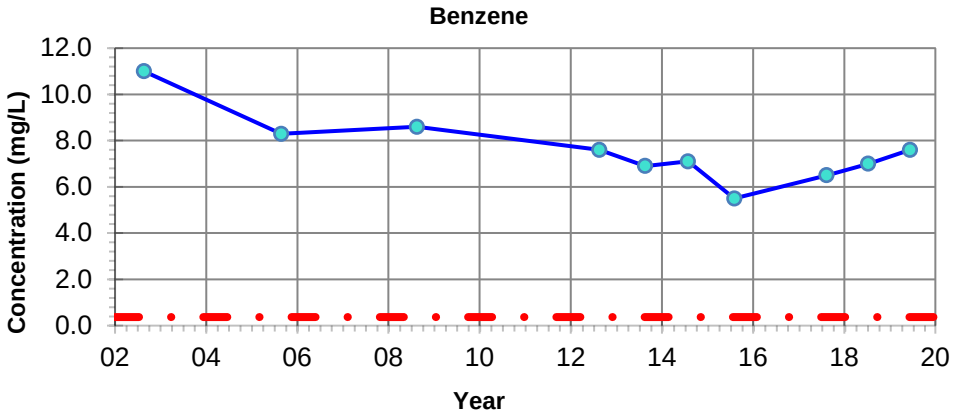

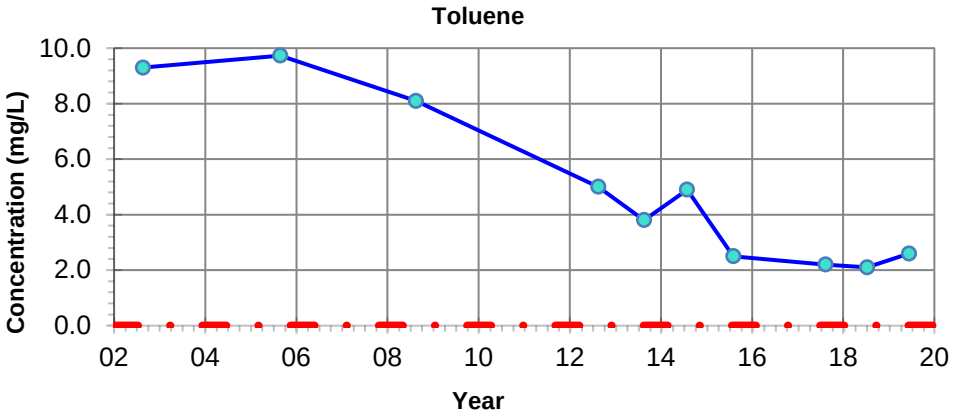

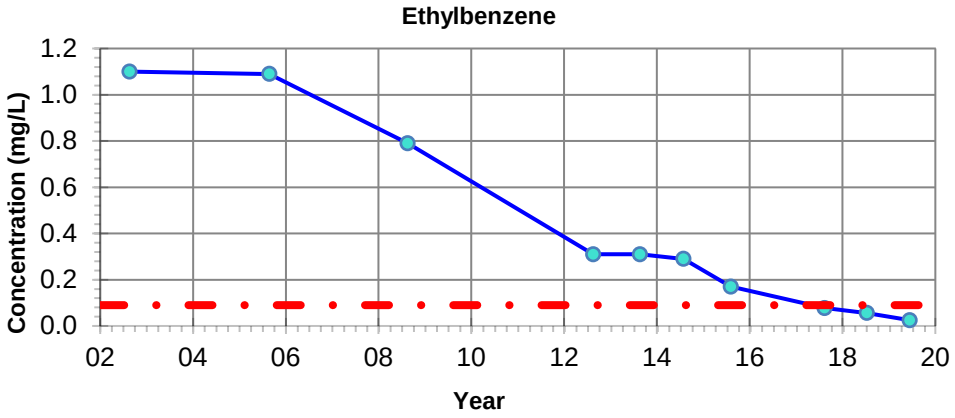

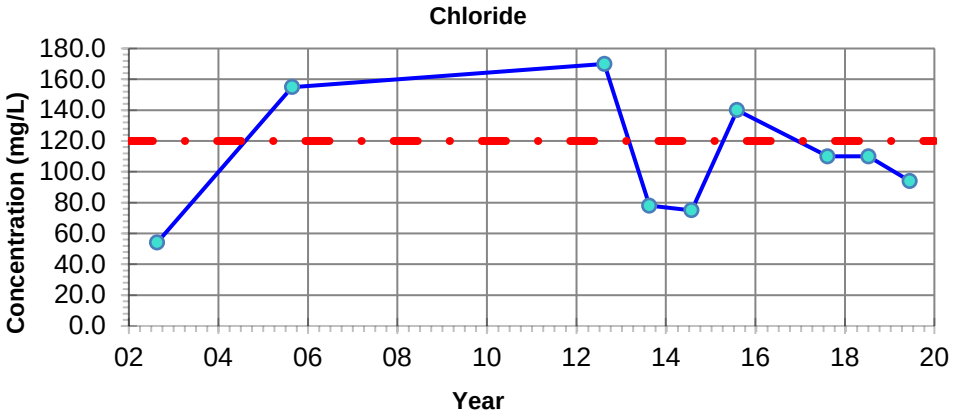

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: TF 02-7-3

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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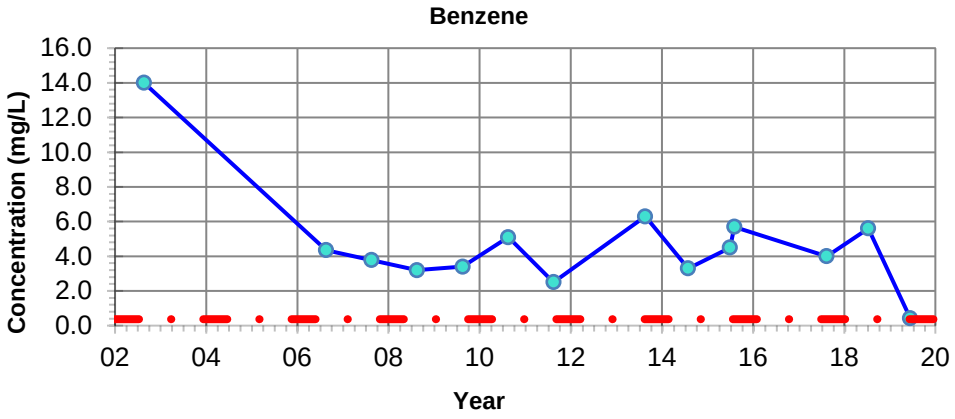

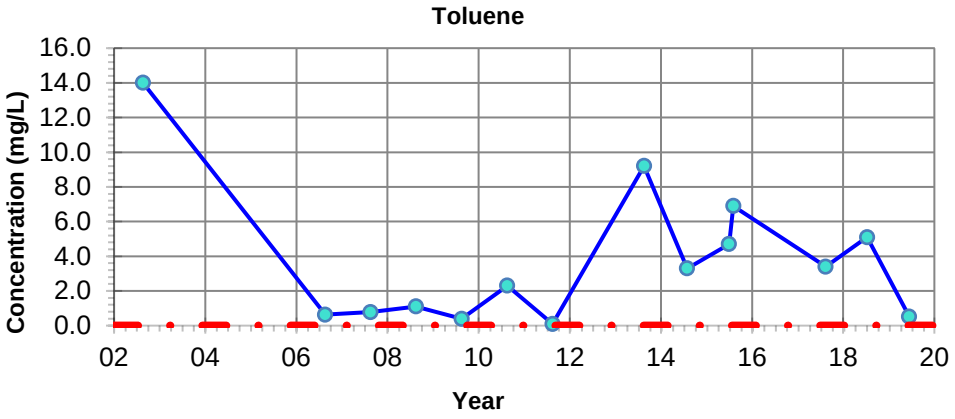

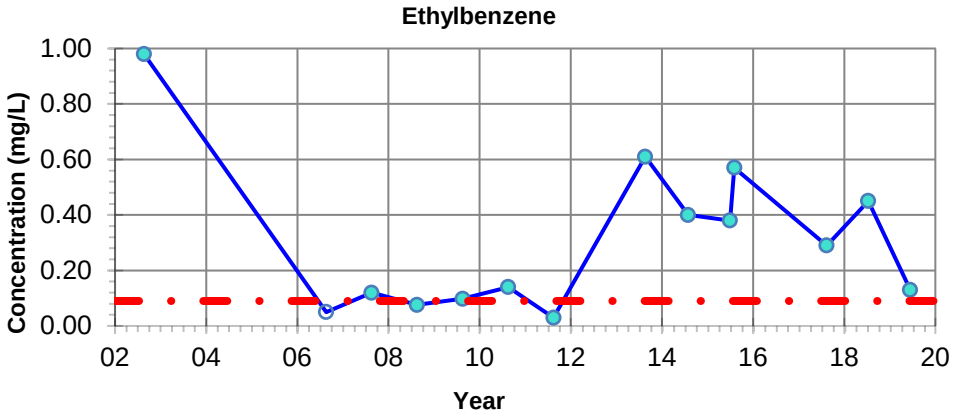

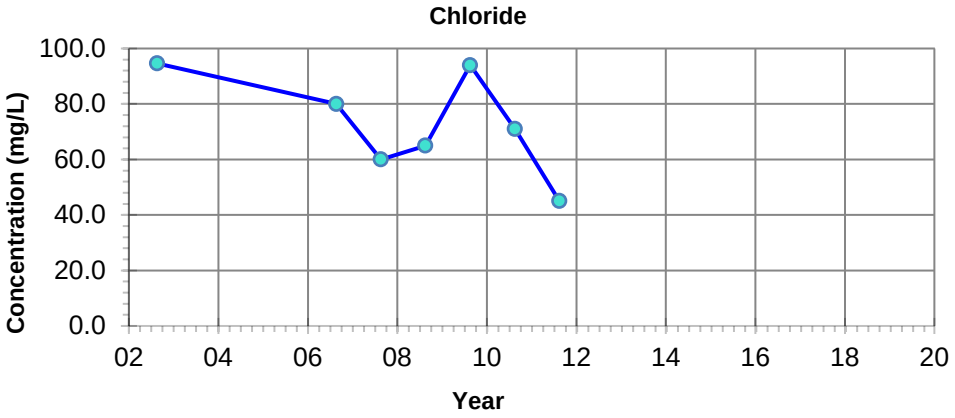

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: TF 02-9-3

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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Worley Group

PROJECT NUMBER:
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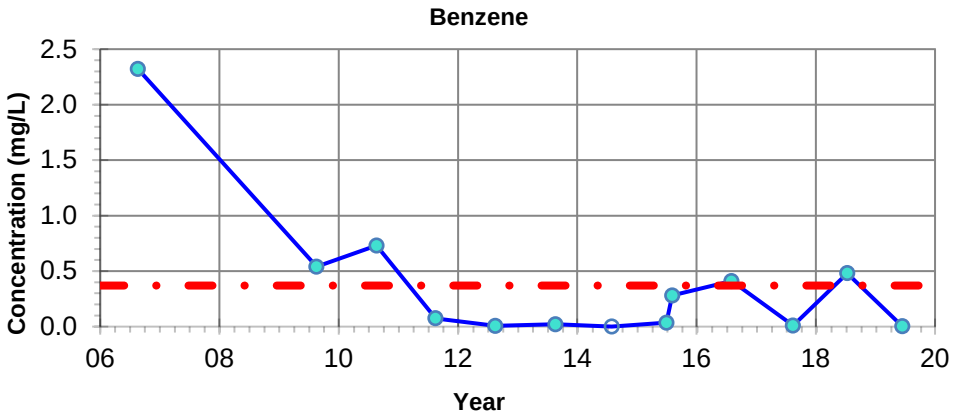

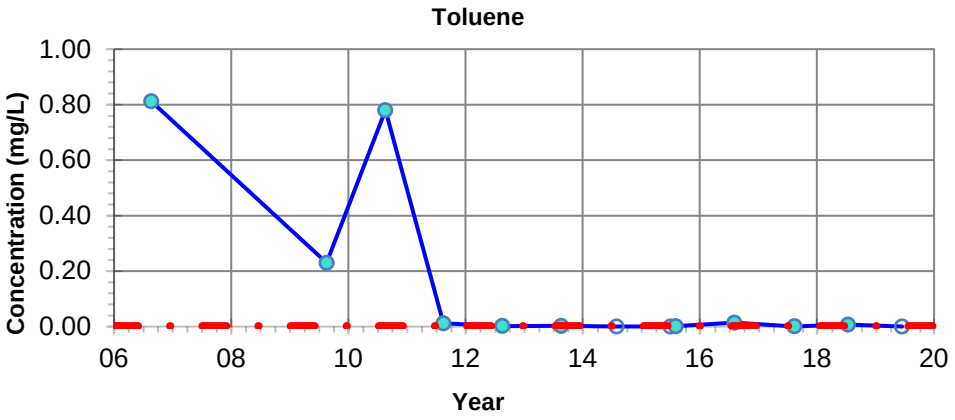

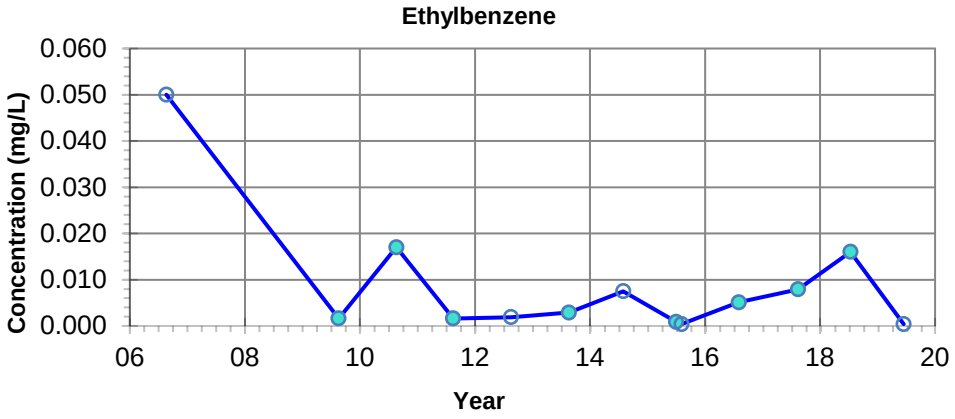

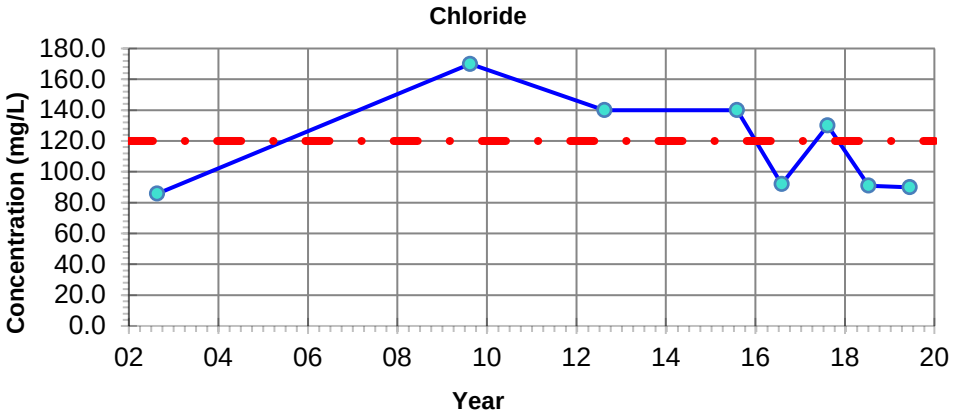

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: TF 02-10-5

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

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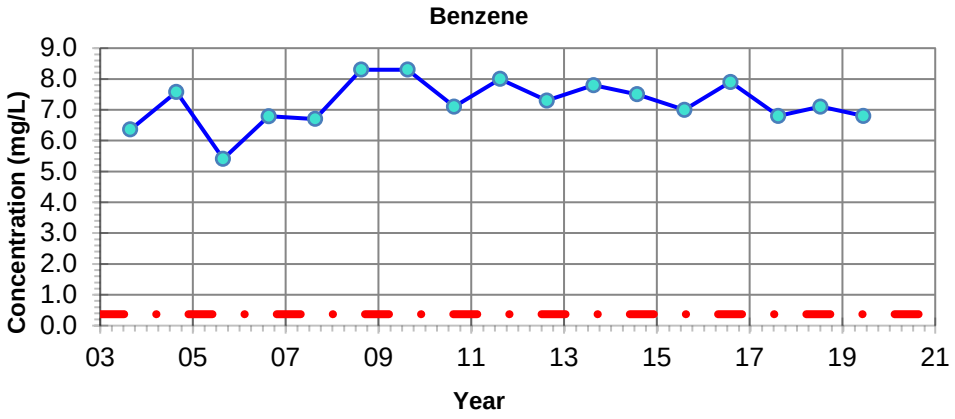

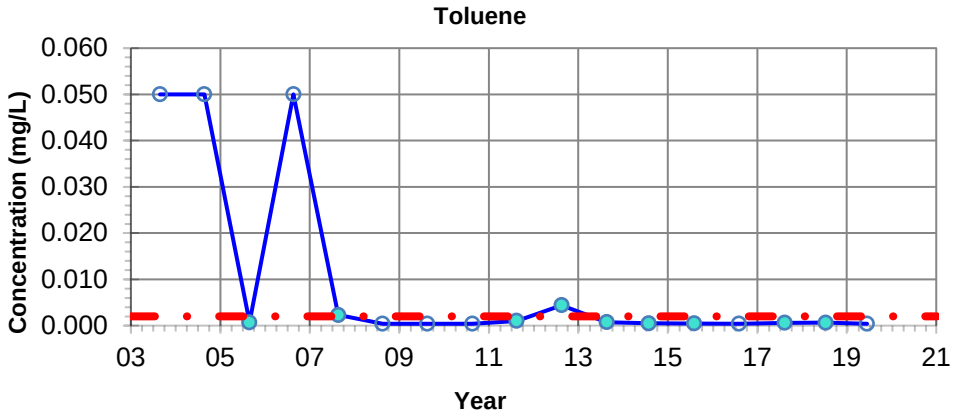

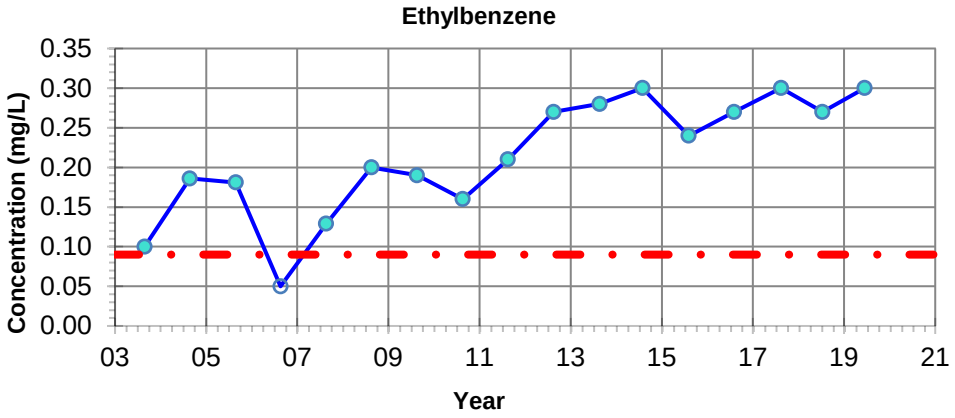

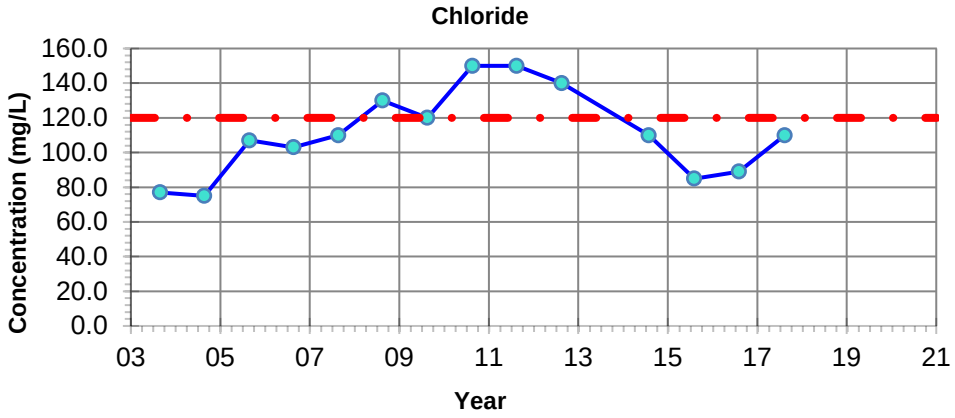

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: TF 03-11-4

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

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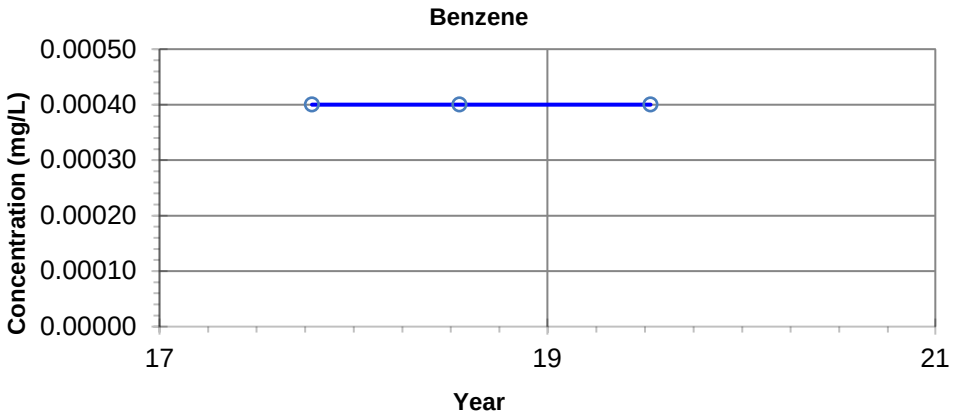

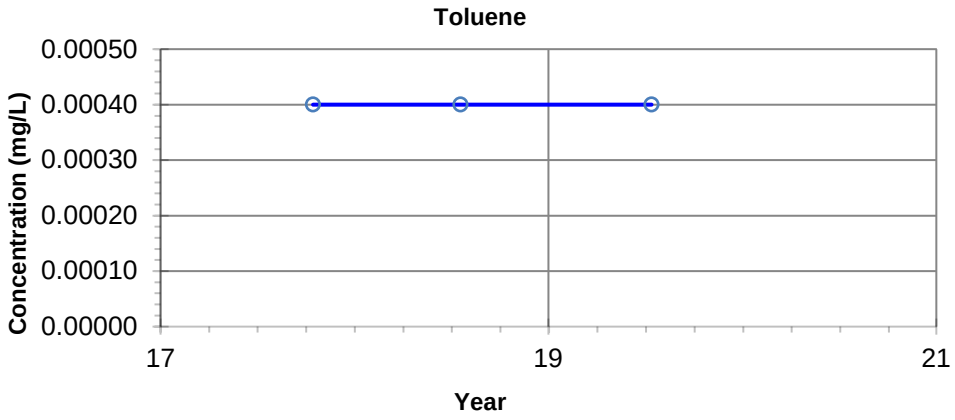

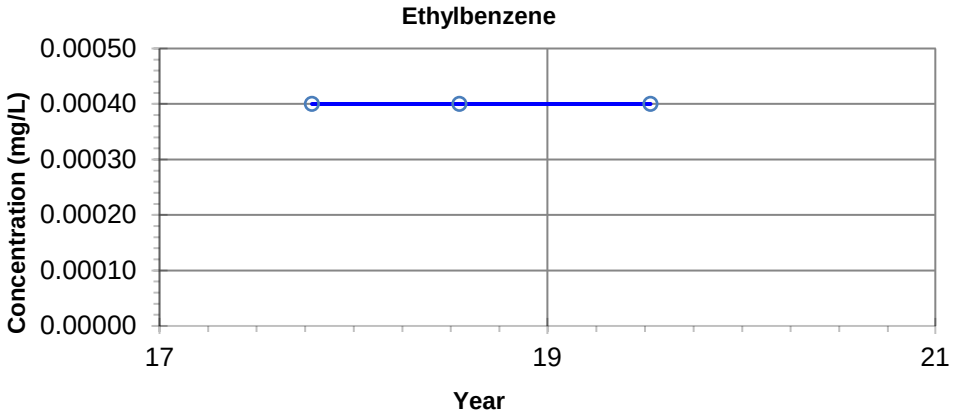

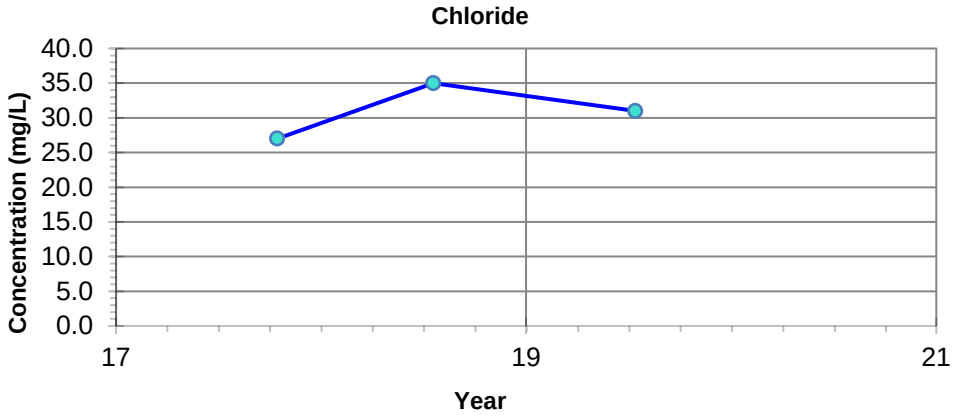

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B42-17-1-5

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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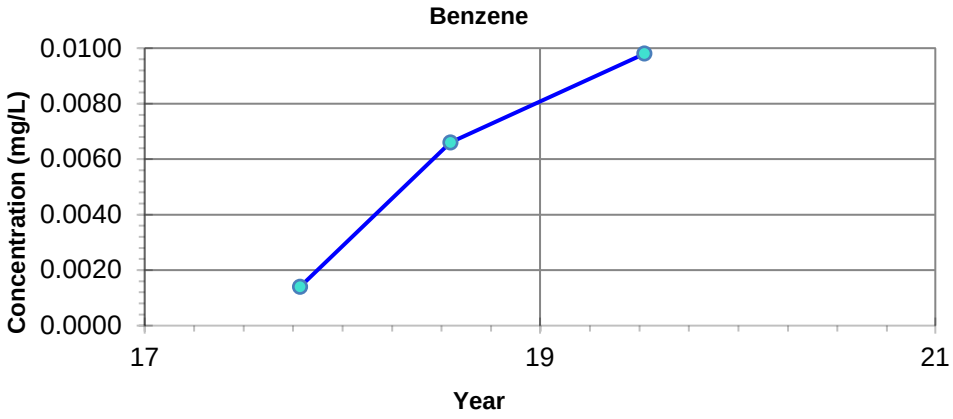

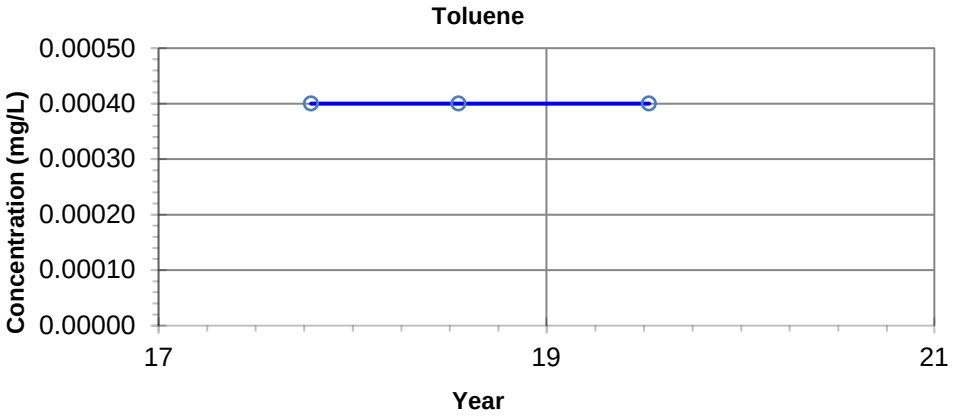

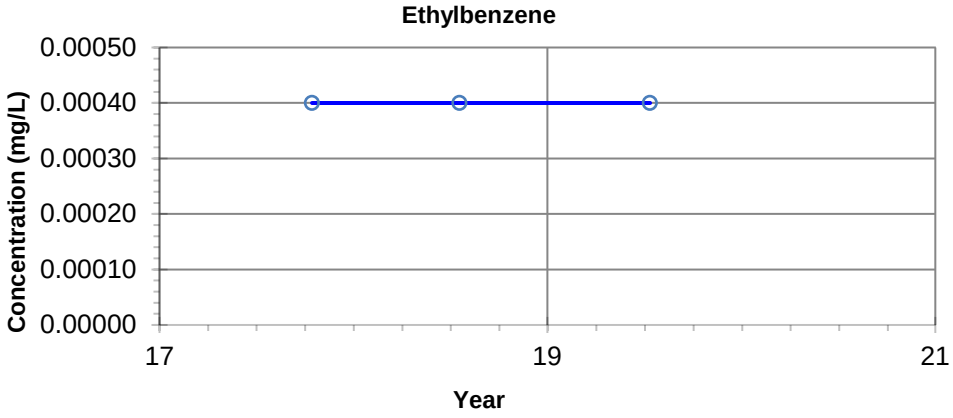

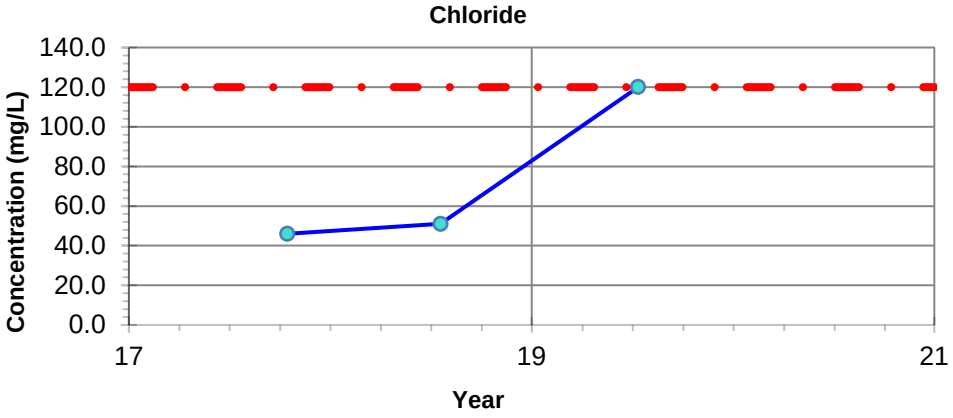

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B42-17-2-4

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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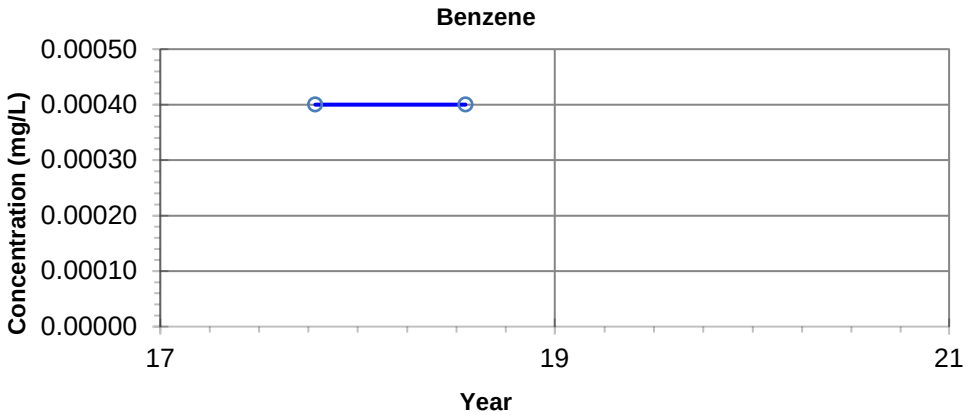

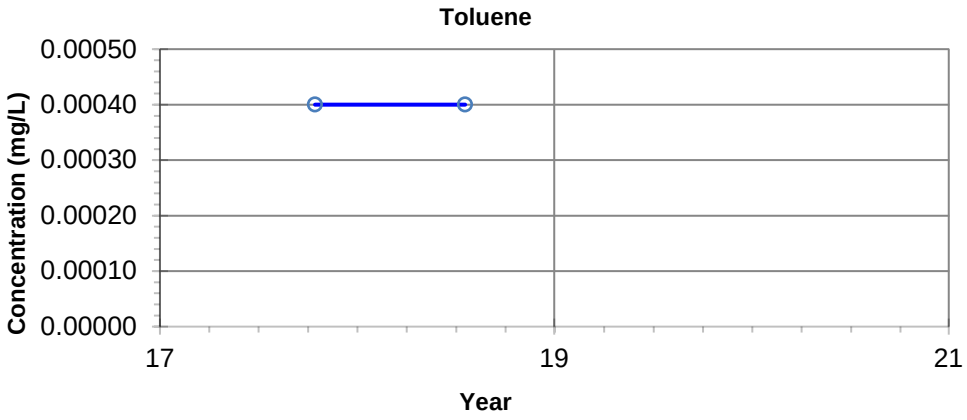

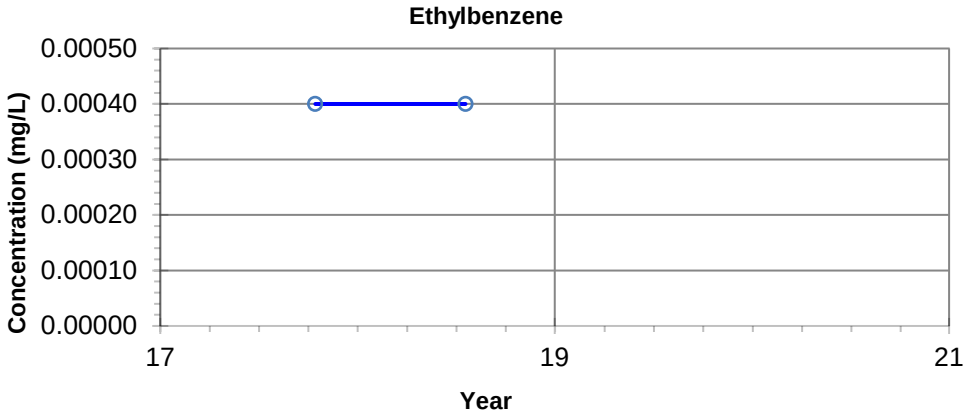

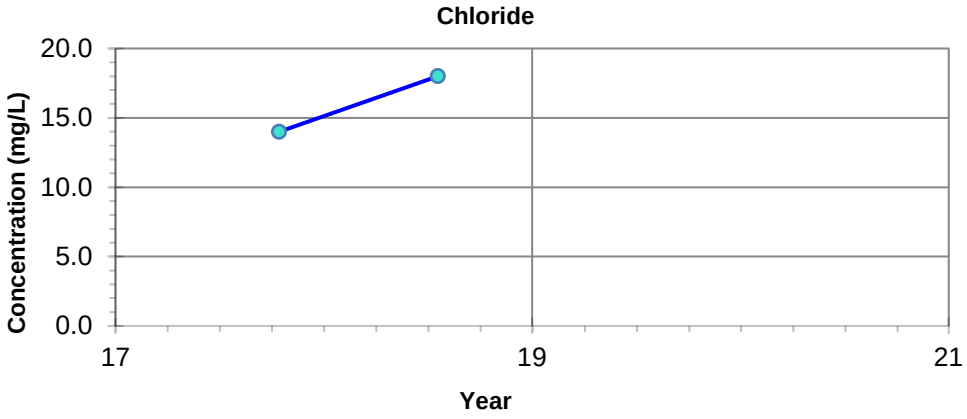

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: B42-17-3-4

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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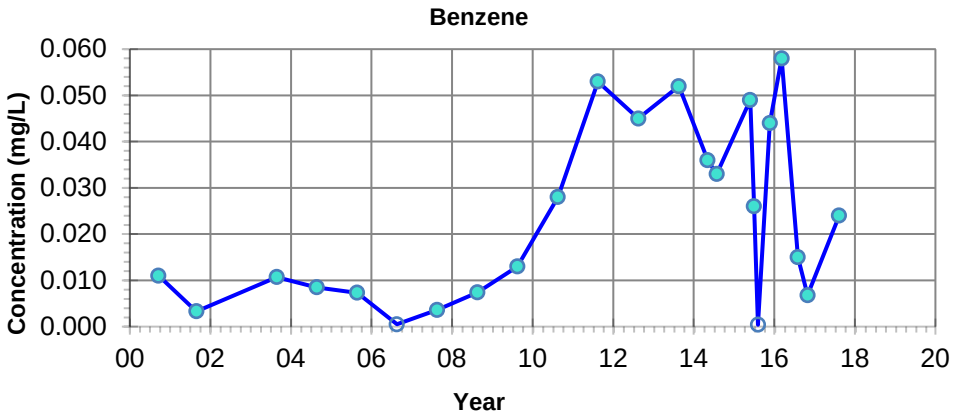

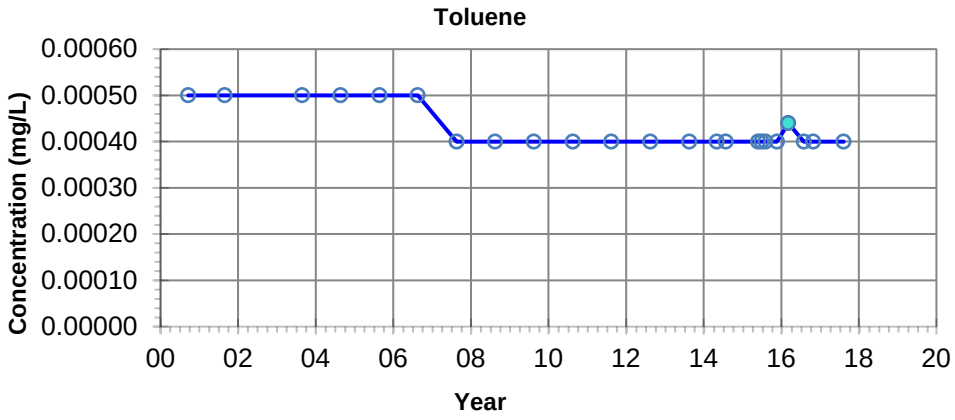

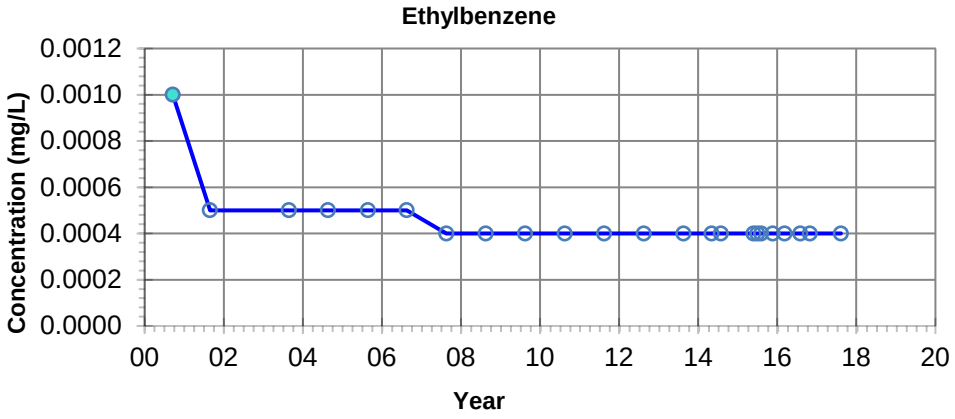

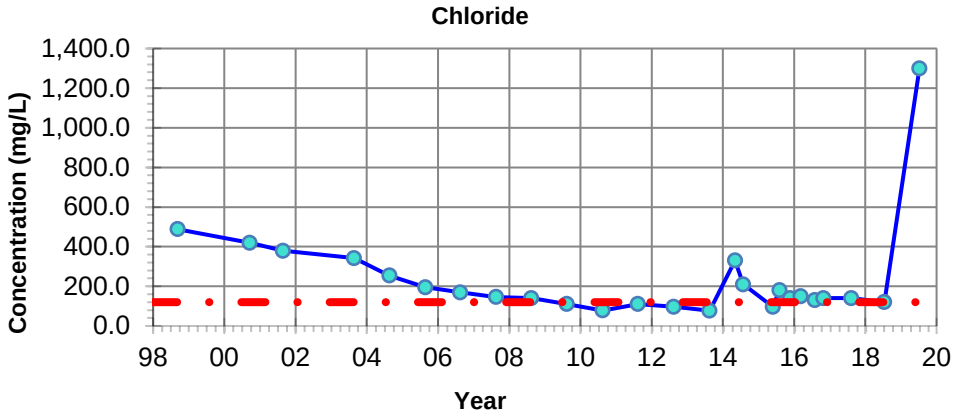

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: NWR 98-13-21

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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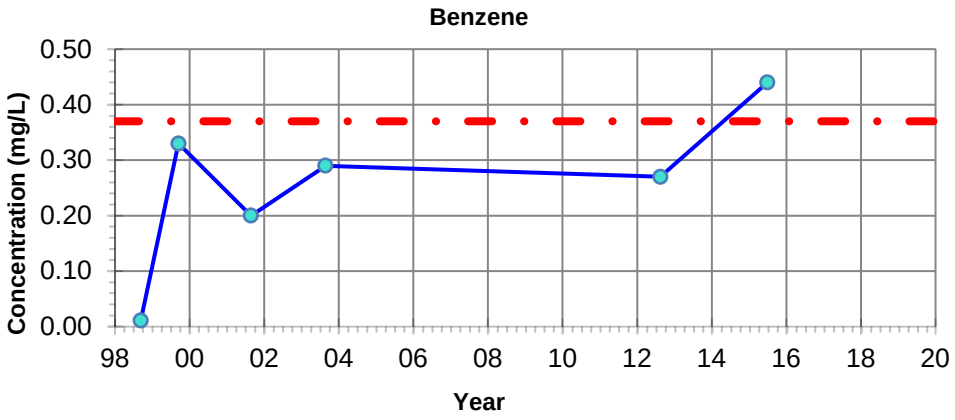

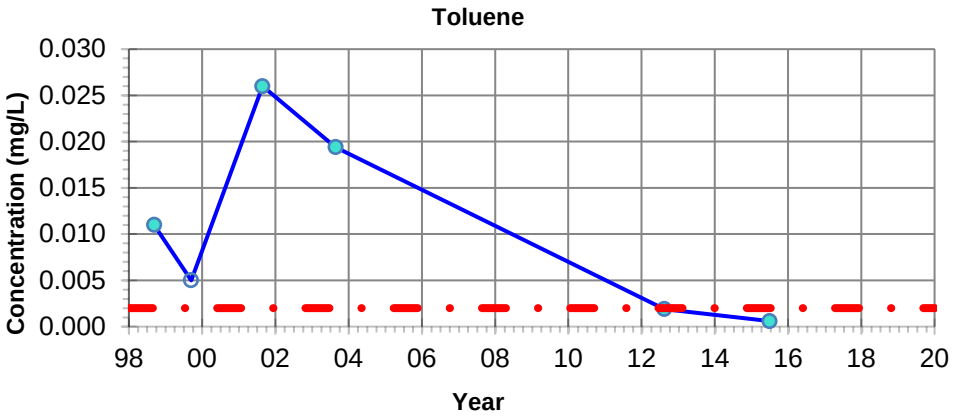

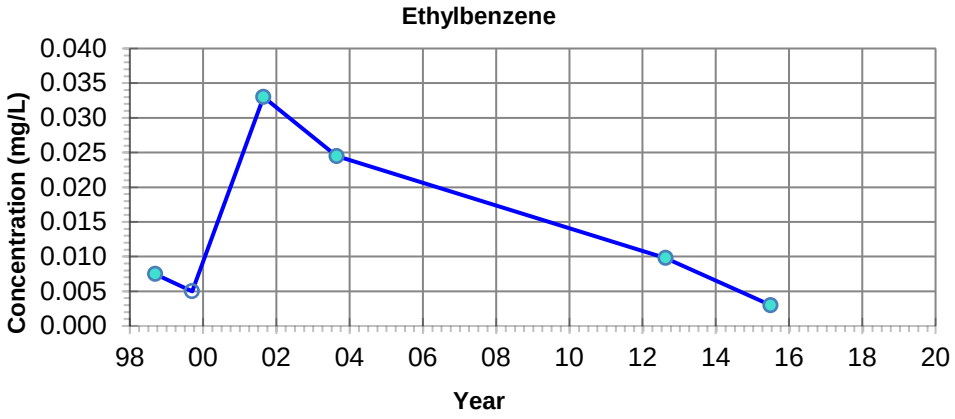

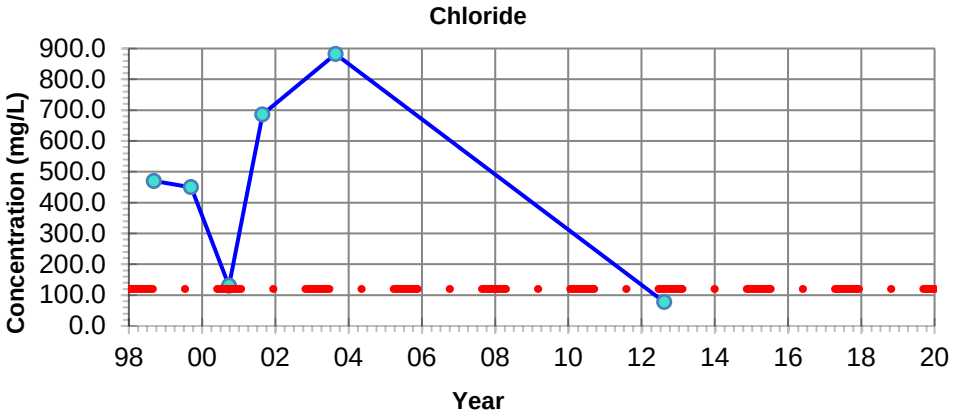

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: NWR 98-23-21

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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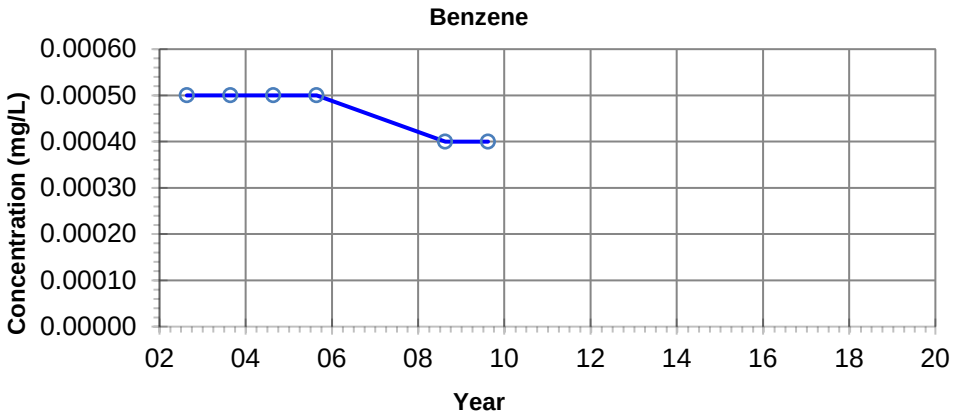

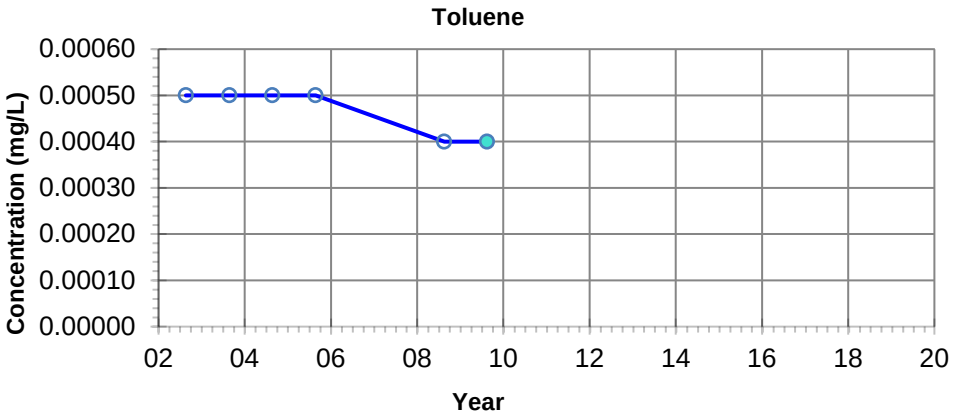

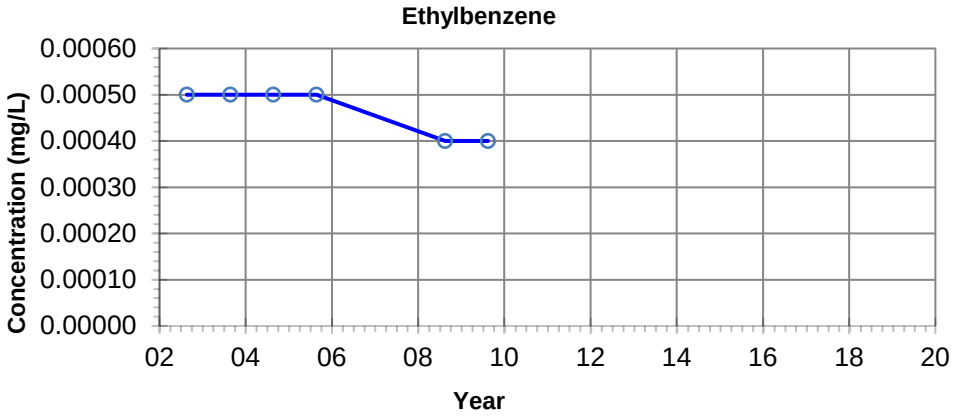

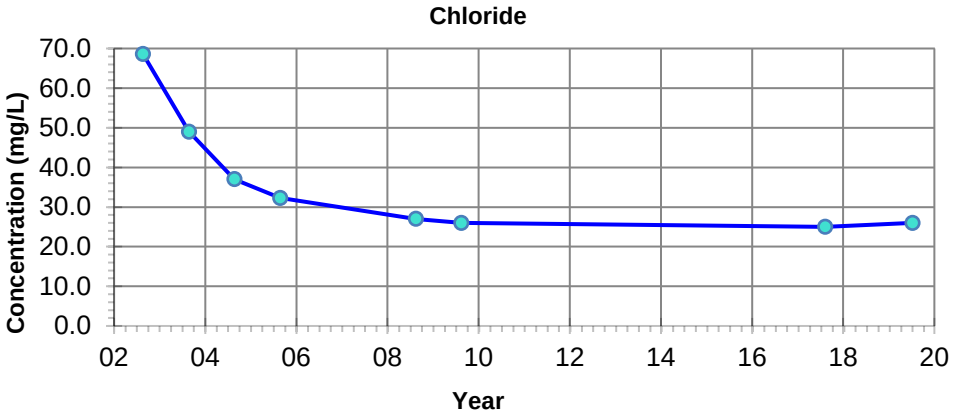

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: NWR 02-12-7

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

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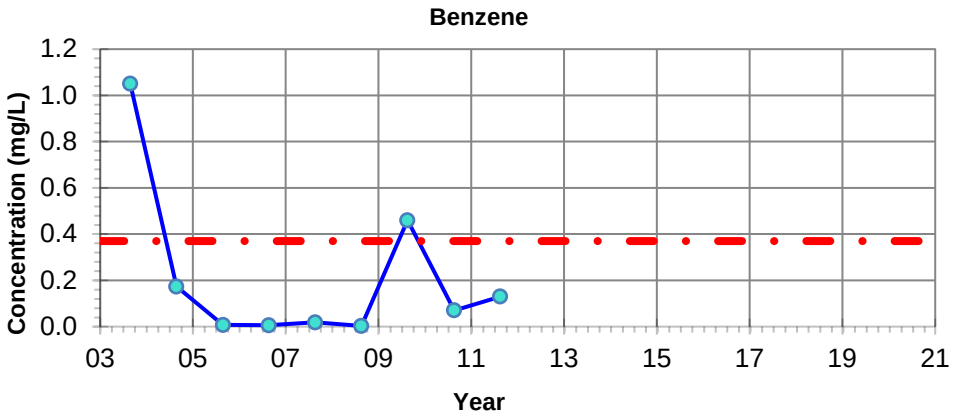

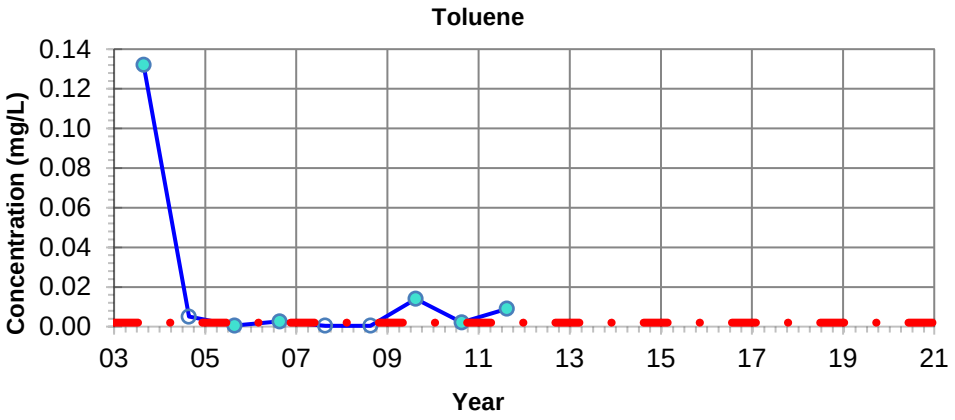

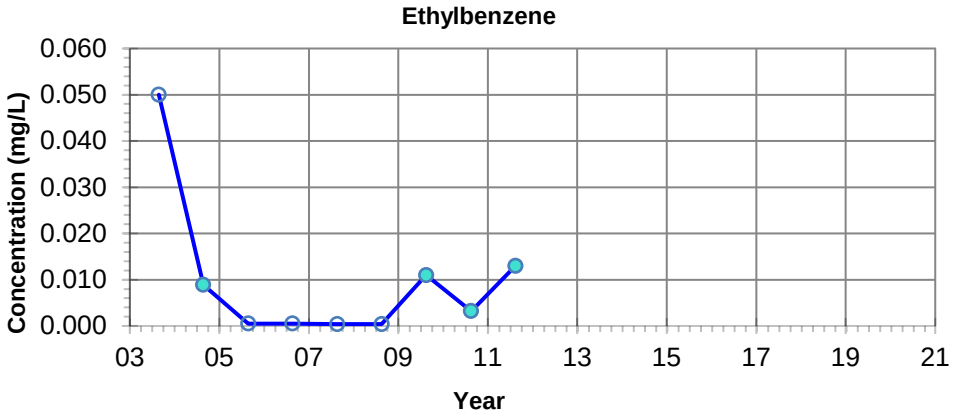

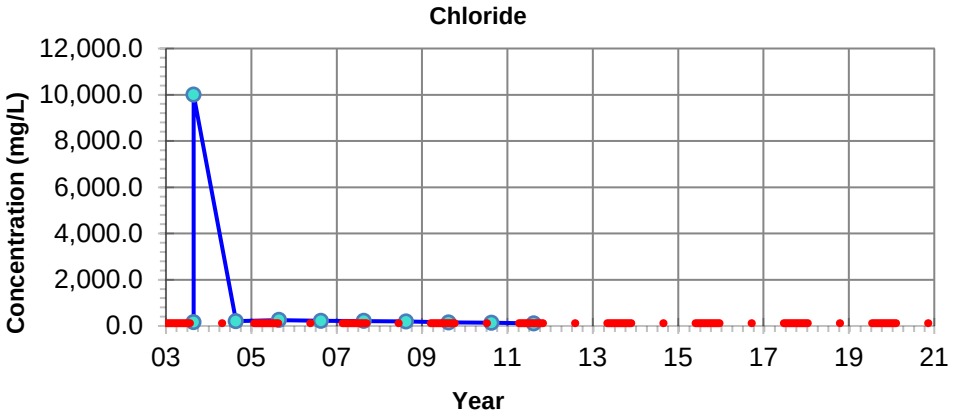

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: NWR 03-42-19

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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Worley Group

PROJECT NUMBER:
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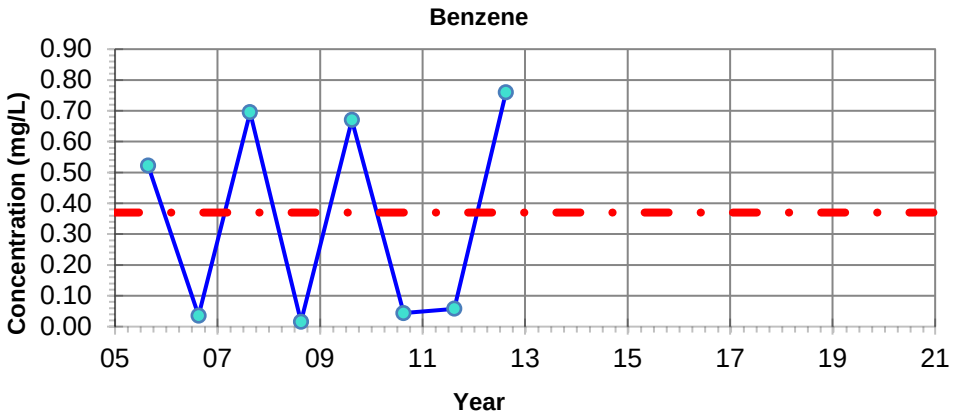

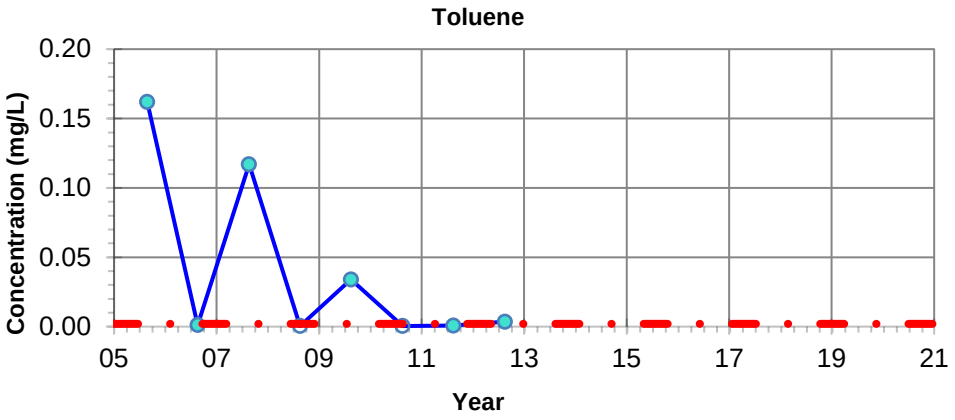

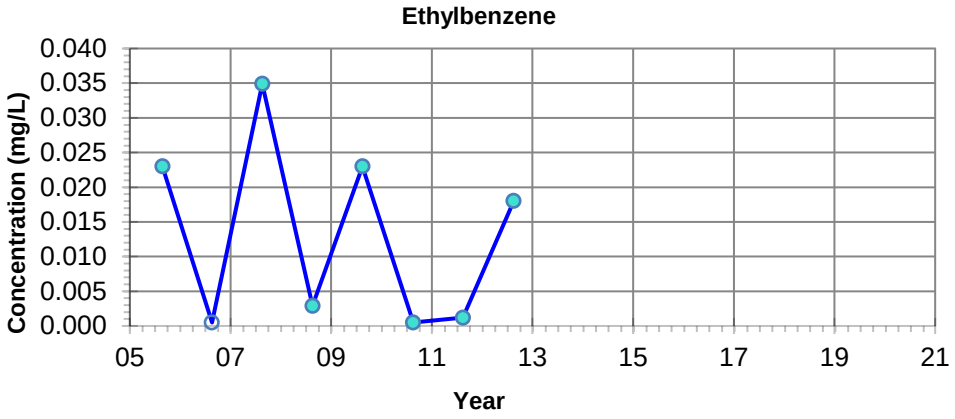

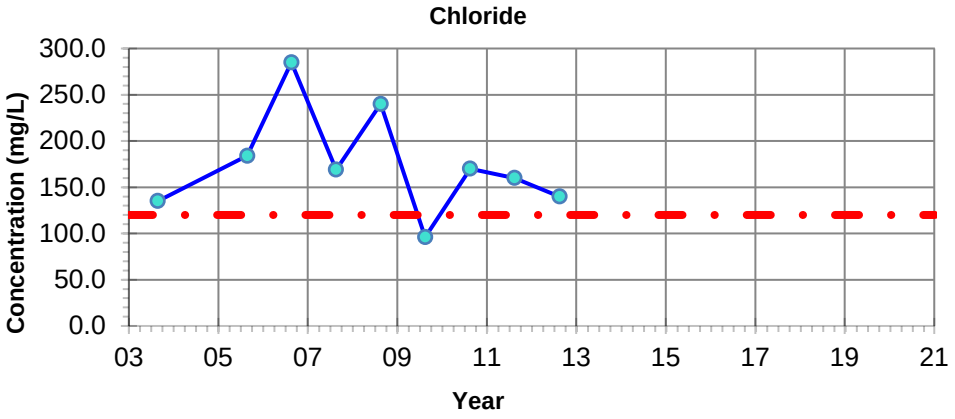

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: NWR 03-43-20

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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Worley Group

PROJECT NUMBER:
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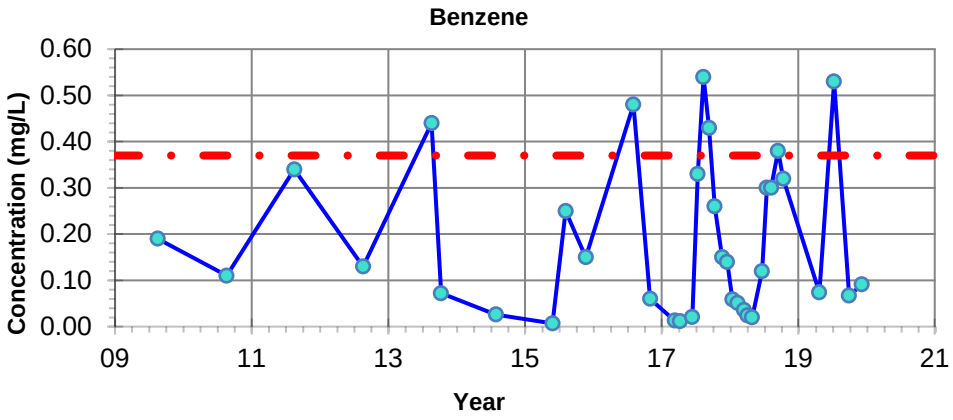

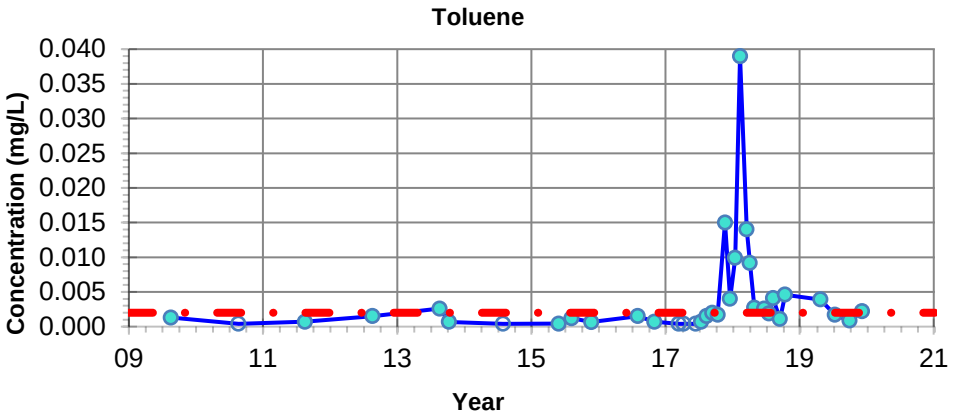

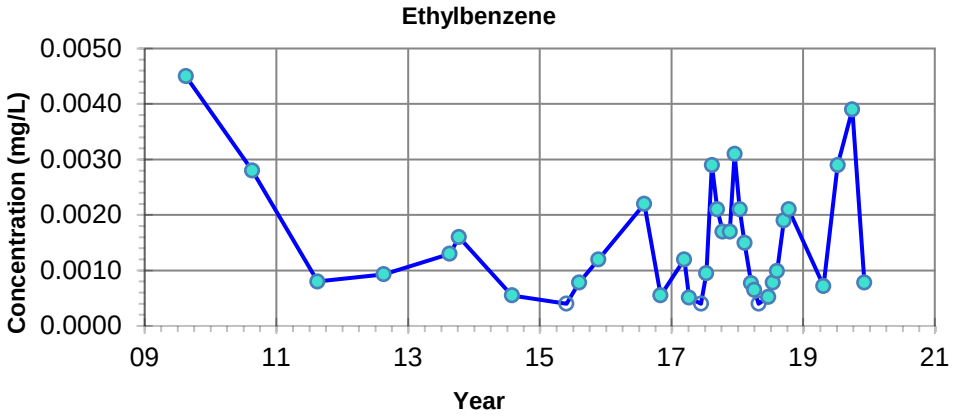

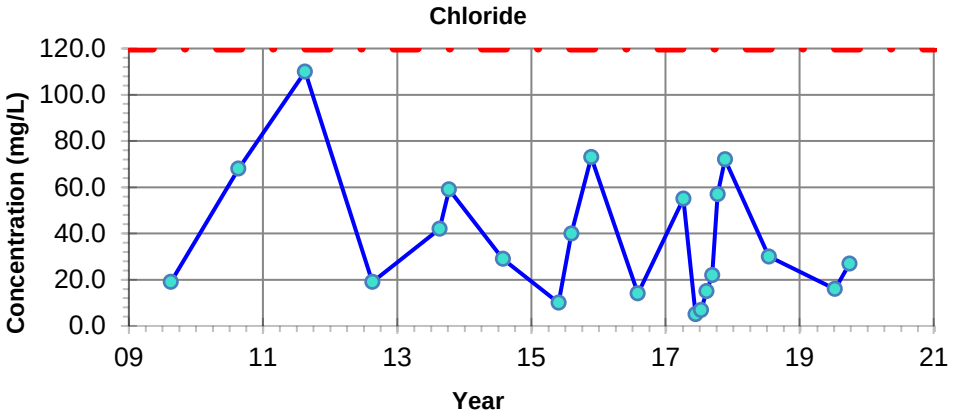

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: NWR 09-4-5

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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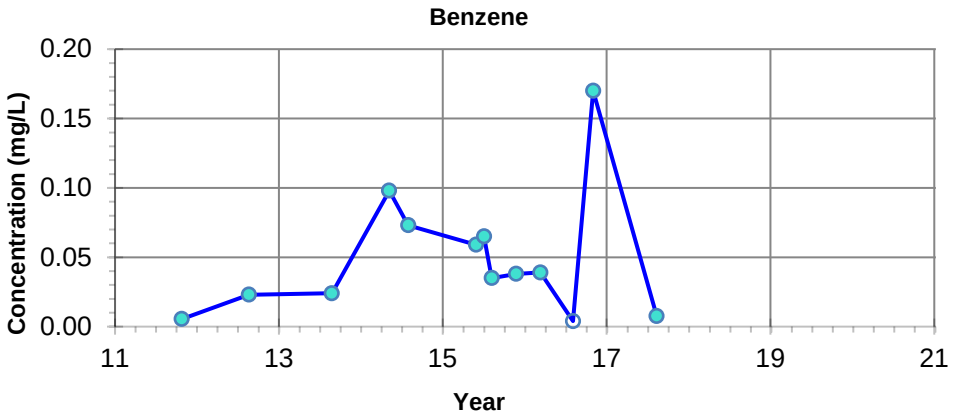

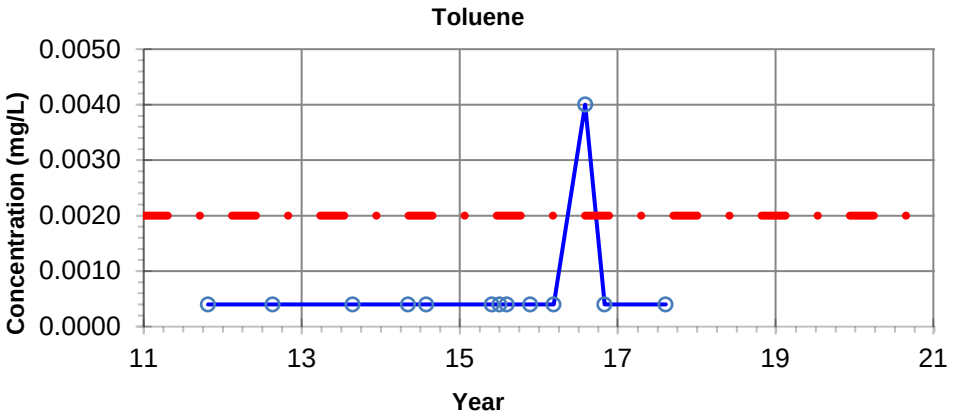

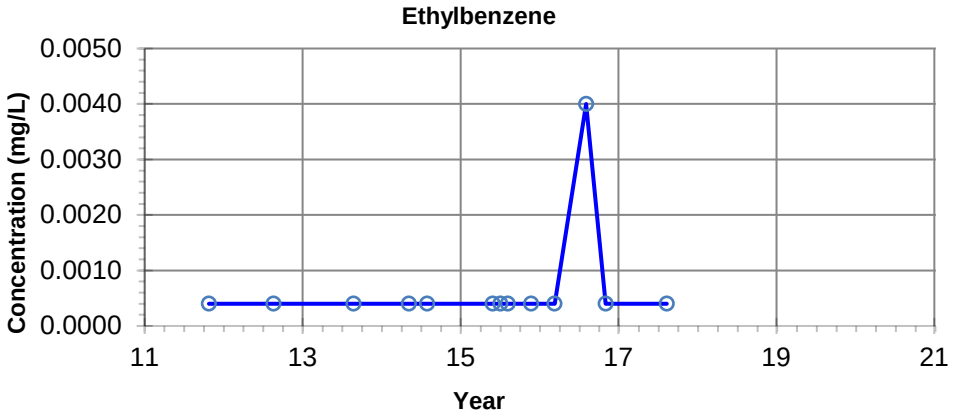

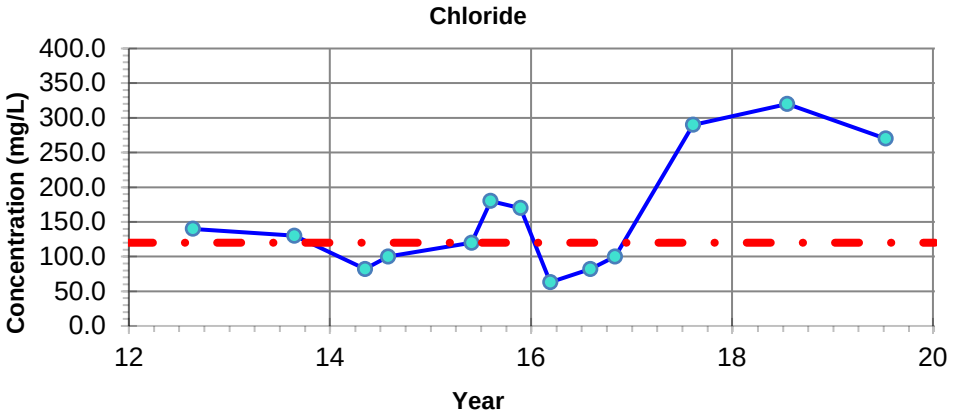

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GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: NWR 09-1-20

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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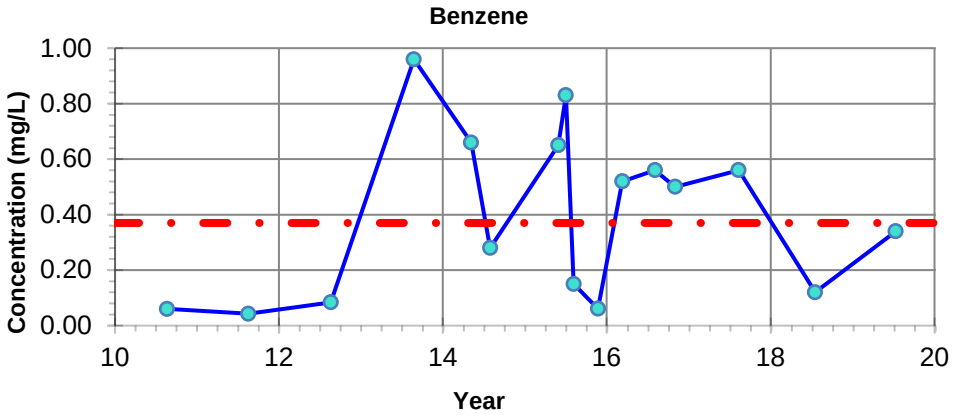

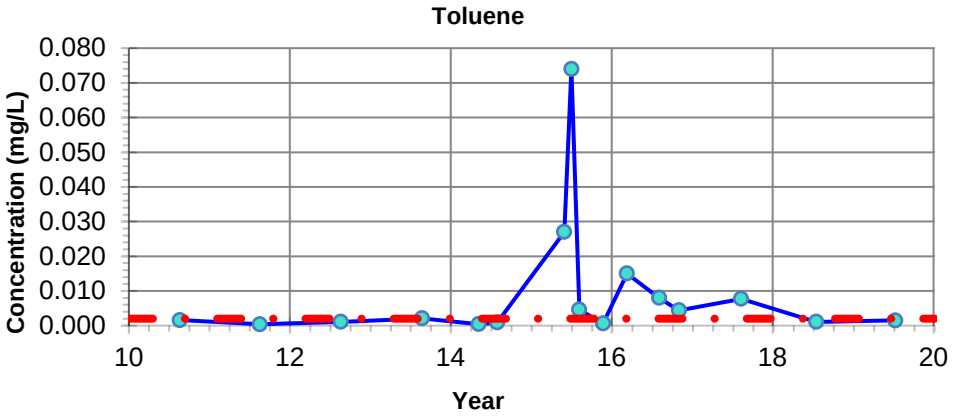

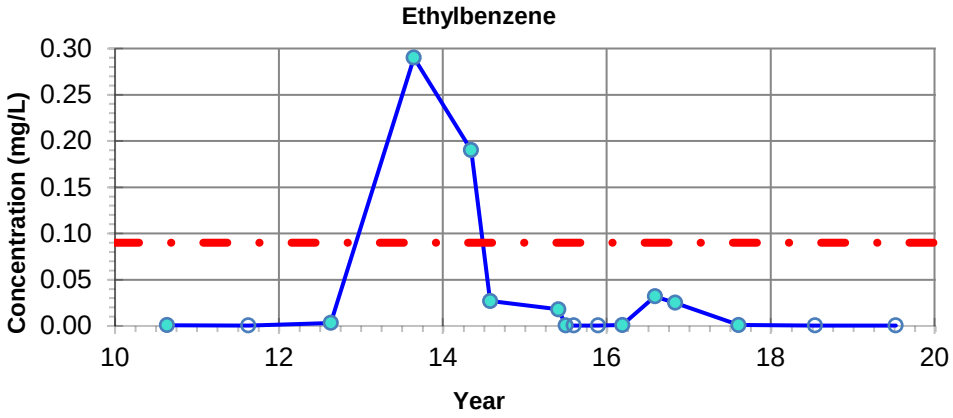

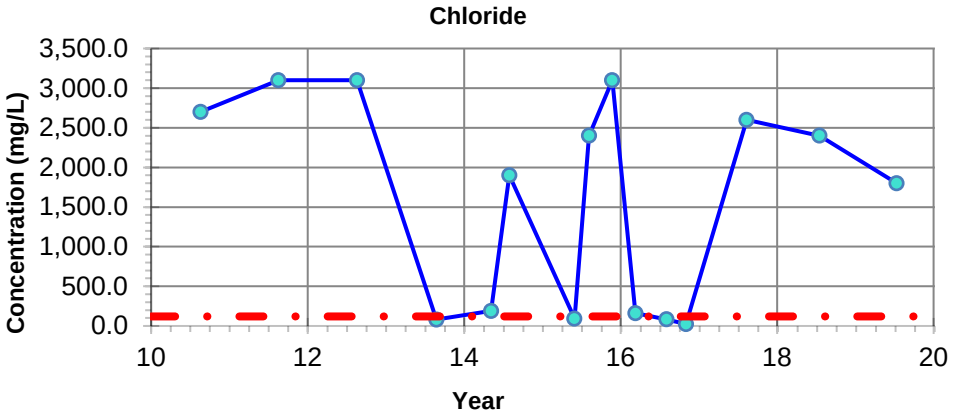

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GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: NWR 09-2-26

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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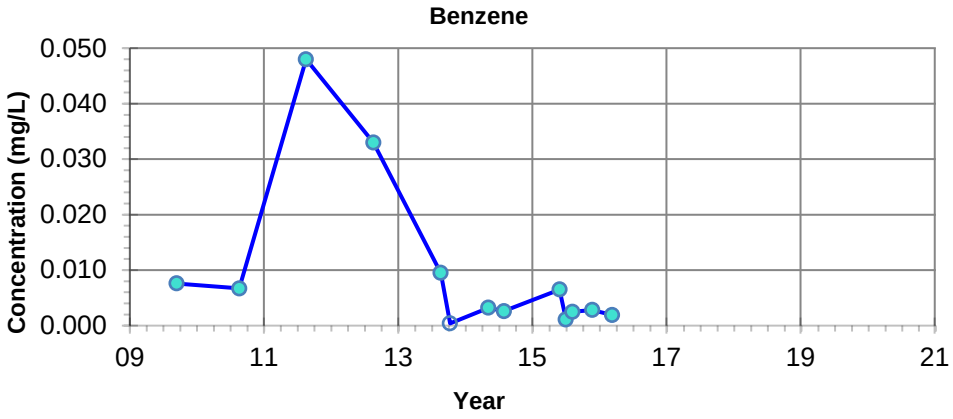

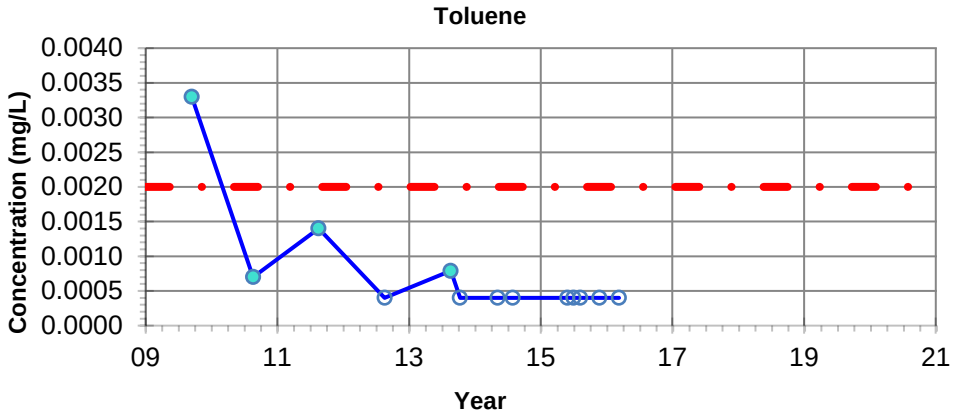

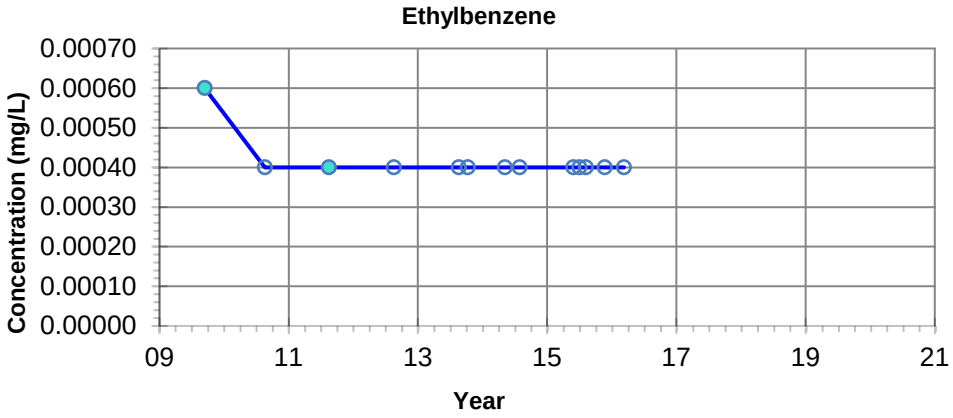

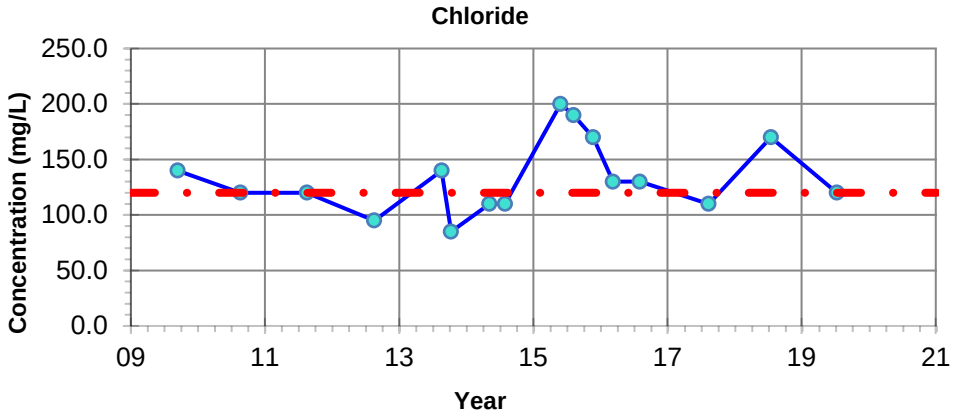

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GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: NWR 09-3-20

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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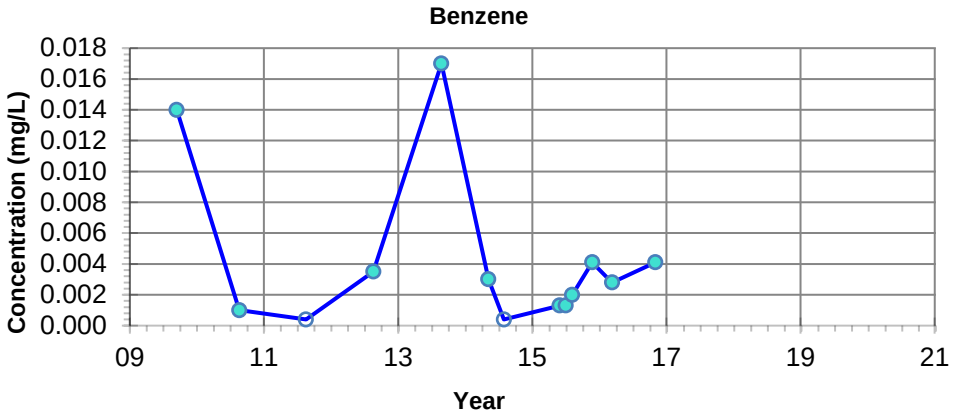

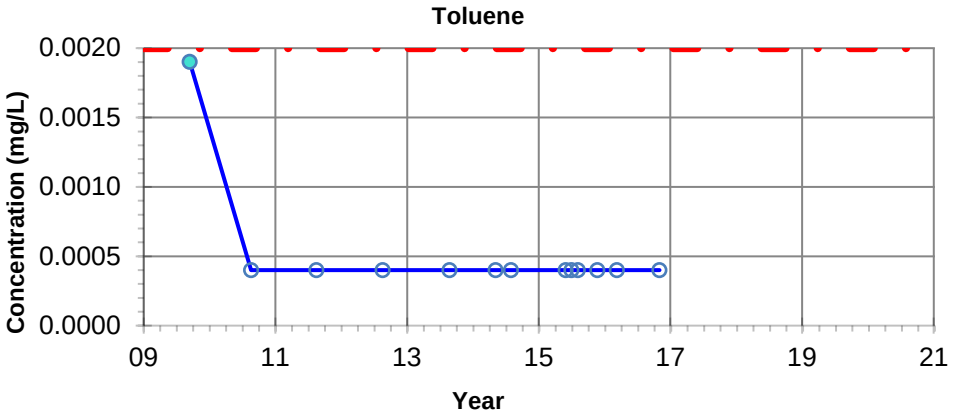

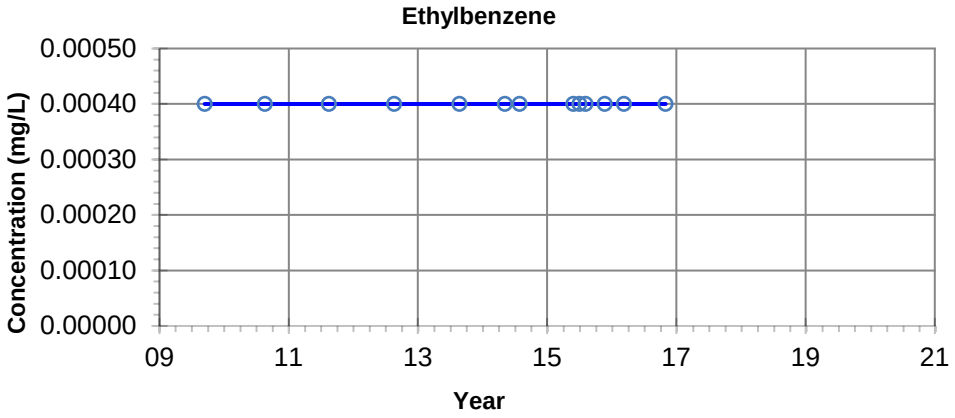

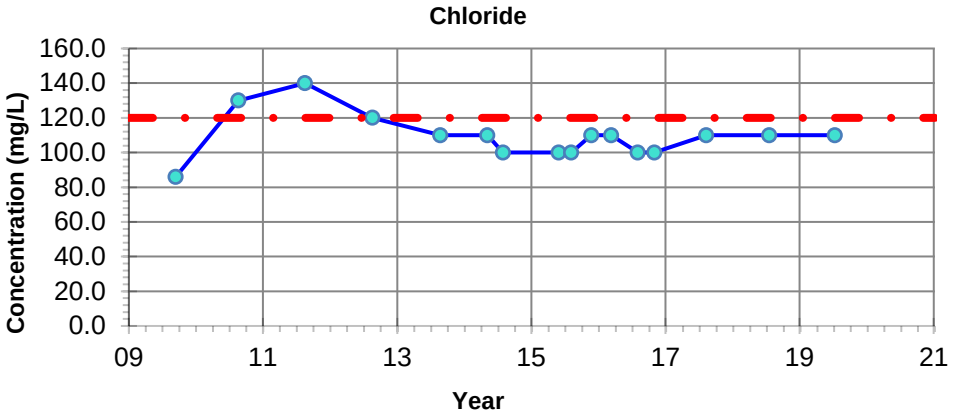

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: NWR 09-4-17

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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PROJECT NUMBER:
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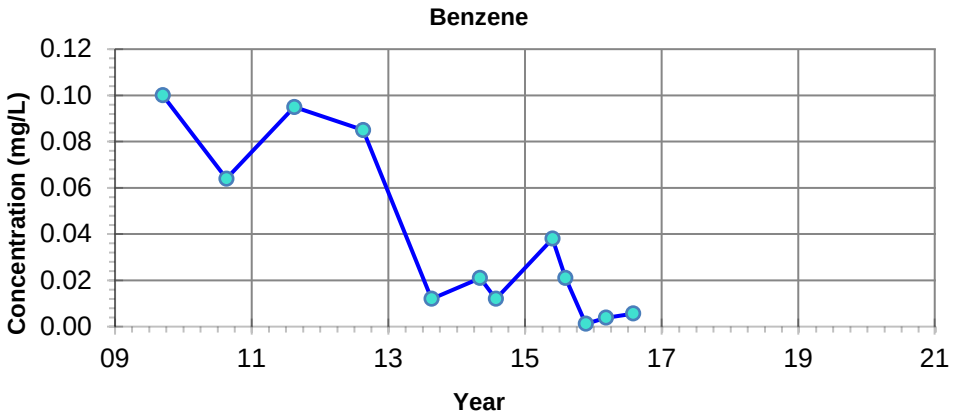

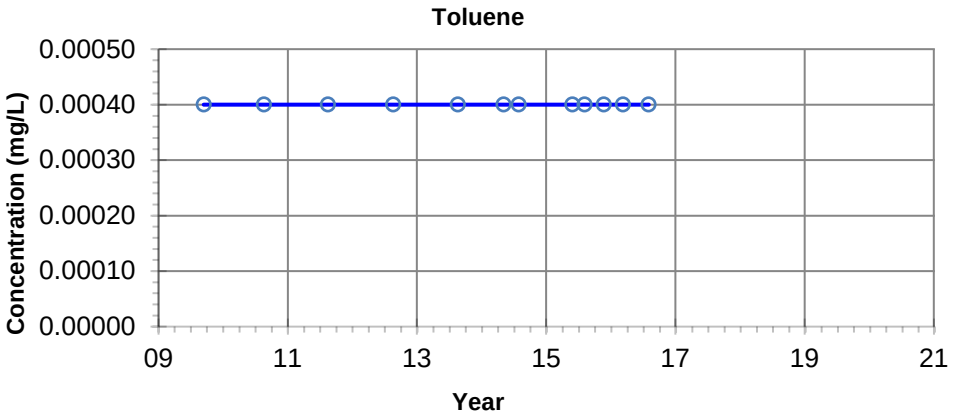

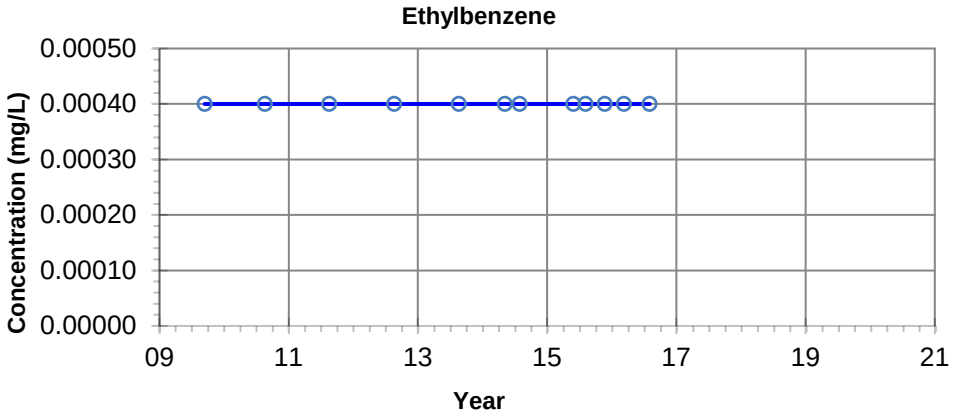

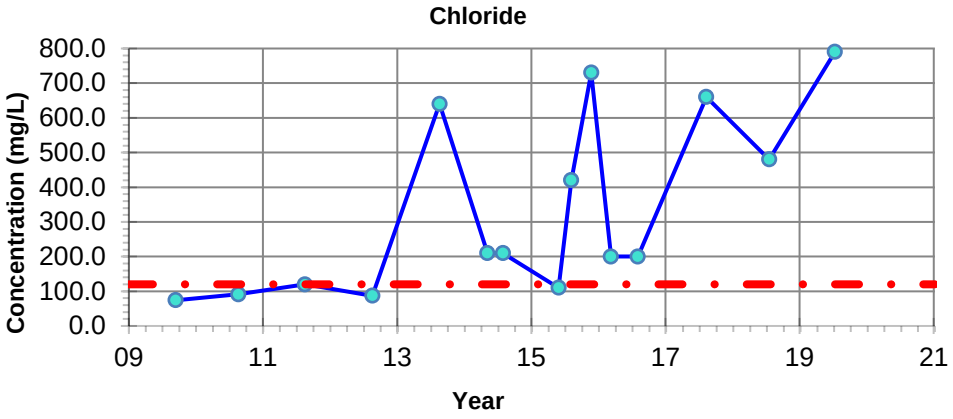

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GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: NWR 09-5-19

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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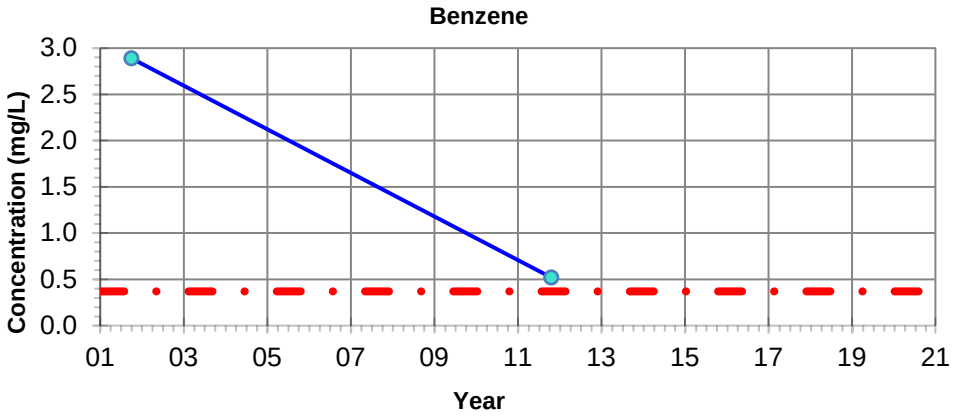

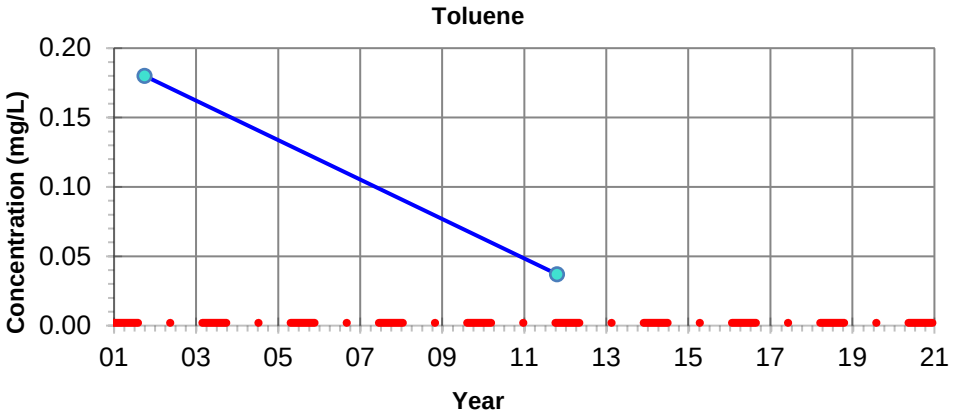

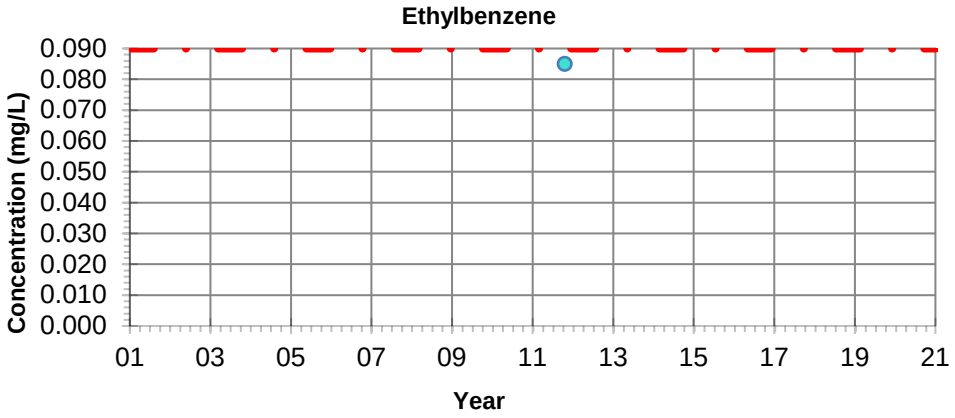

***** No Chloride Data *****

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GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-OBS28

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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Worley Group

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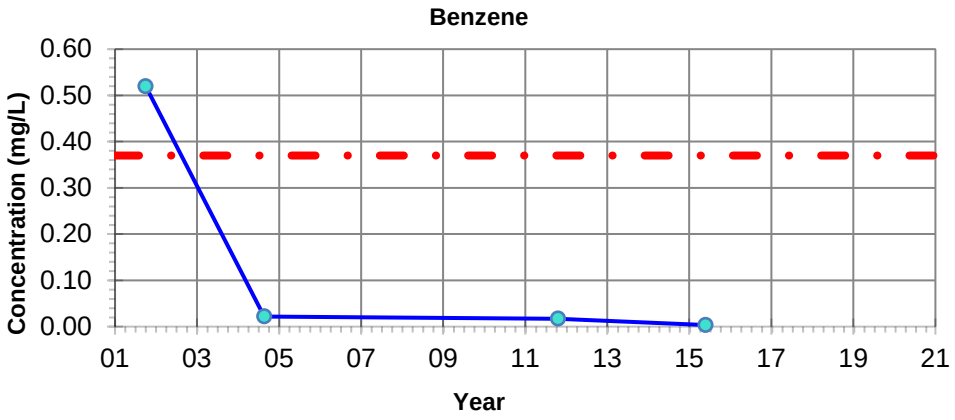

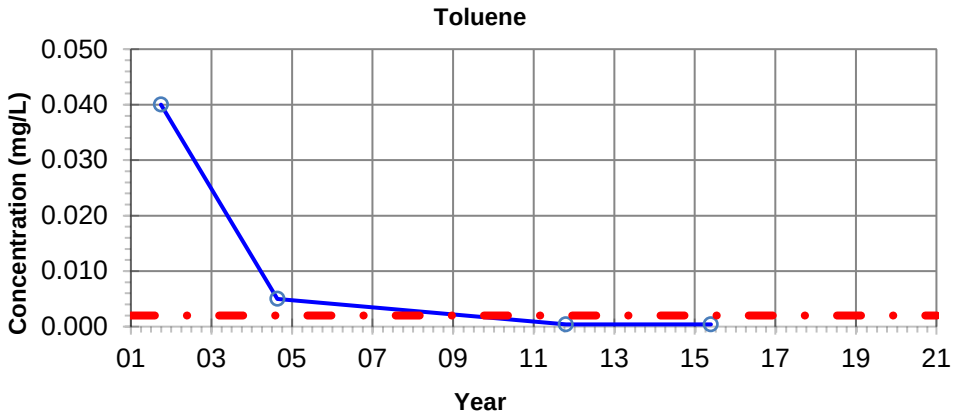

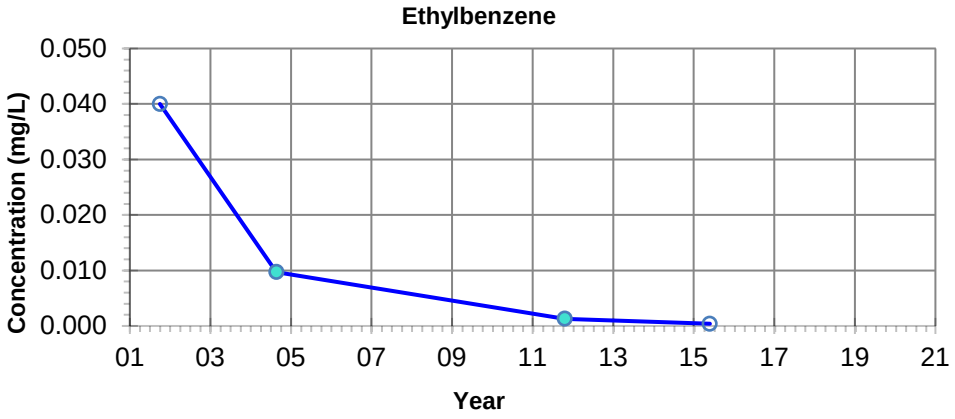

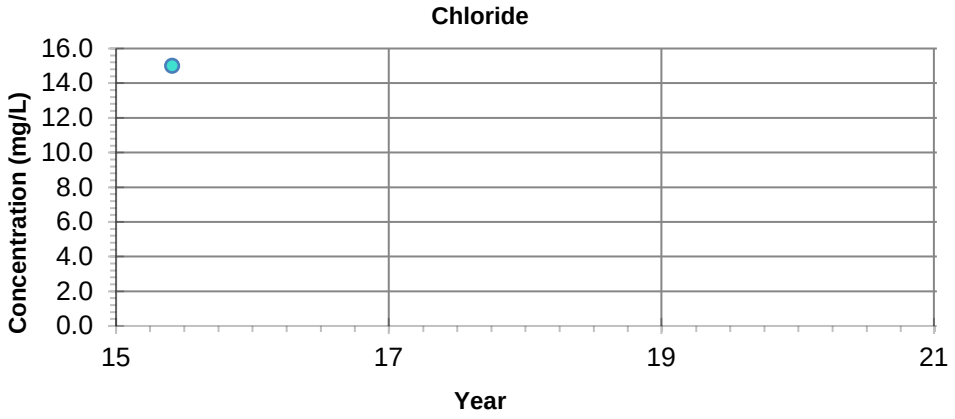

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– · – GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-OBS32

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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Worley Group

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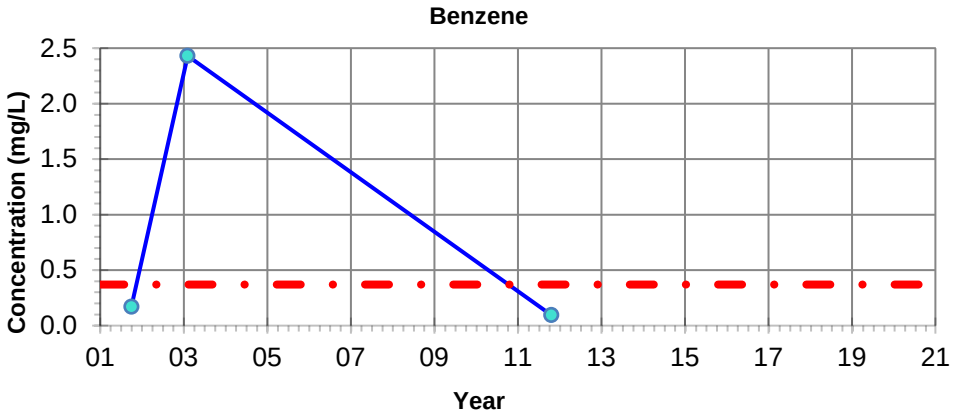

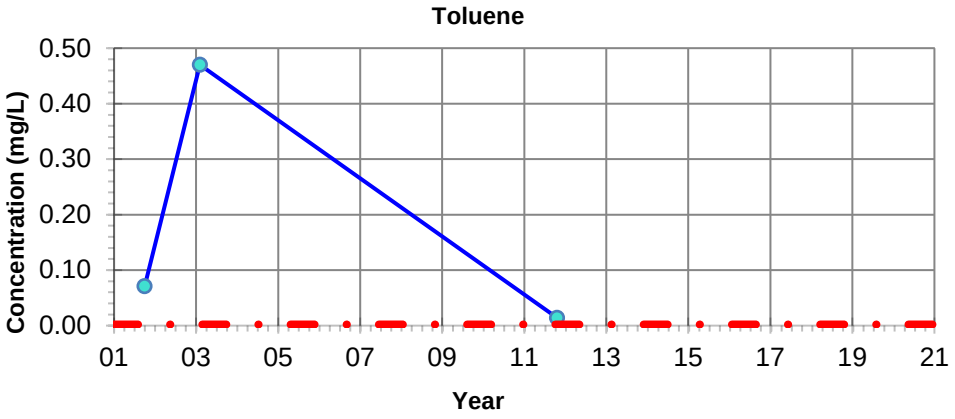

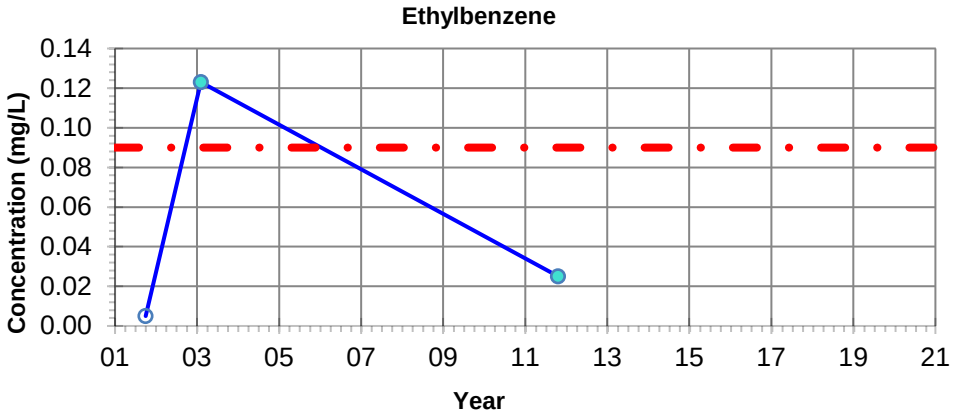

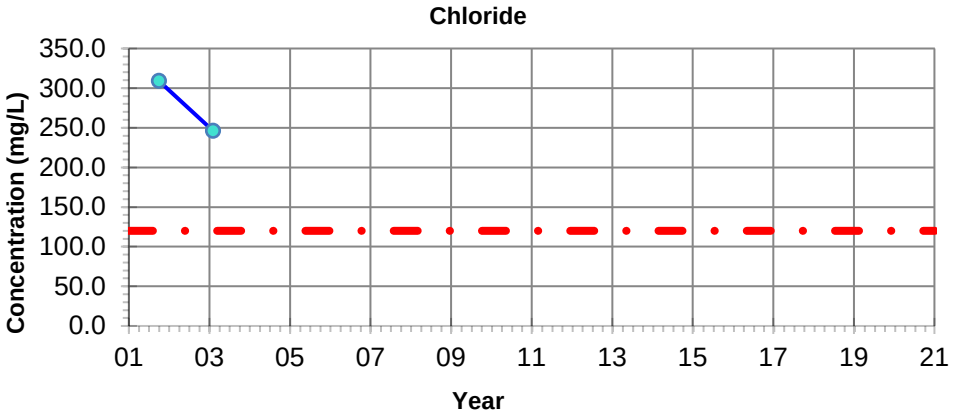

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-OBS35

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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PROJECT NUMBER:
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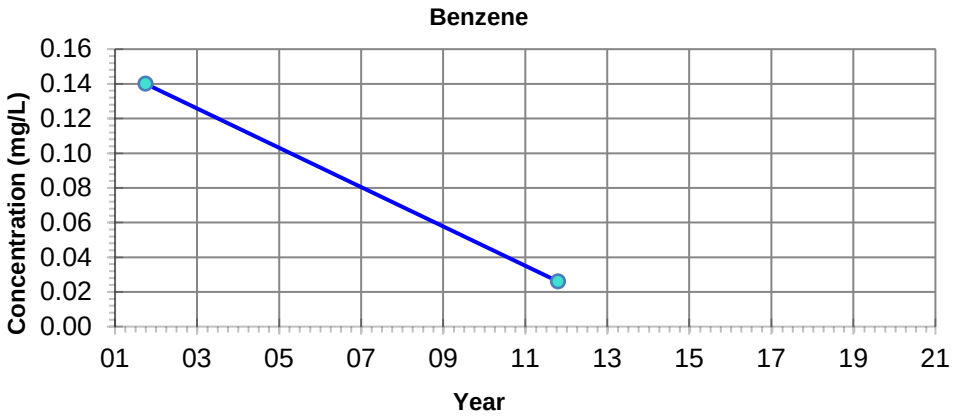

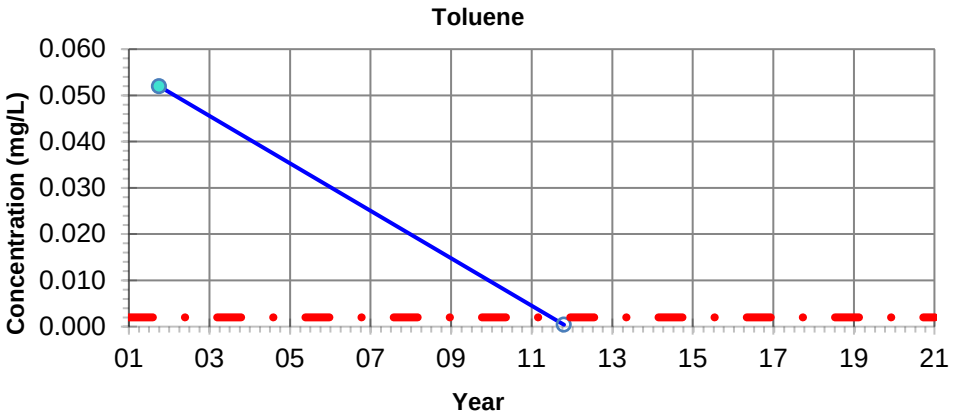

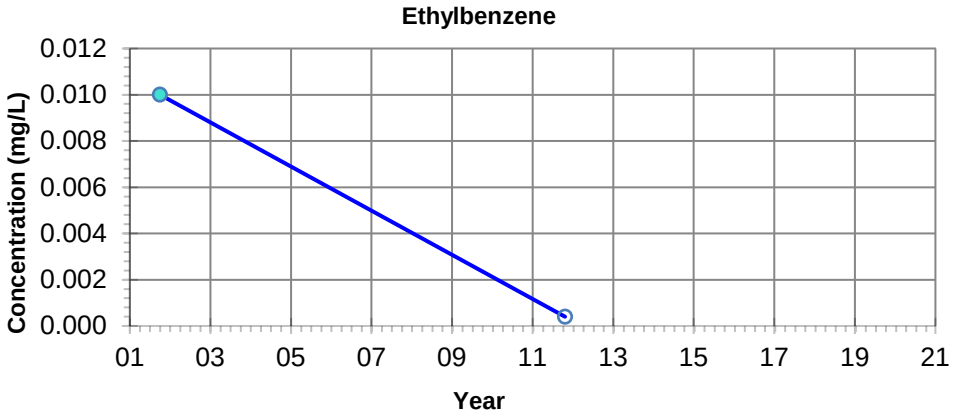

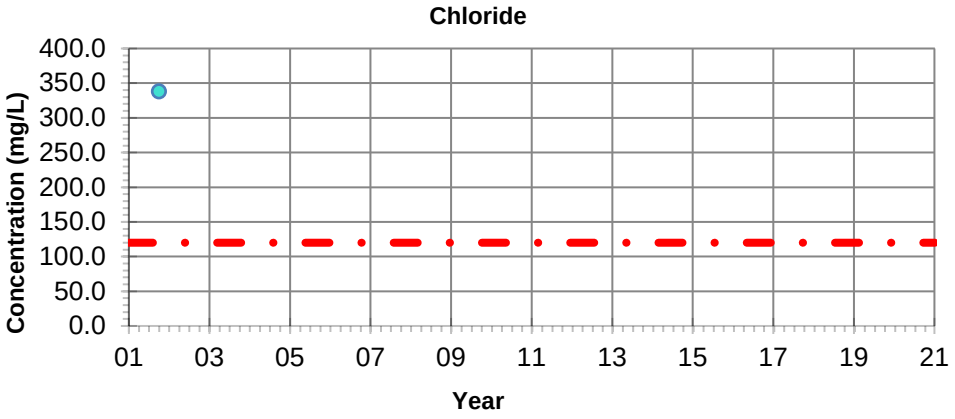

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-OBS36

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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Worley Group

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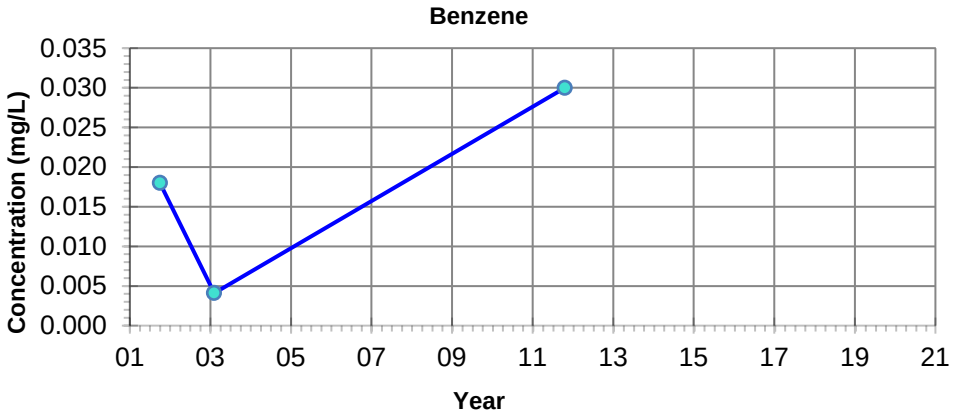

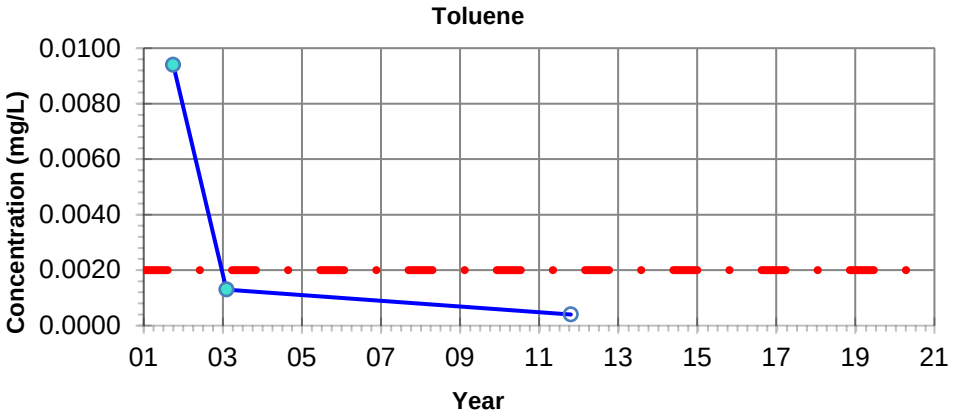

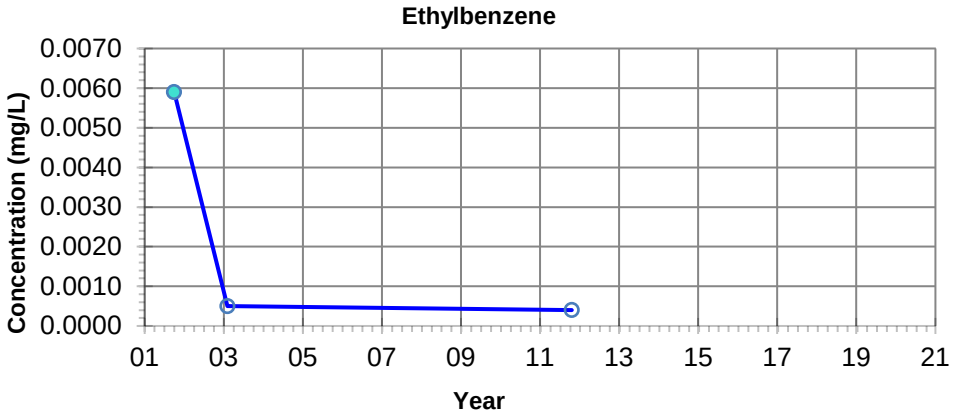

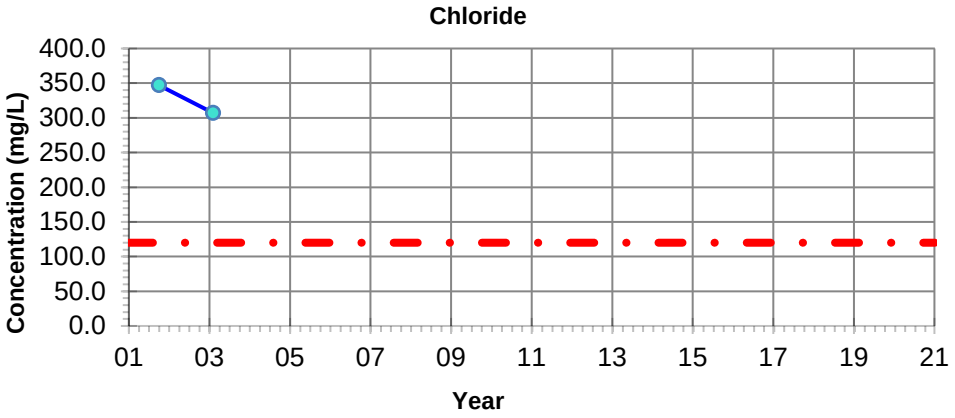

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-OBS38

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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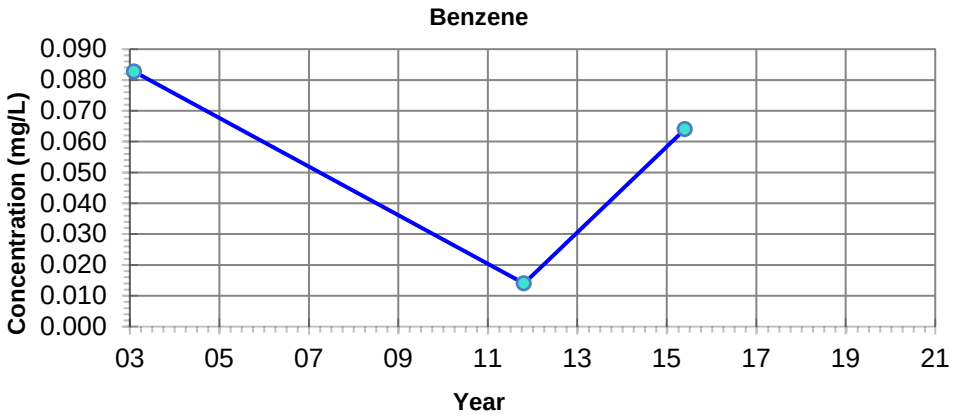

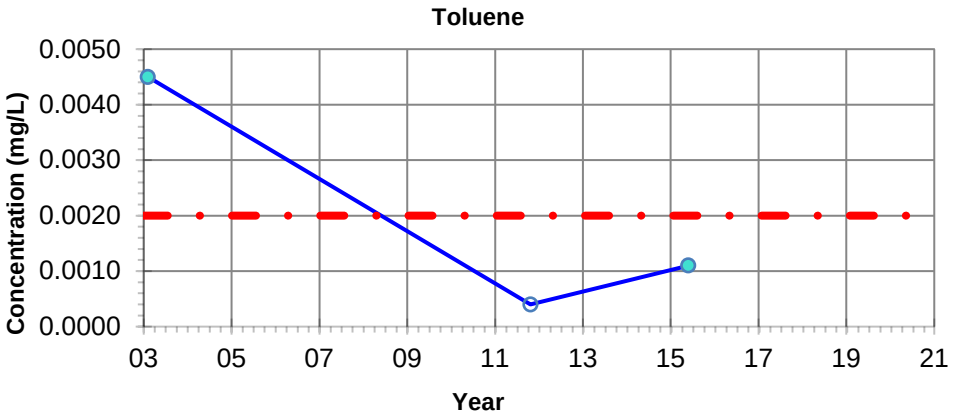

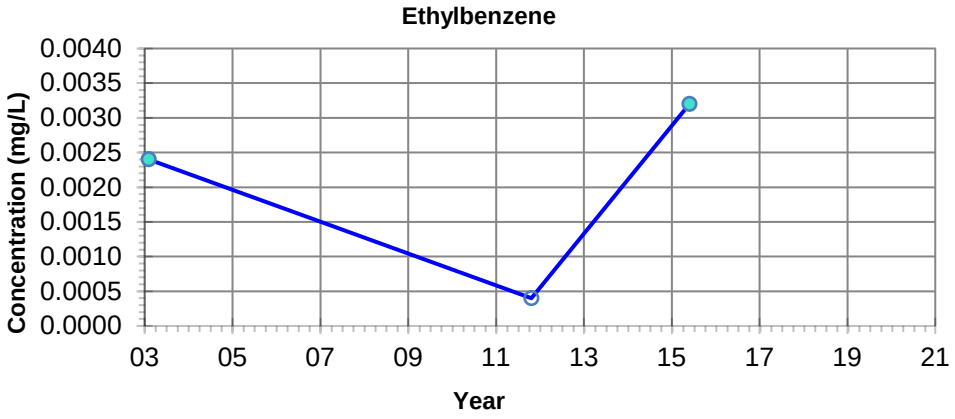

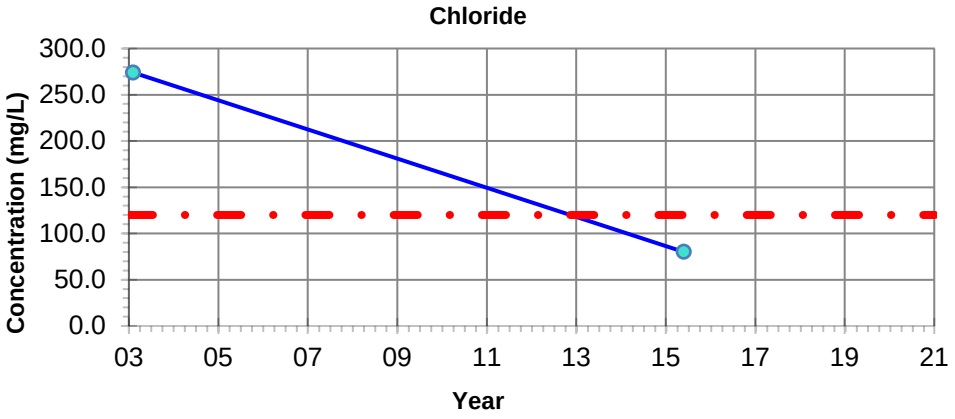

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-OBS39

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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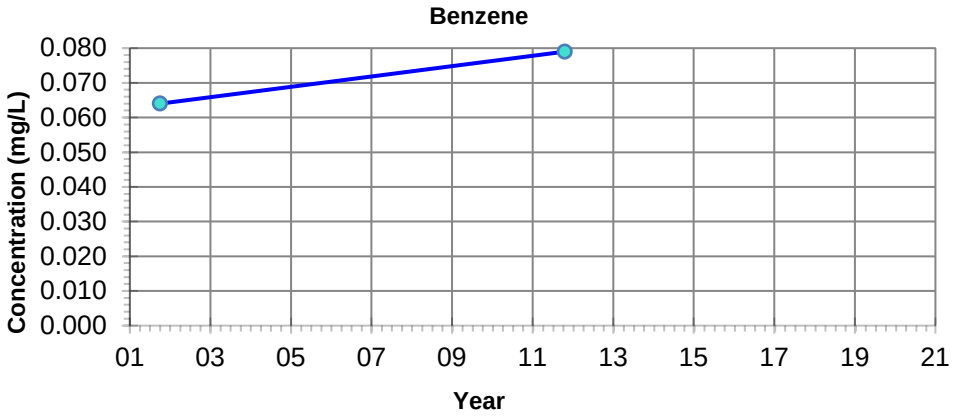

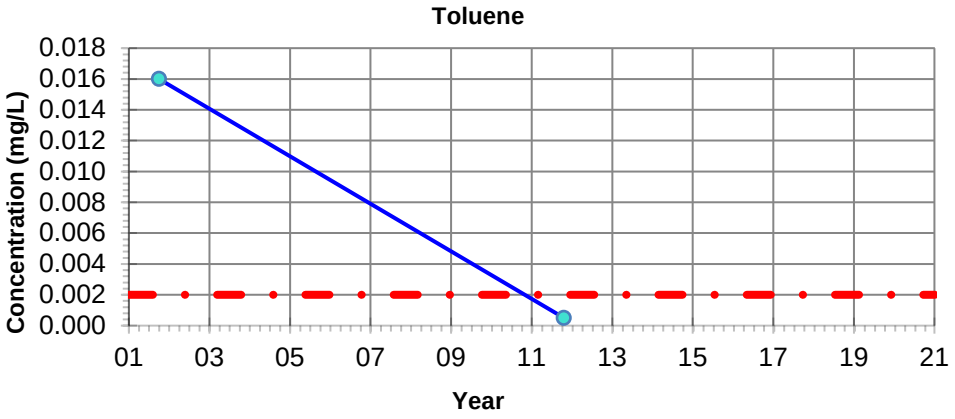

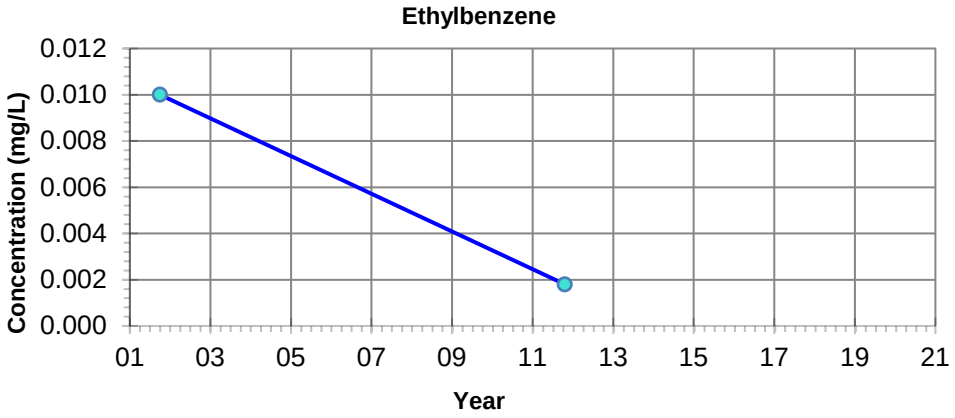

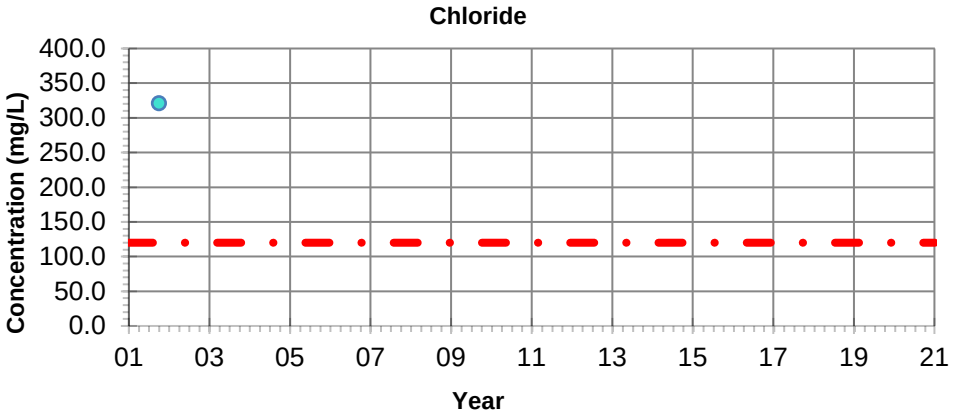

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: NWR-OBS37

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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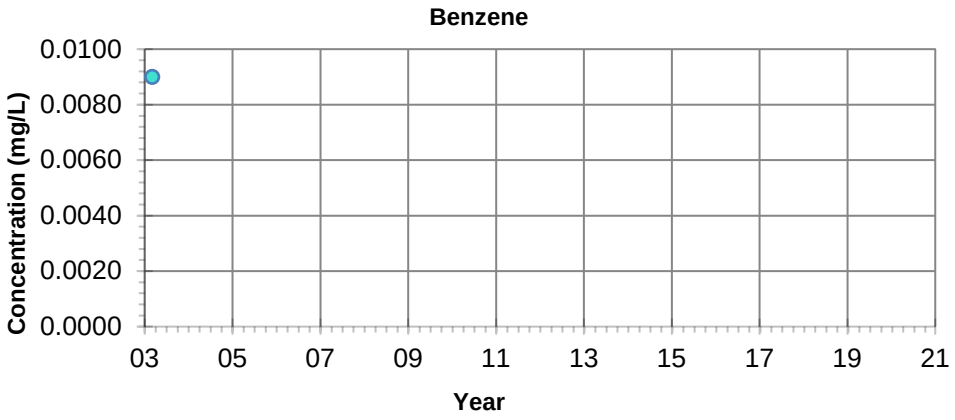

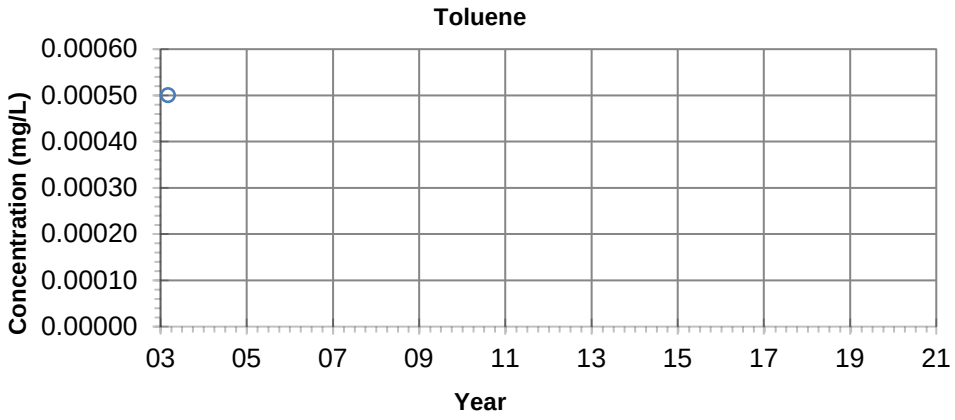

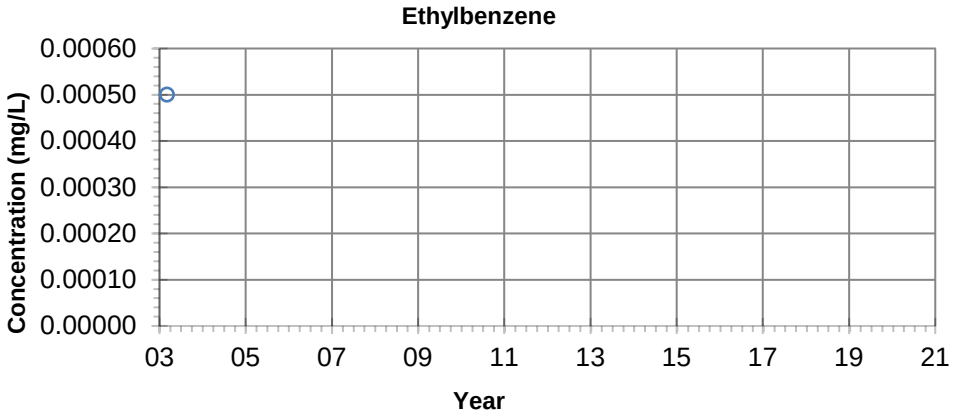

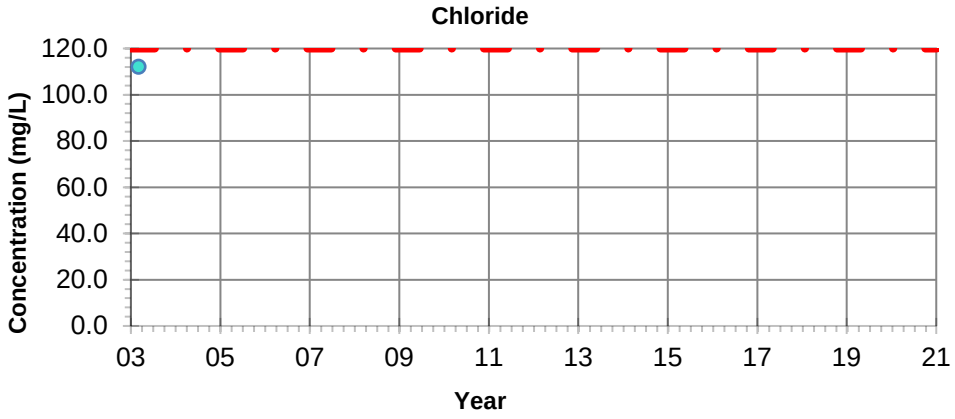

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-RW-1

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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PROJECT NUMBER:
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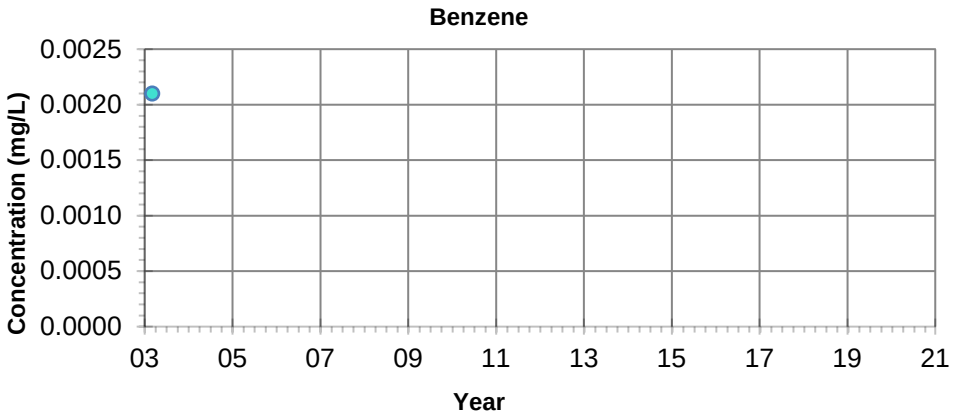

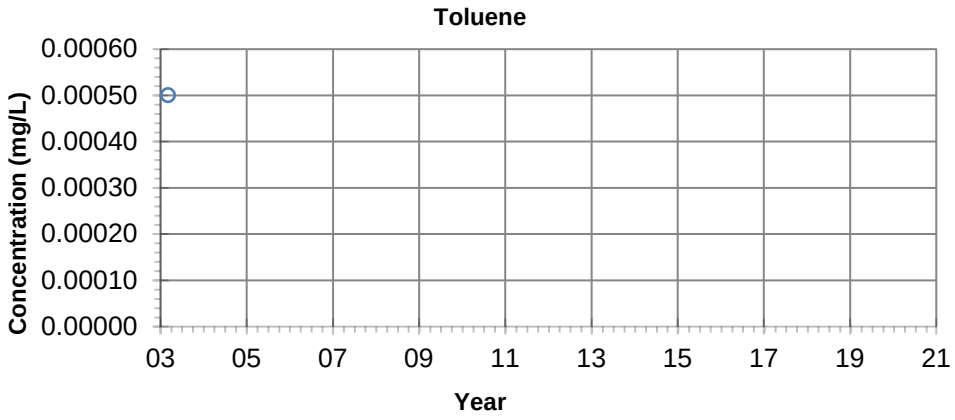

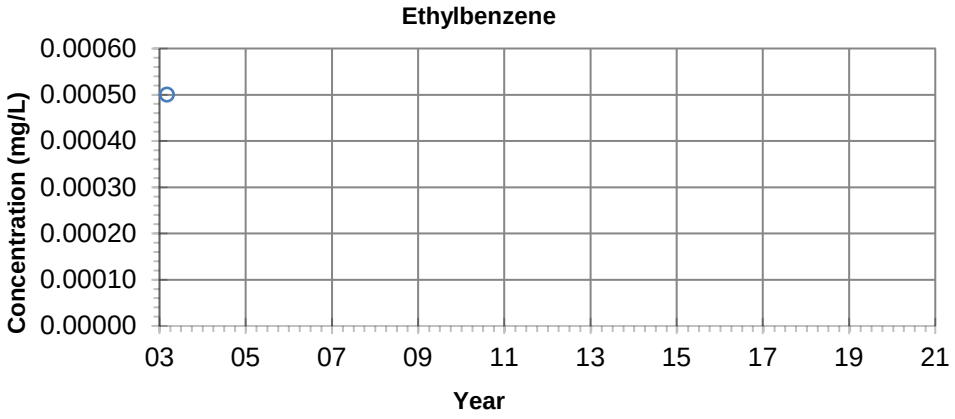

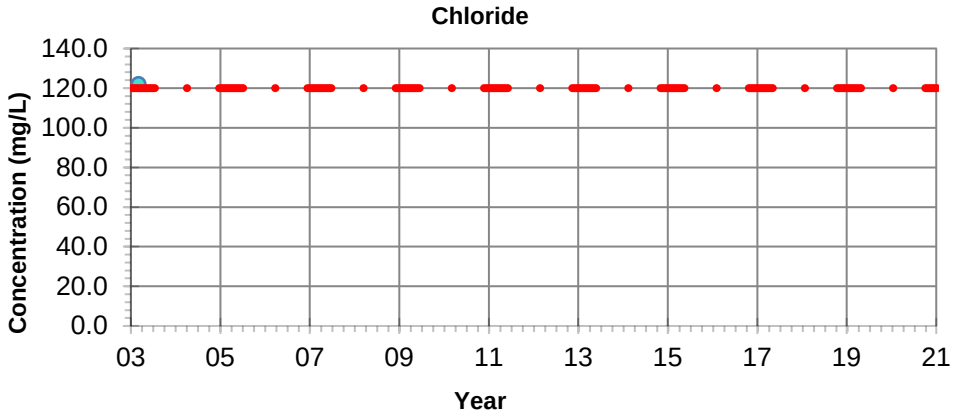

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-RW-2

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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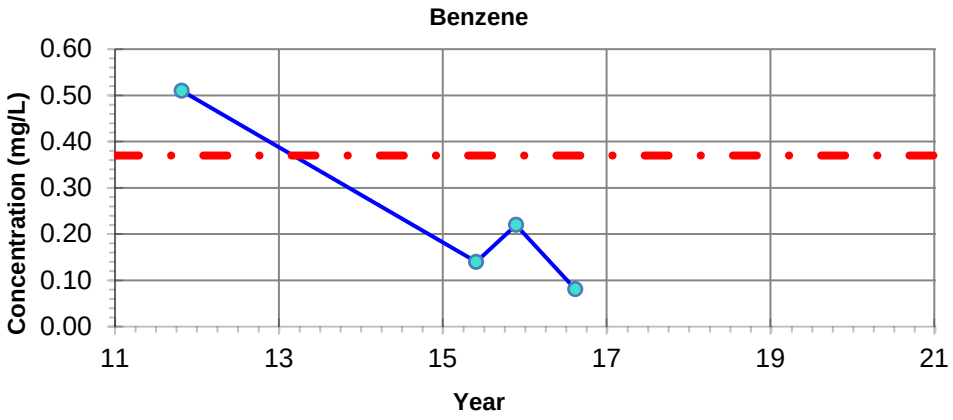

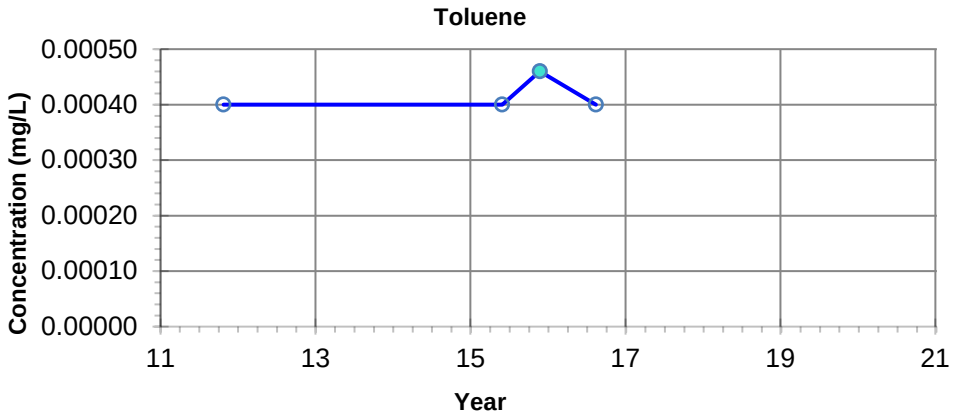

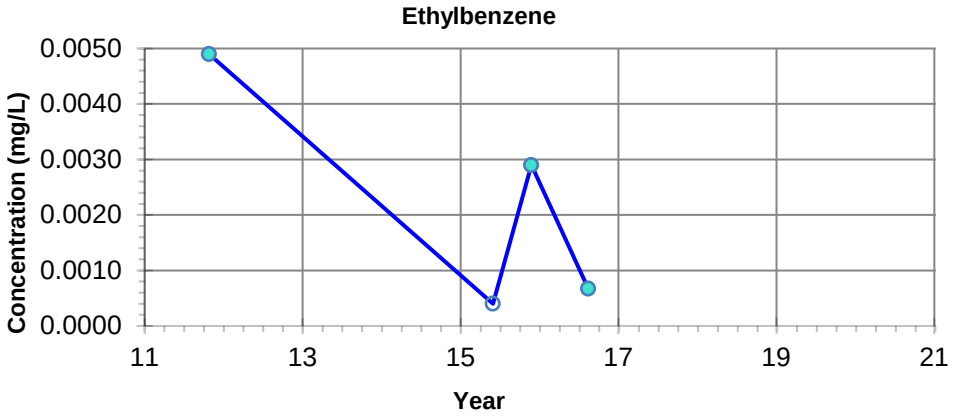

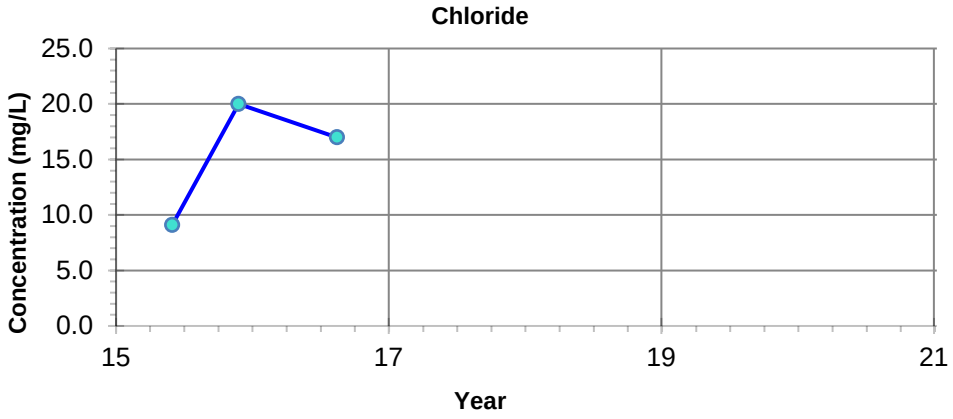

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-RW-4

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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PROJECT NUMBER:
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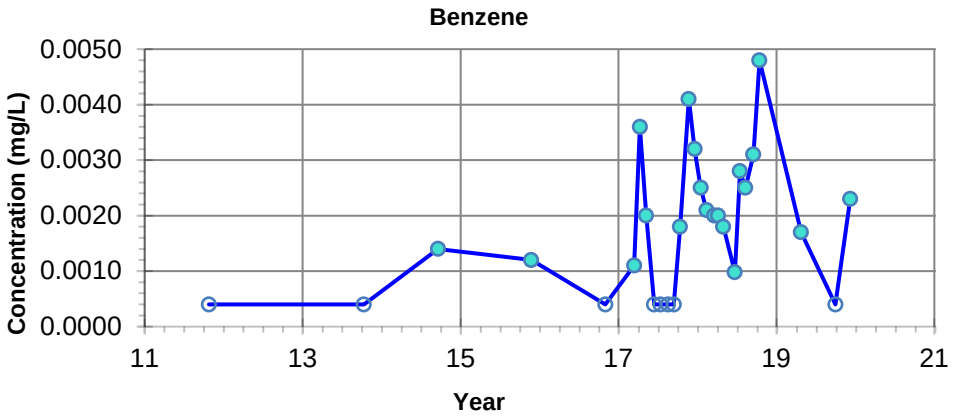

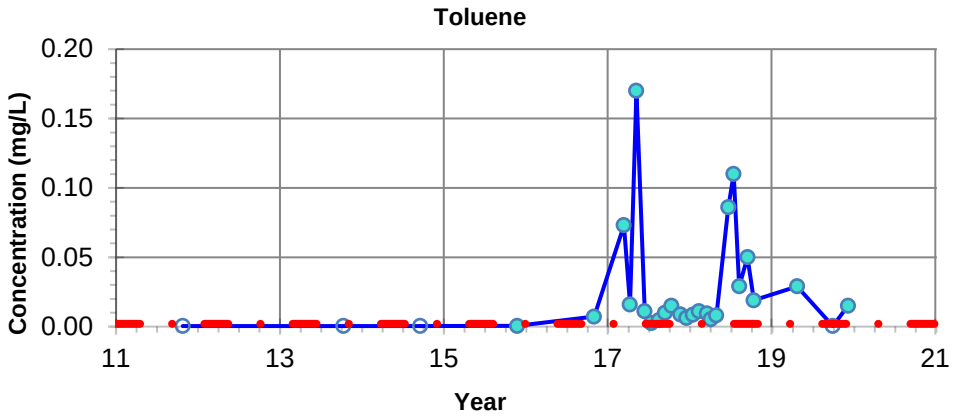

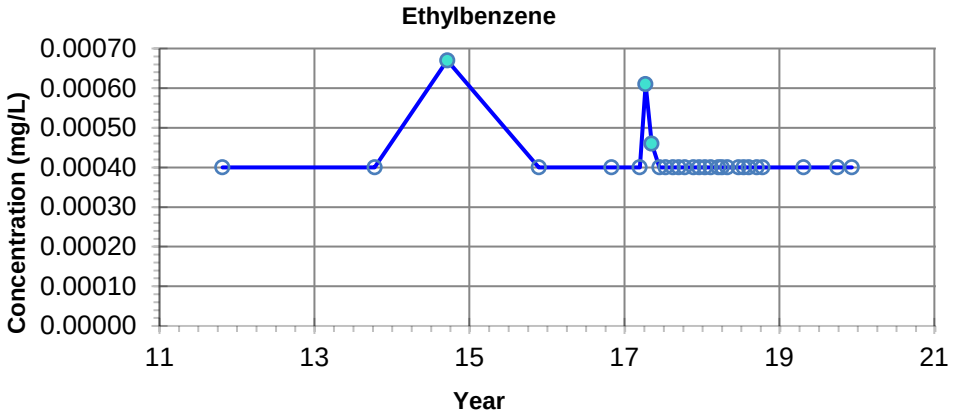

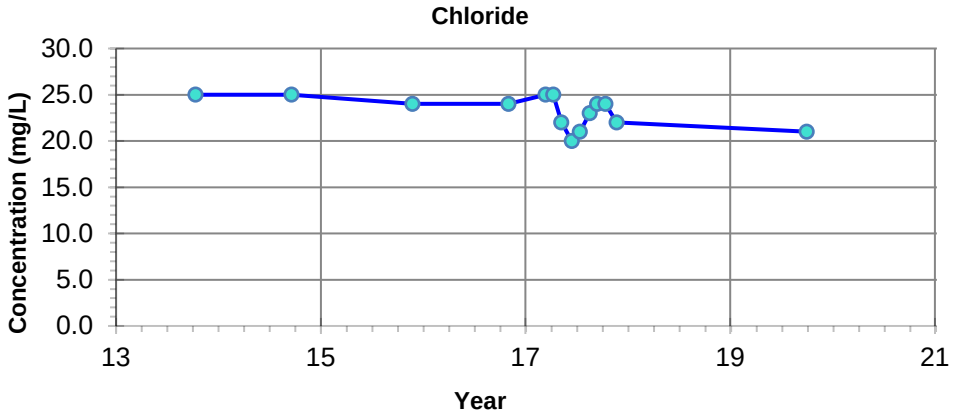

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-RW-5

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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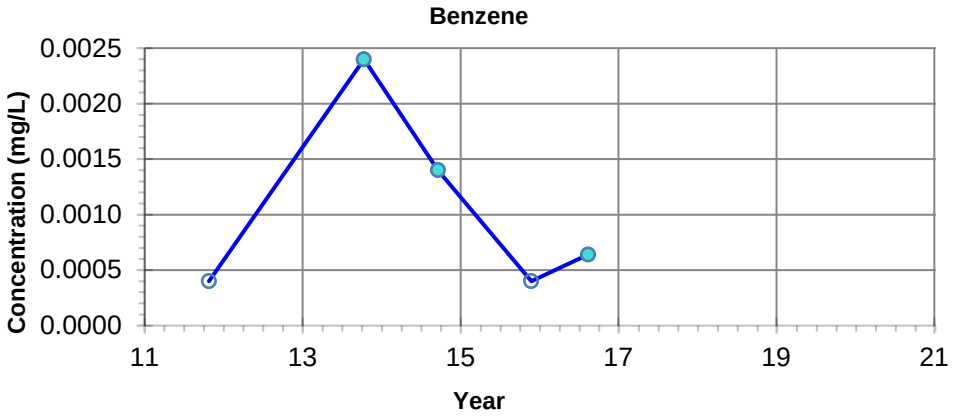

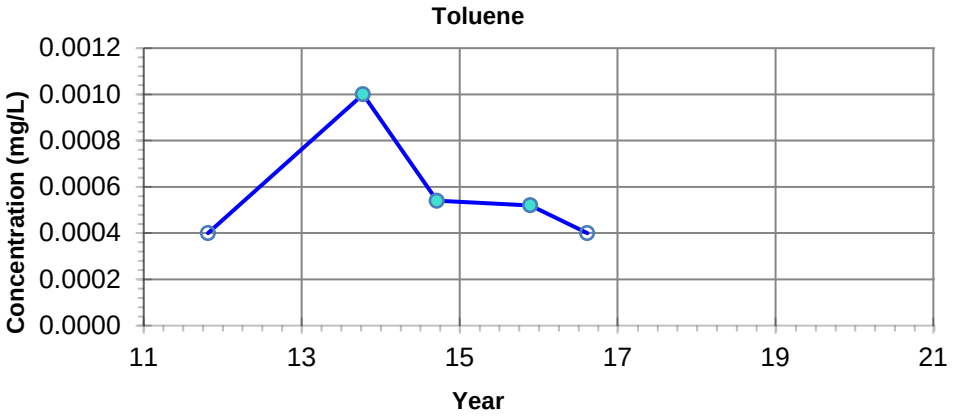

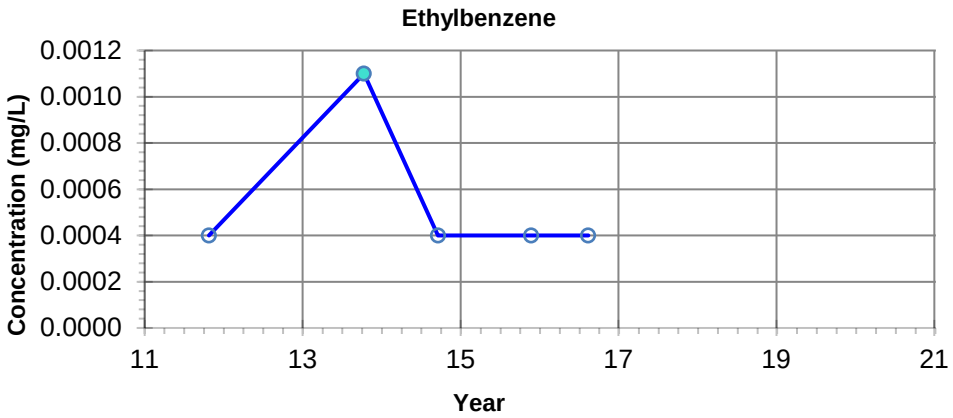

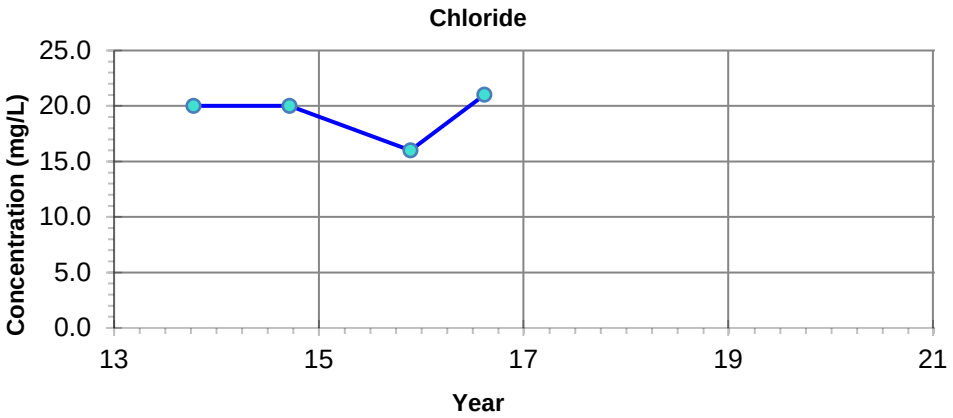

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-RW-6

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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Worley Group

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417011-00096

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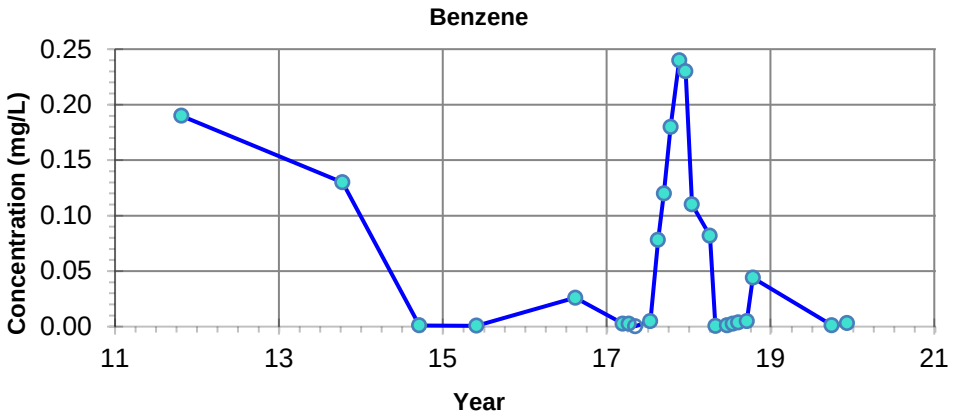

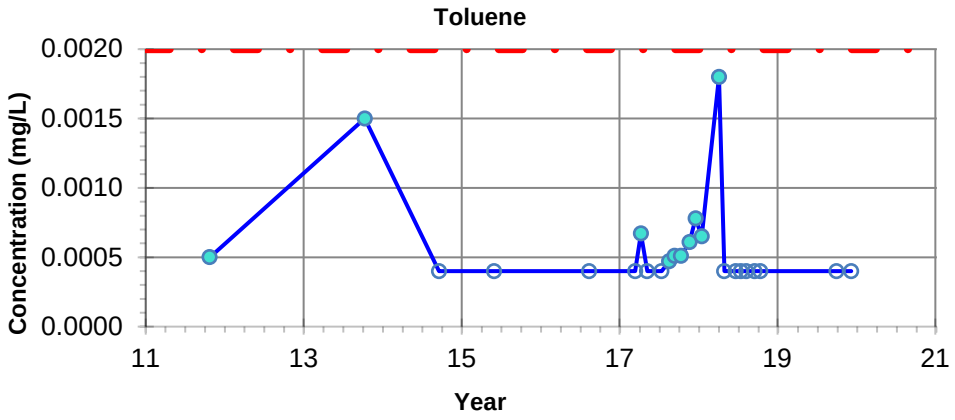

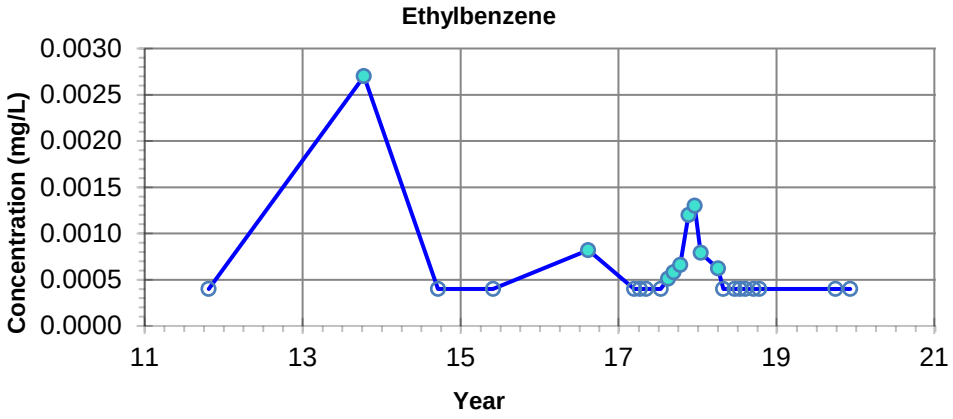

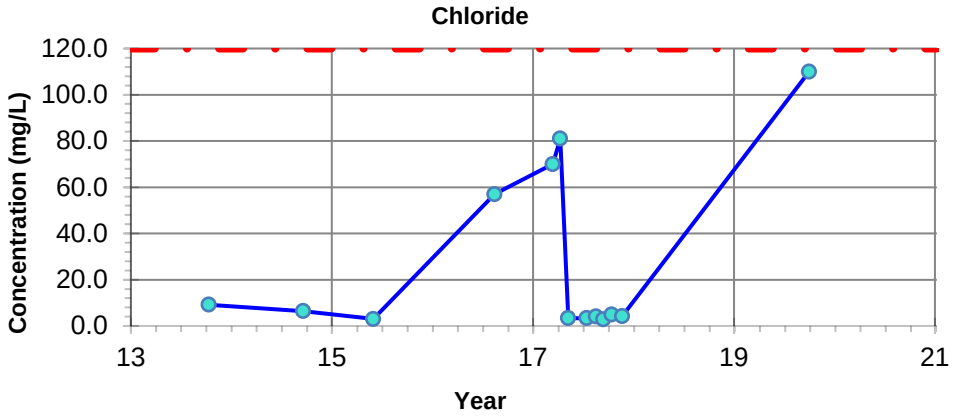

NOTES:
- Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)
- Lower control limits below zero for Sulphate and Chloride

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-RW-8

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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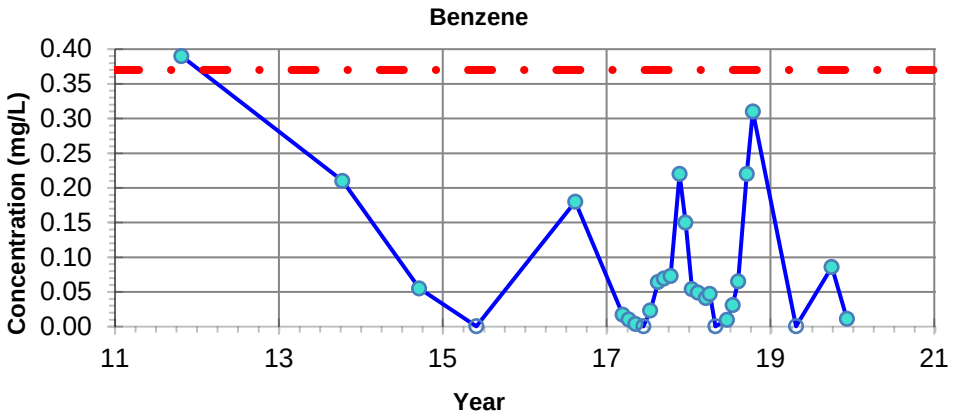
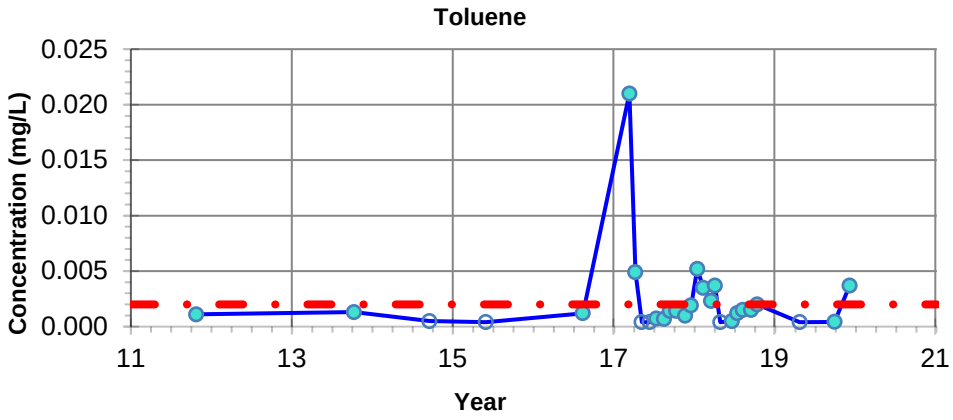
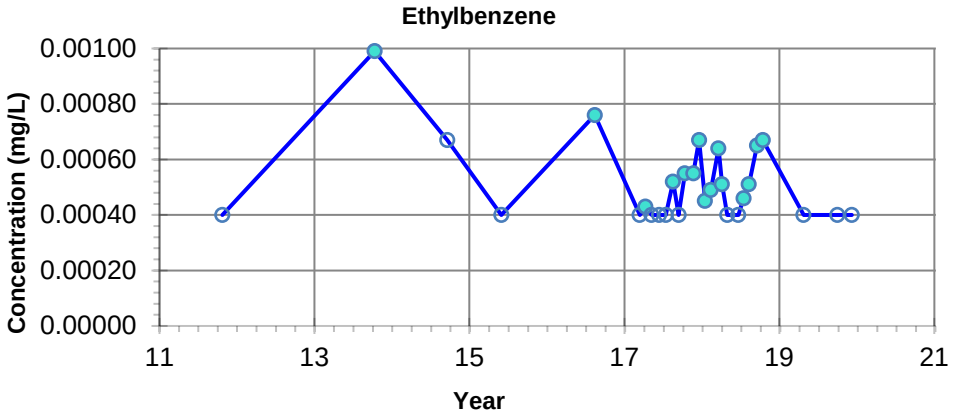
PROJECT NUMBER: 417011-00096

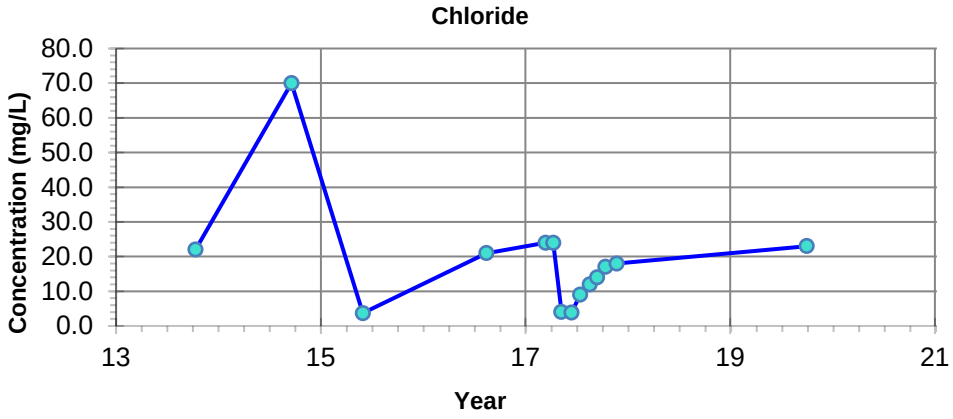
Figure 24

File Path: C:\Users\Jinrong.Cui\Desktop\Graphs\417011-00096









NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-RW-9

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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PROJECT NUMBER:
417011-00096

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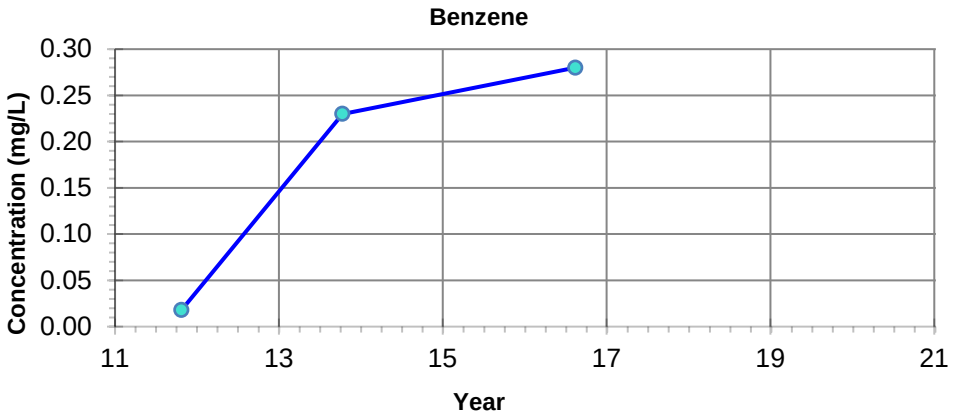

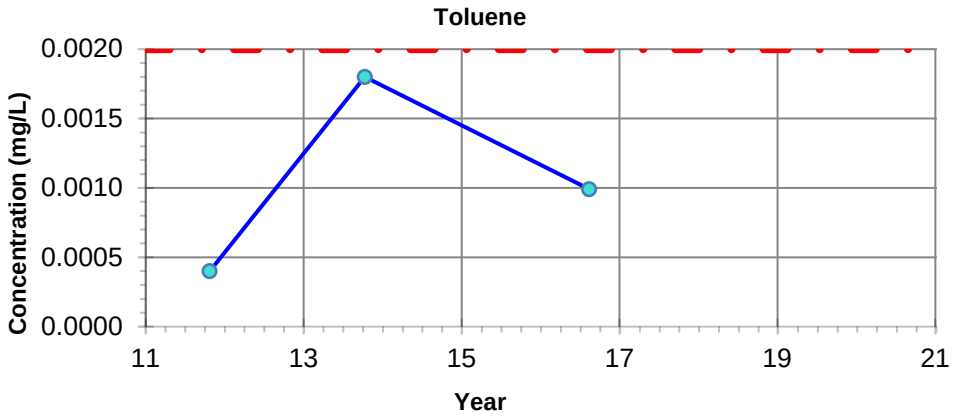

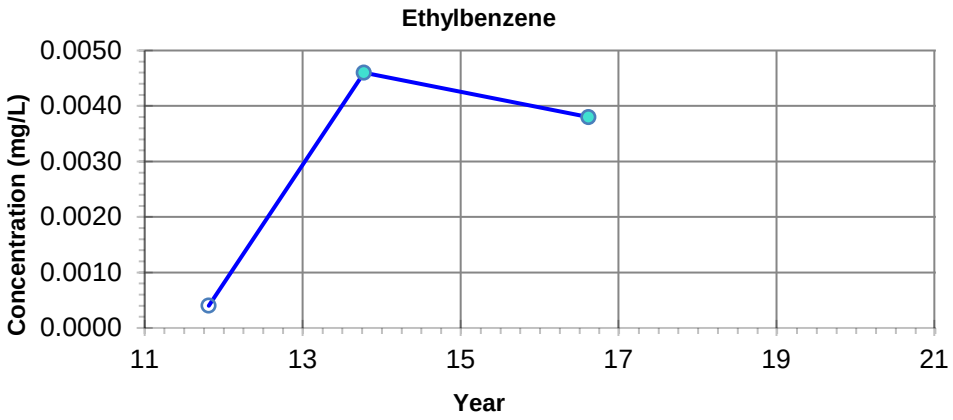

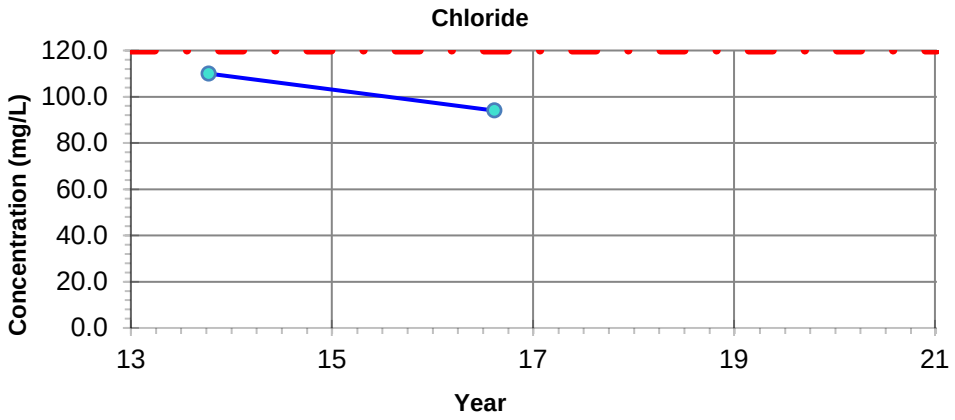

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-RW-10

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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PROJECT NUMBER:
417011-00096

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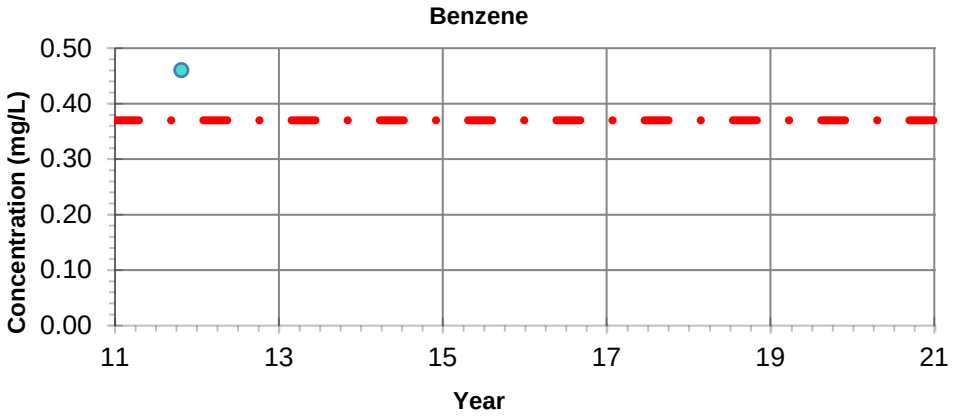

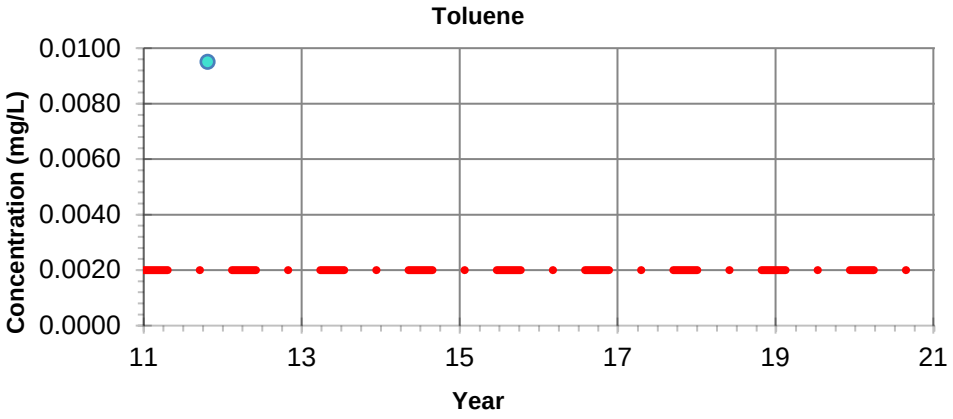

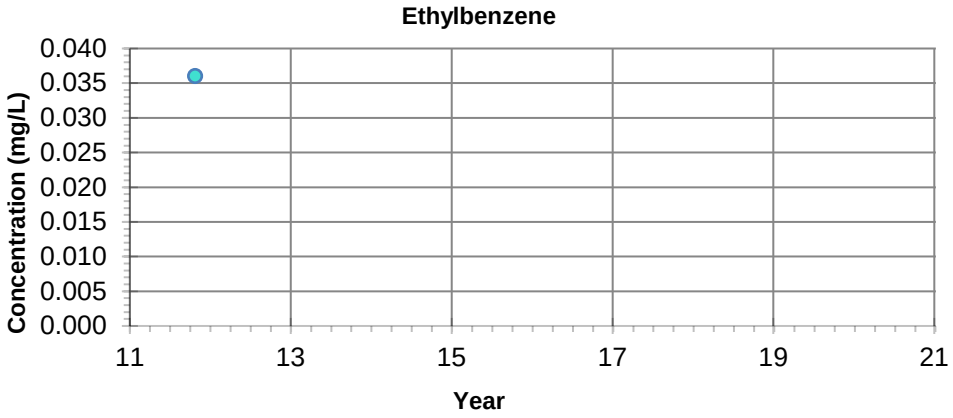

***** No Chloride Data *****

NOTES: **- Filled symbols denote Sample Values**
- Unfilled symbols denote Values < Detection Limit(s)

GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-RW-11

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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PROJECT NUMBER:
417011-00096

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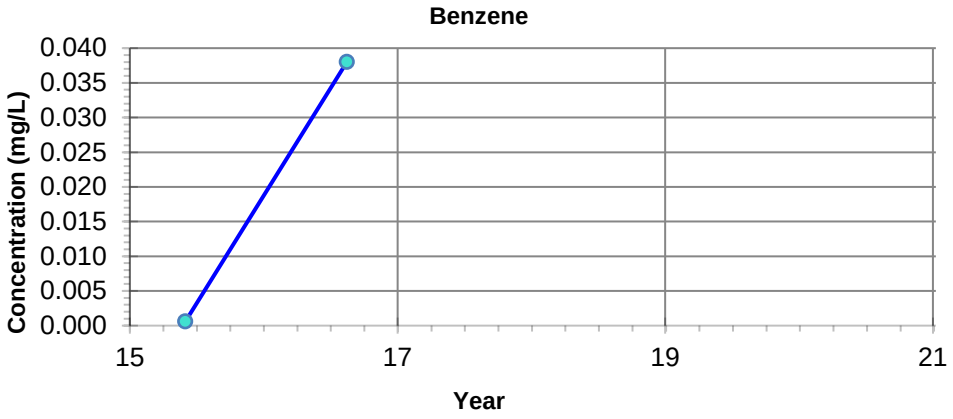

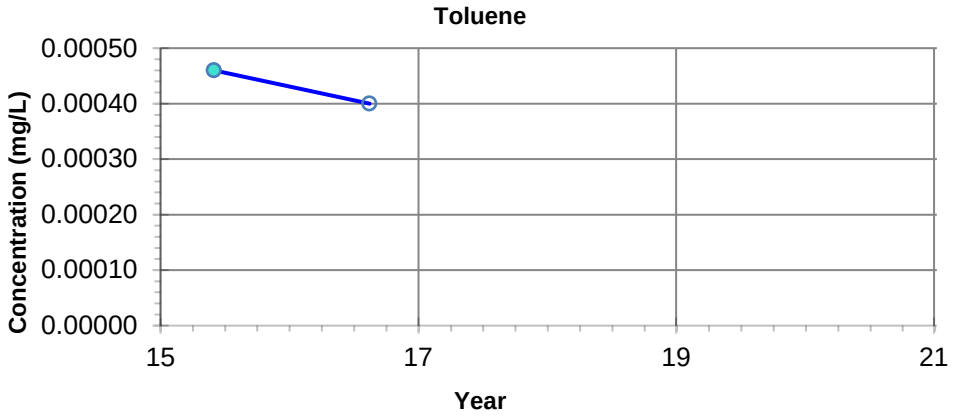

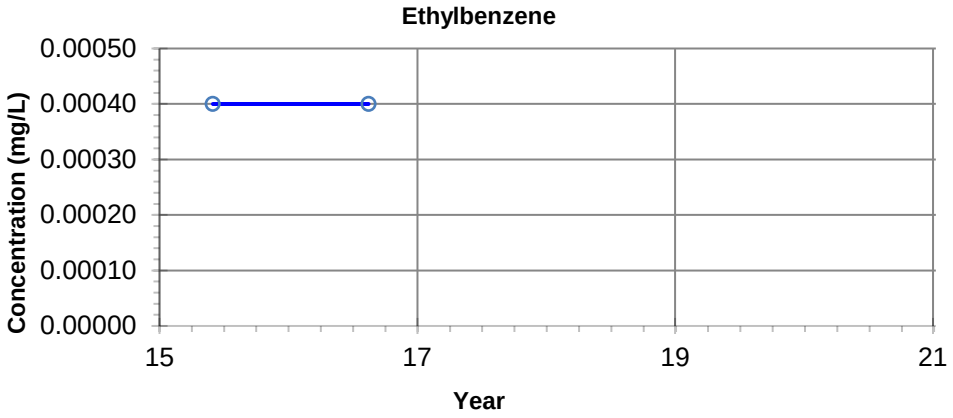

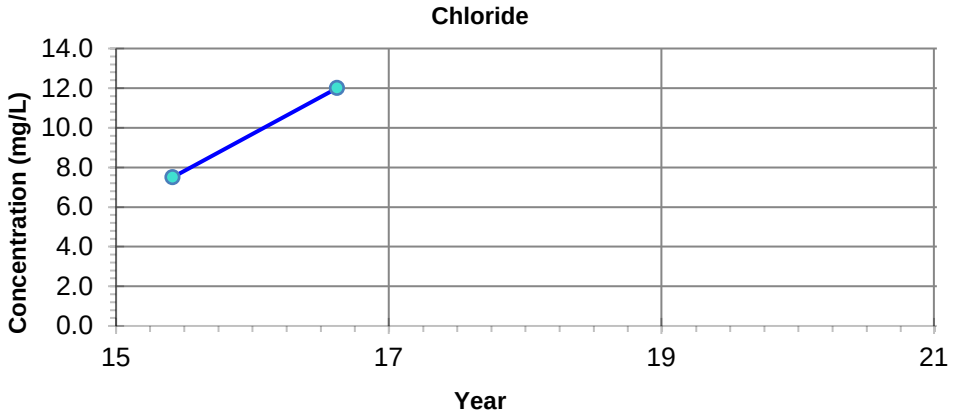

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-RW-12

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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PROJECT NUMBER:
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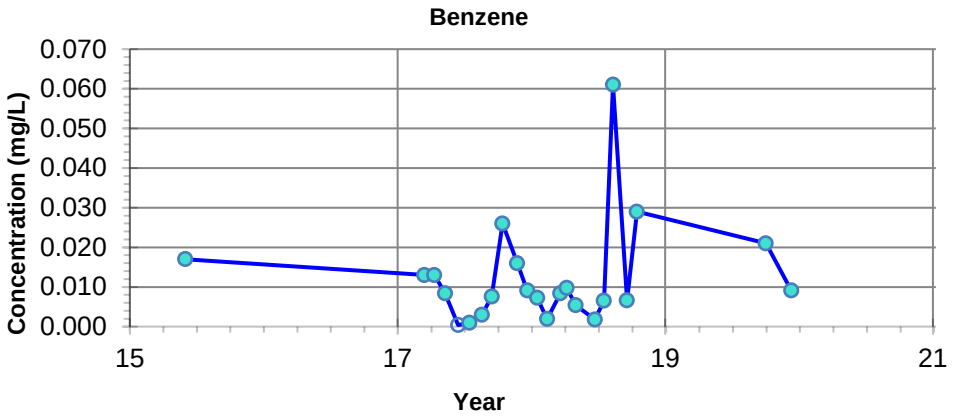

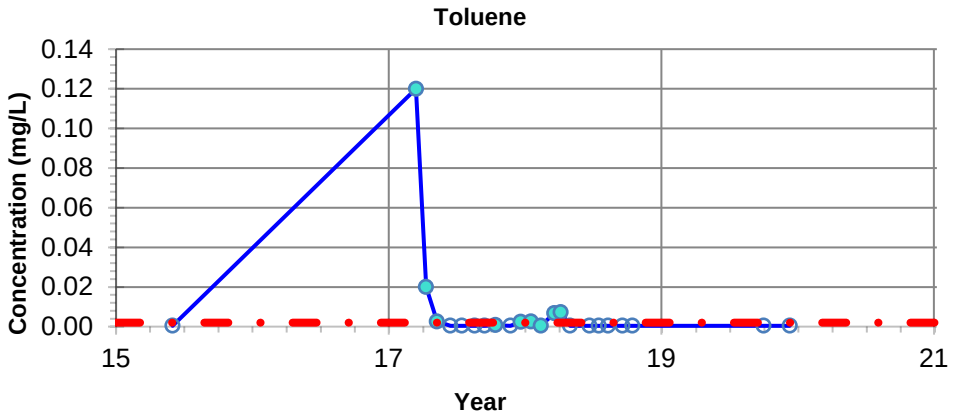

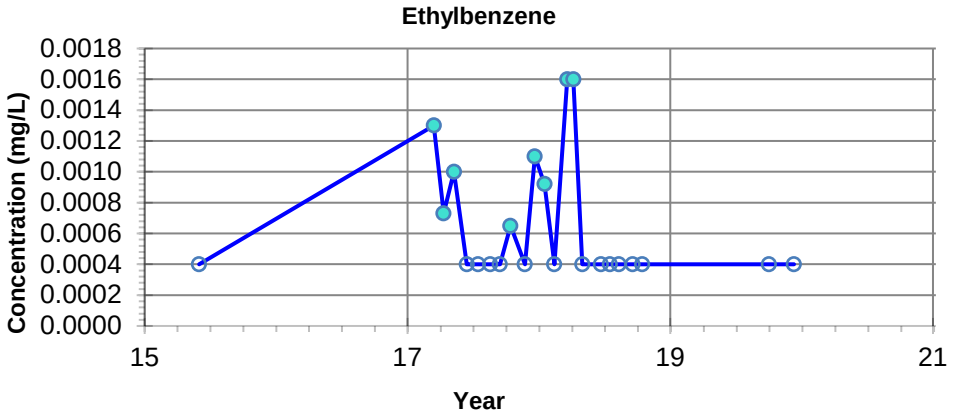

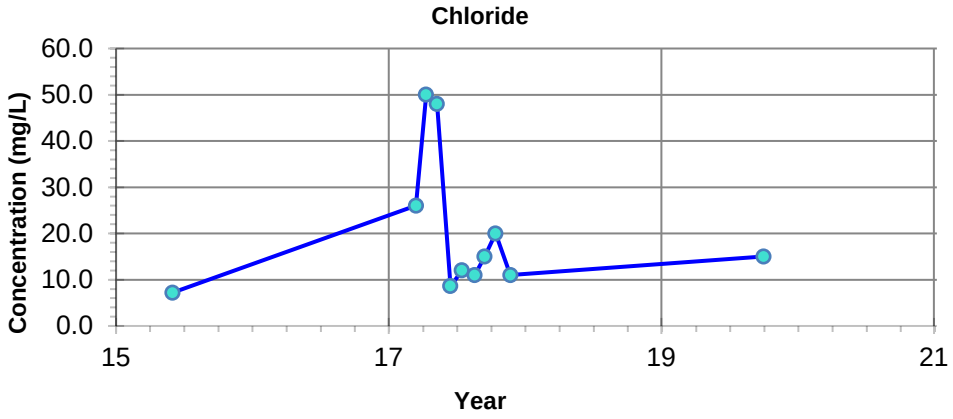

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-RW-13

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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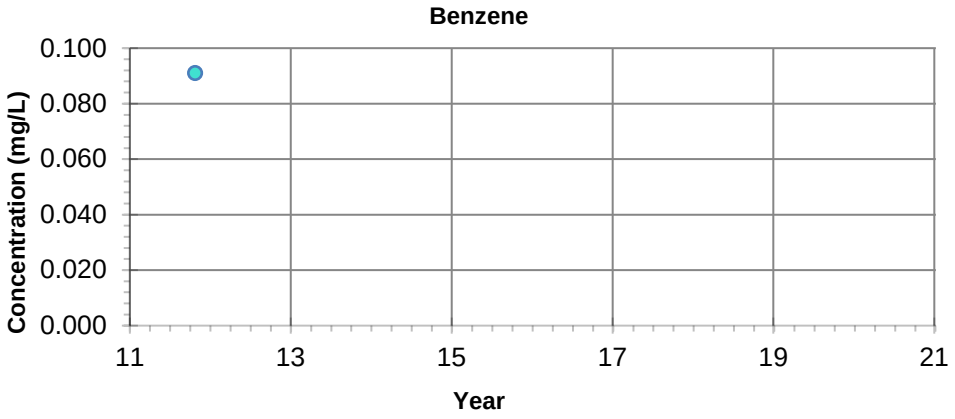

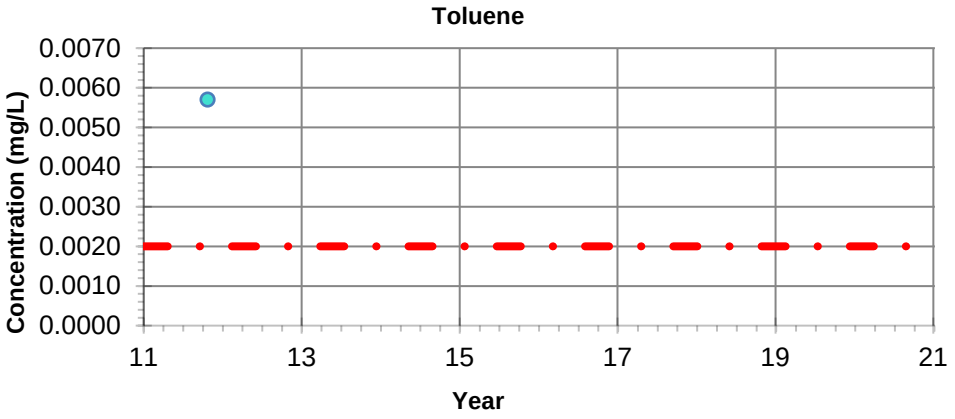

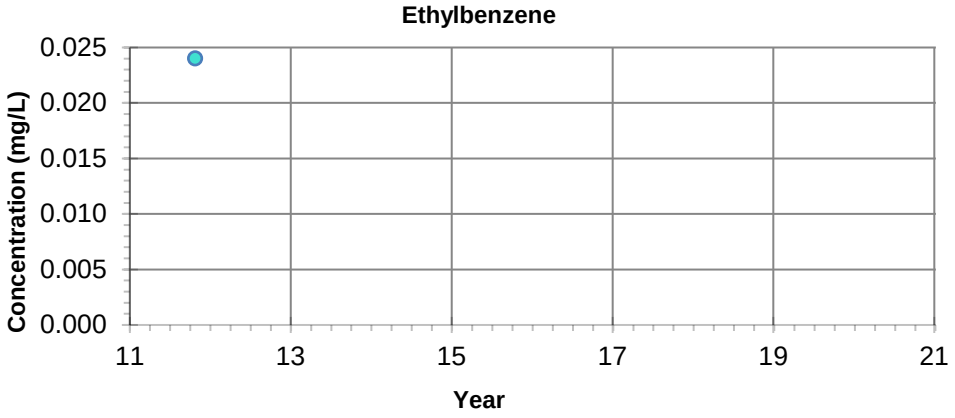

***** No Chloride Data *****

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-RW-14

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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PROJECT NUMBER:
417011-00096

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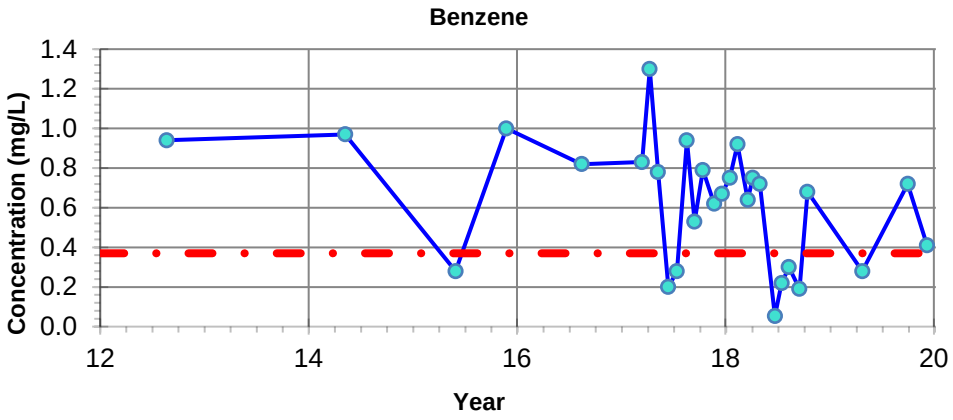

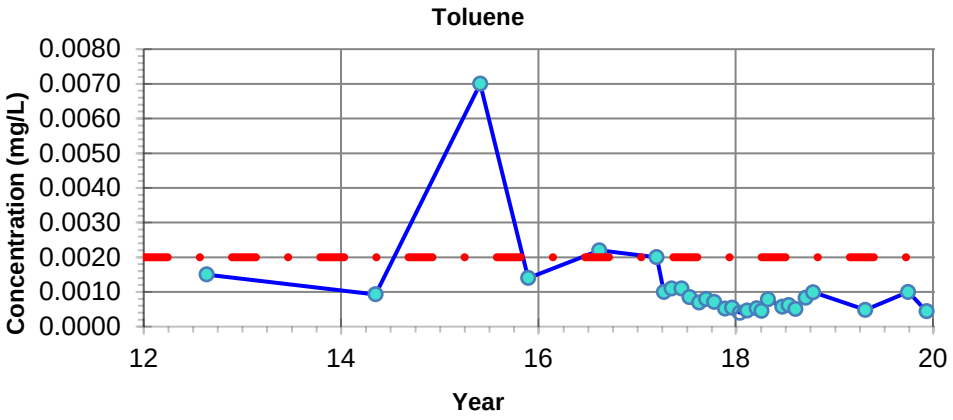

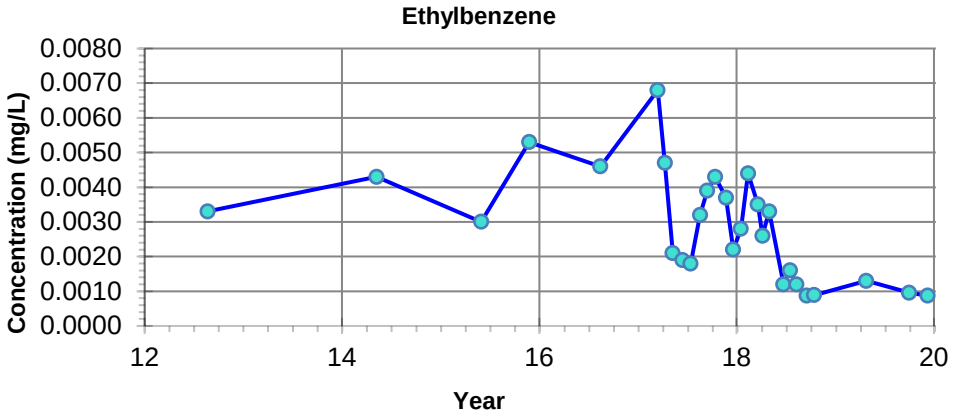

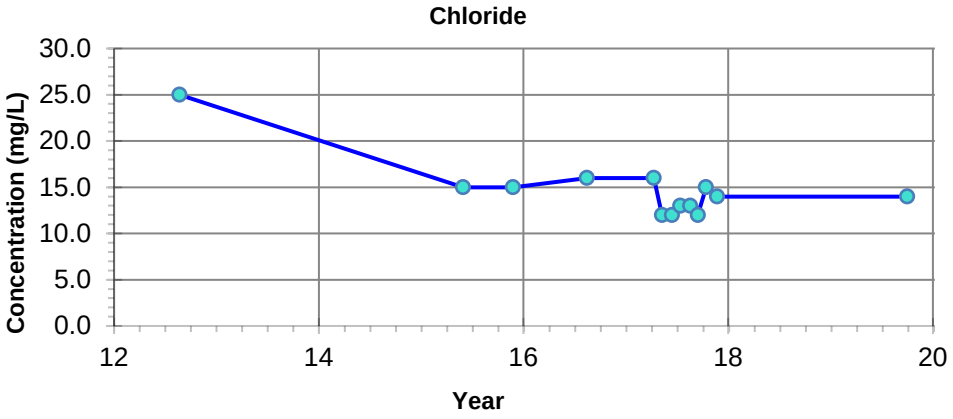

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-OBS-46

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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PROJECT NUMBER:
417011-00096

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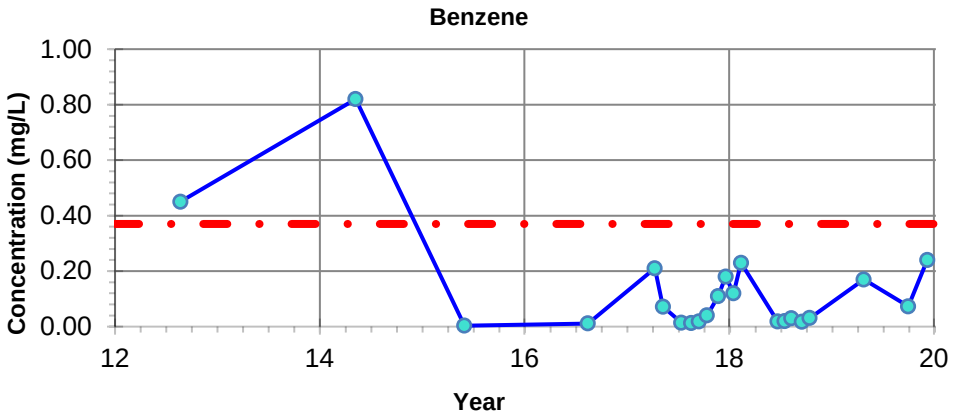

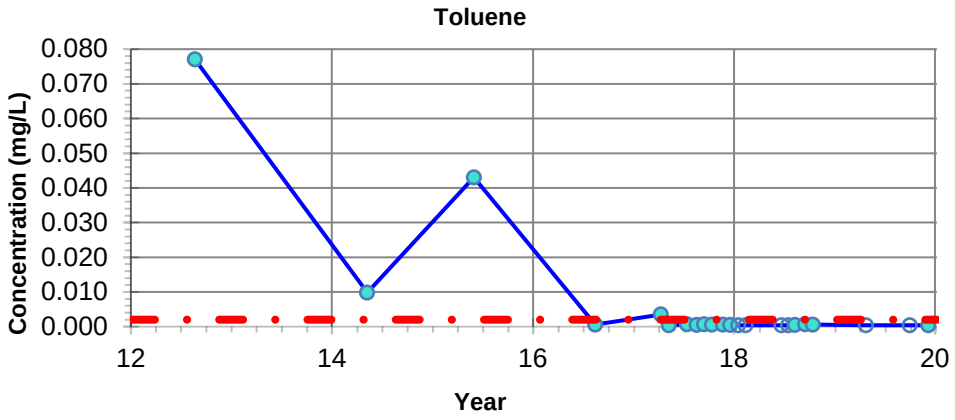

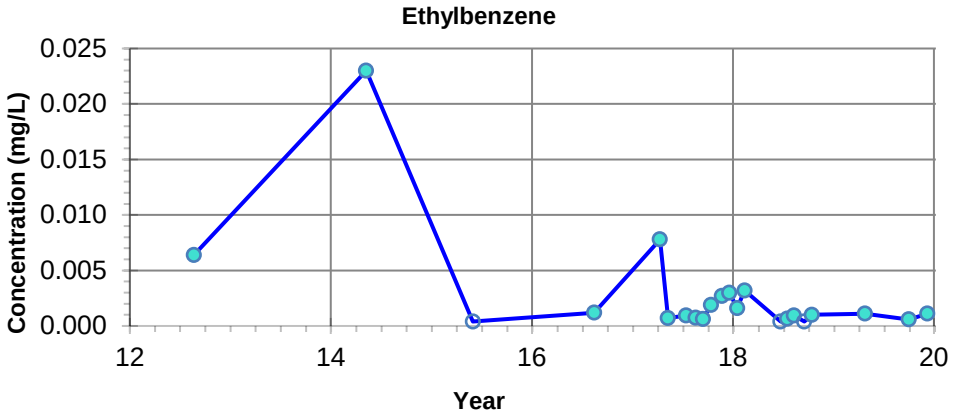

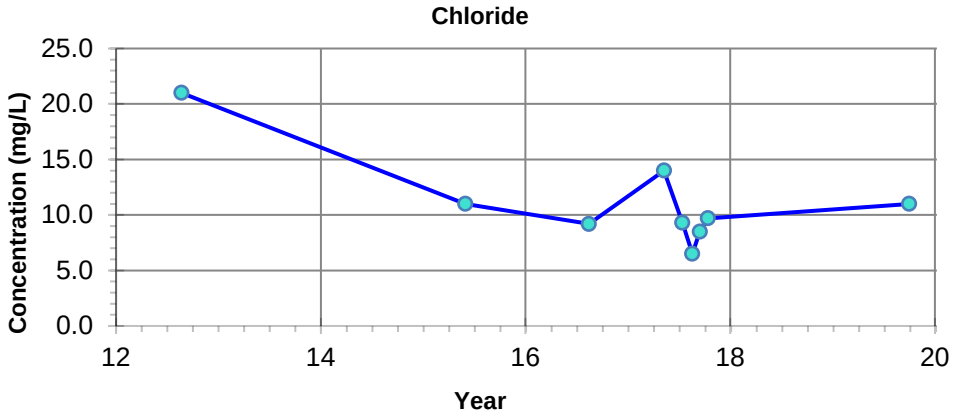

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-OBS-47

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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PROJECT NUMBER:
417011-00096

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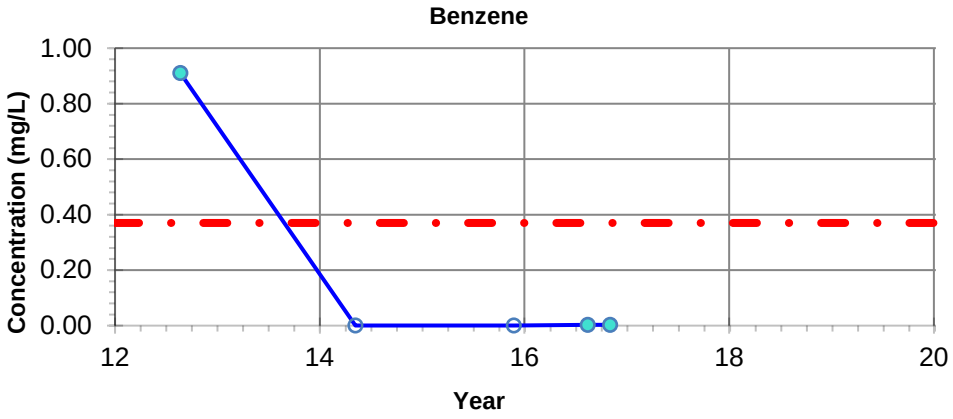

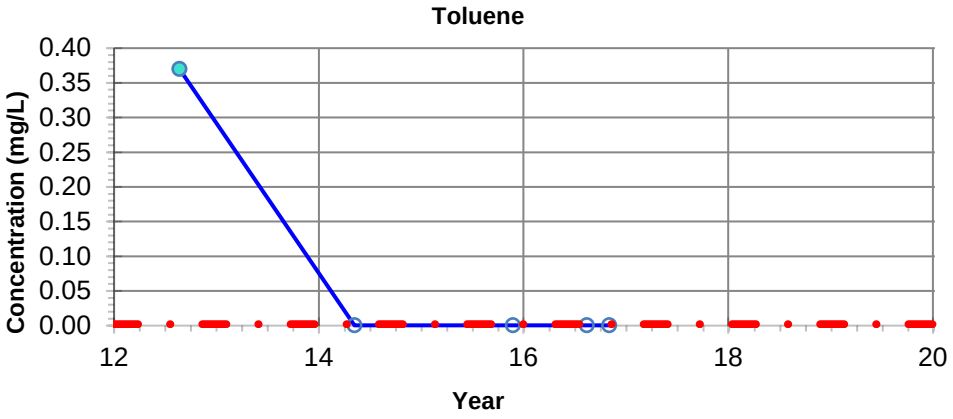

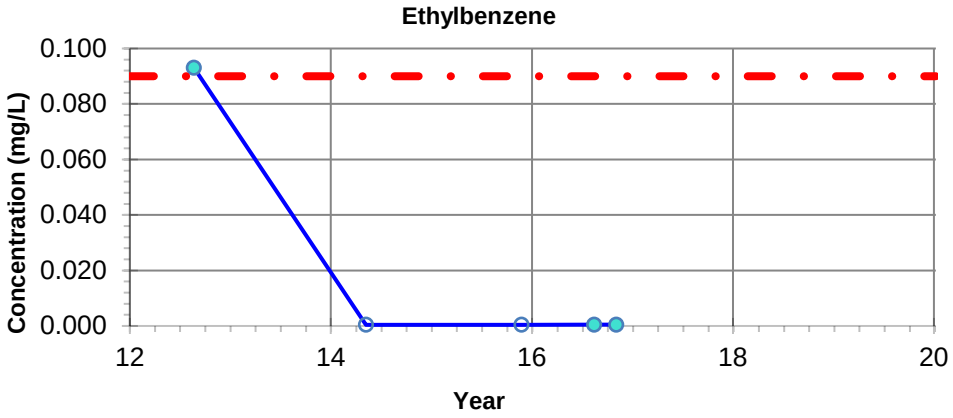

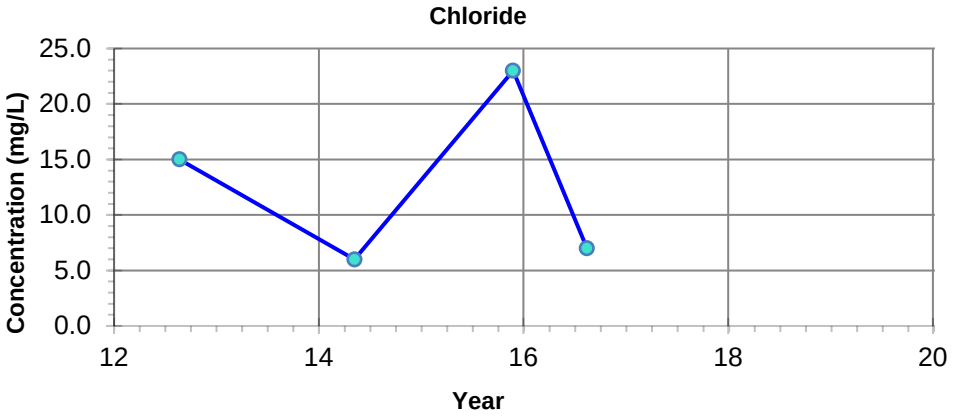

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-OBS-48

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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Worley Group

PROJECT NUMBER:
417011-00096

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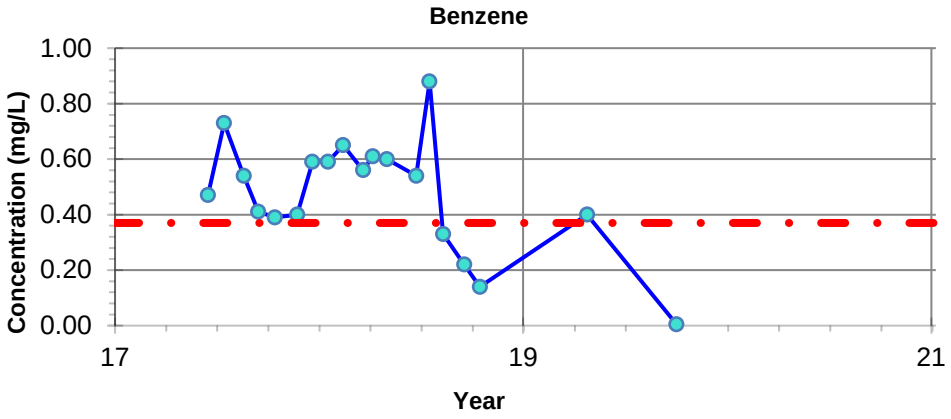

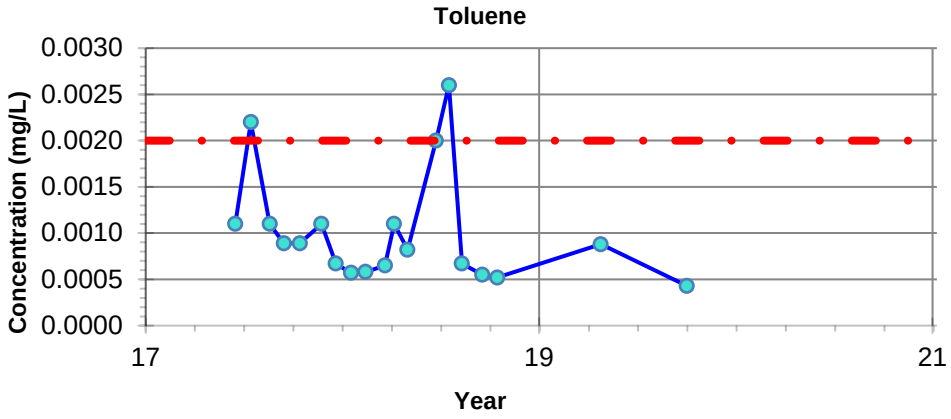

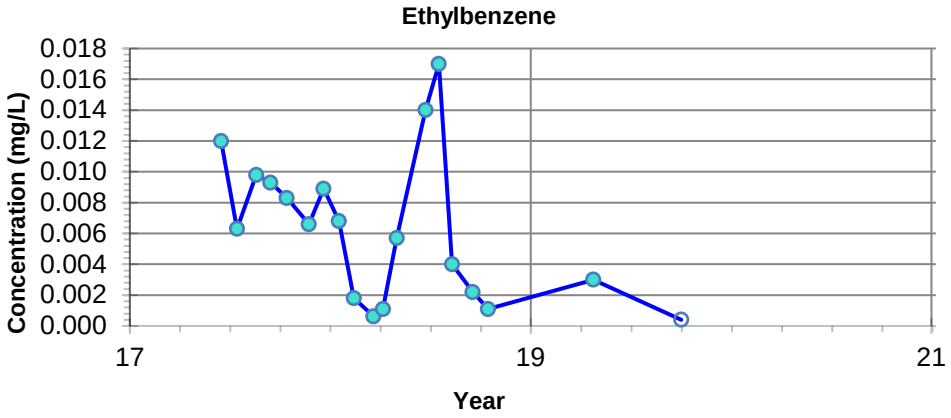

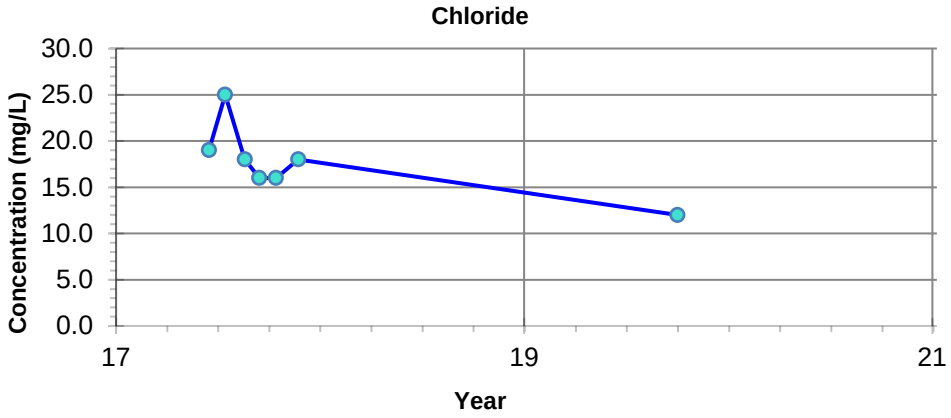

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-MW17-01

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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PROJECT NUMBER:
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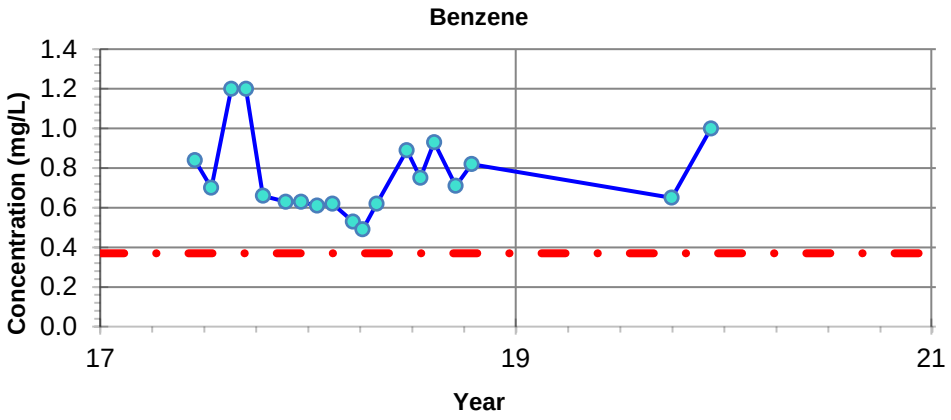

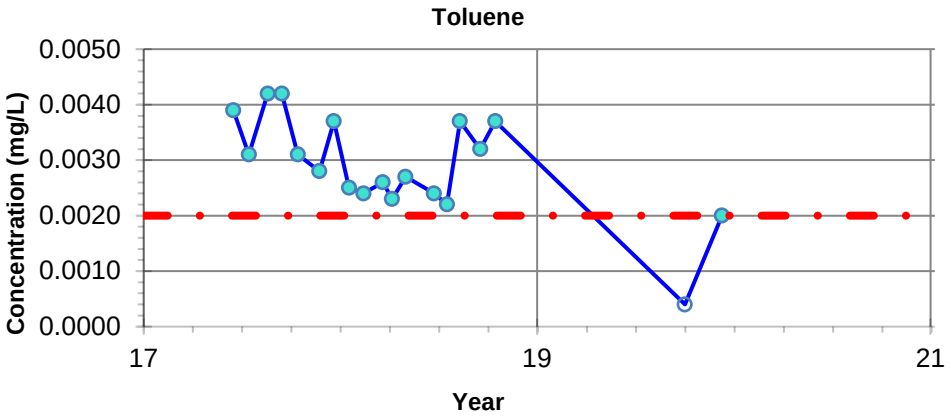

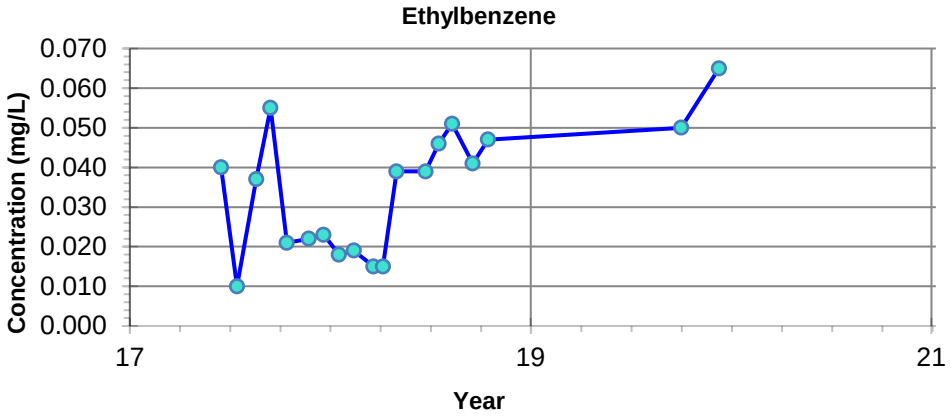

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-MW17-02

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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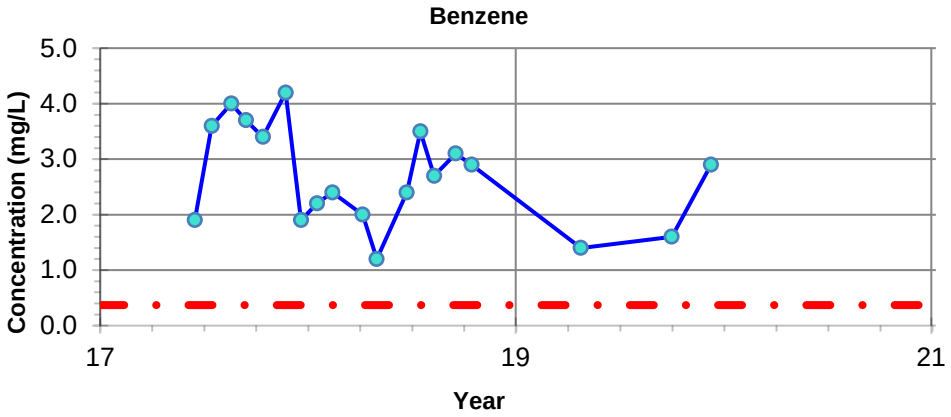

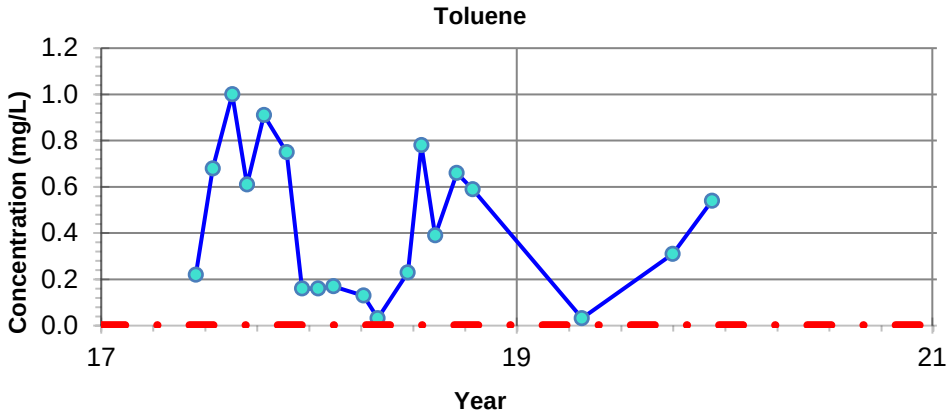

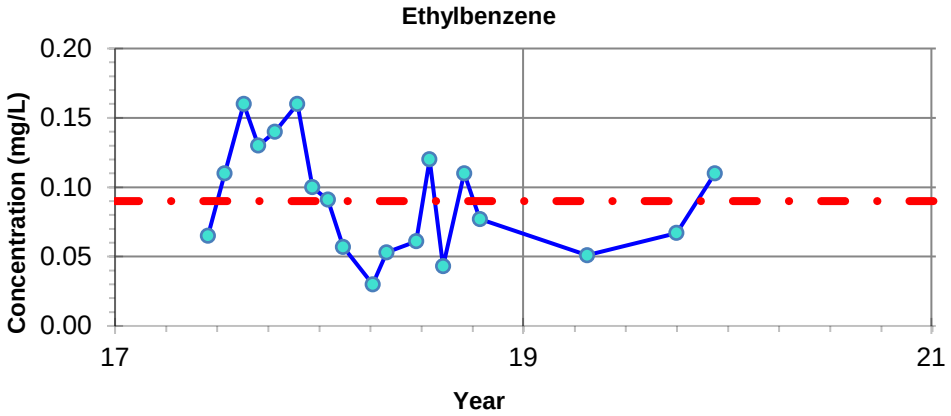

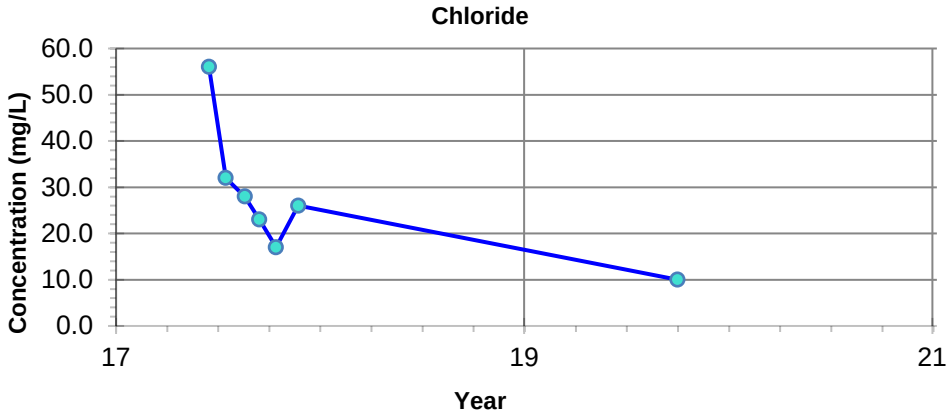

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GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-MW17-03

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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PROJECT NUMBER:
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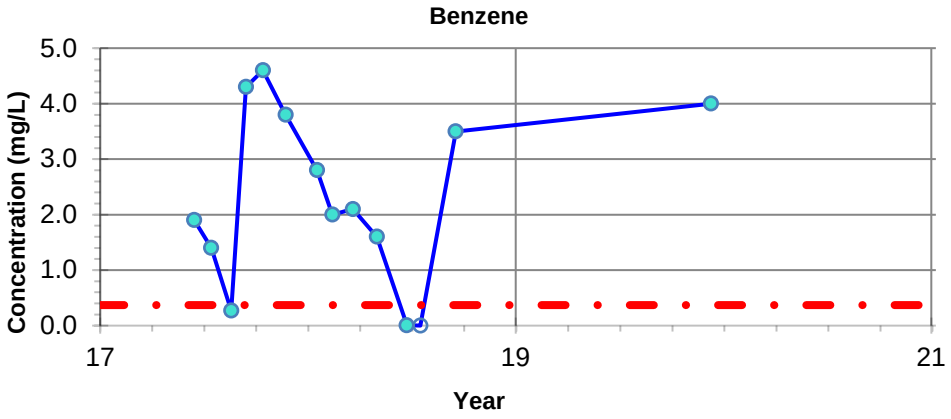

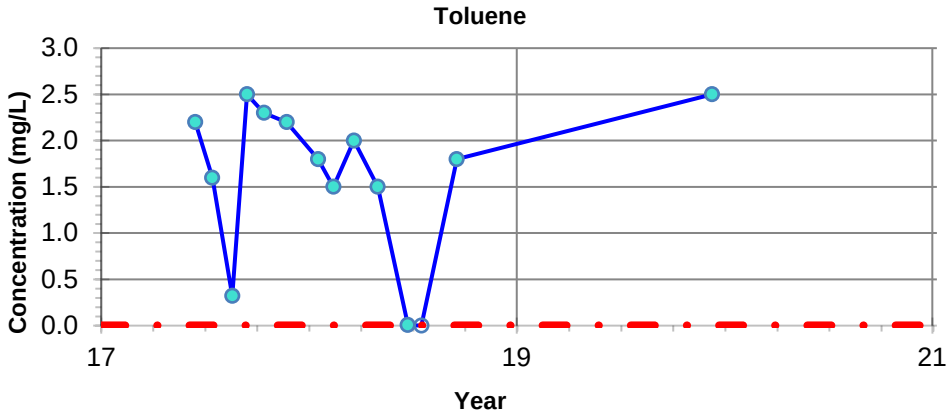

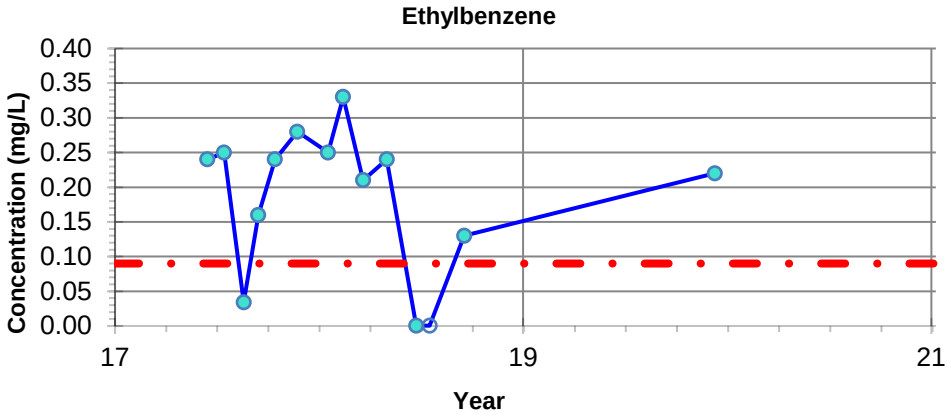

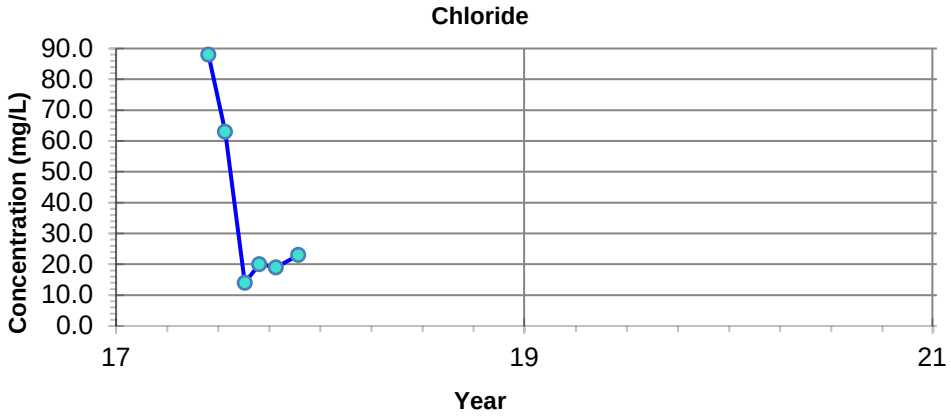

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-MW17-04

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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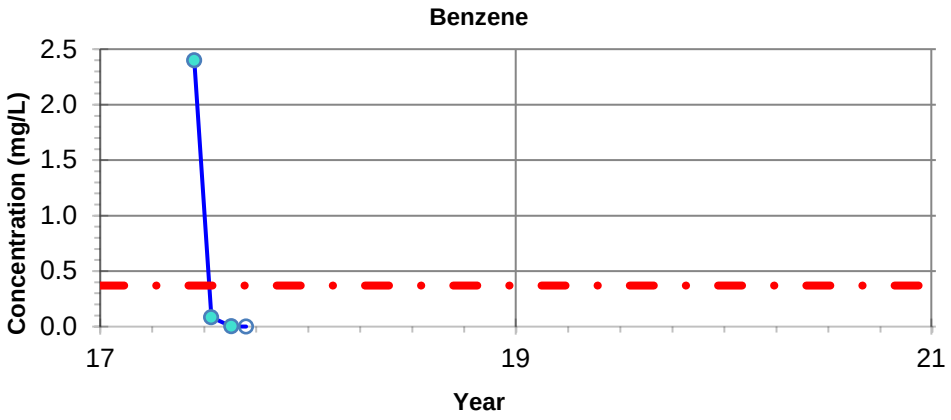

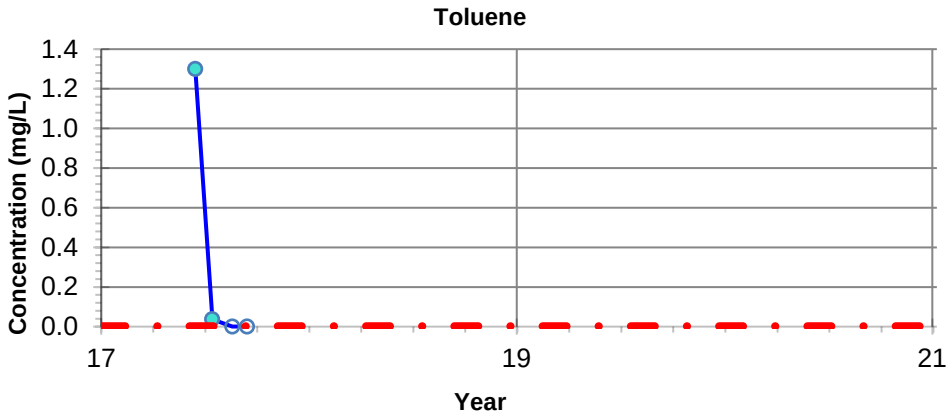

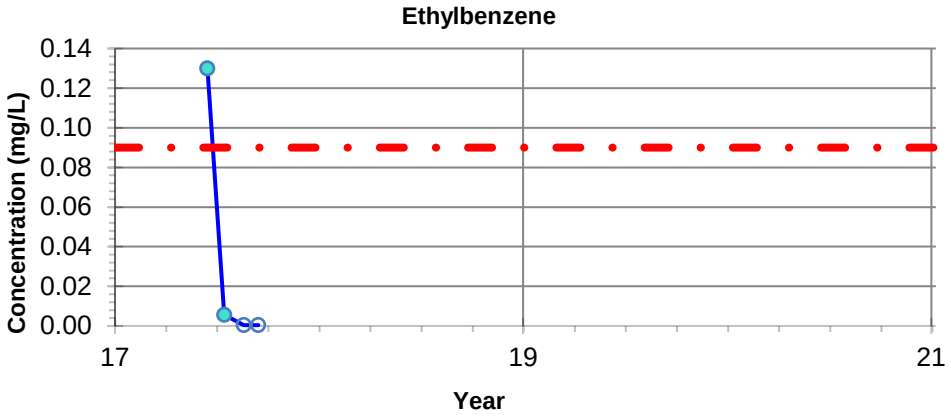

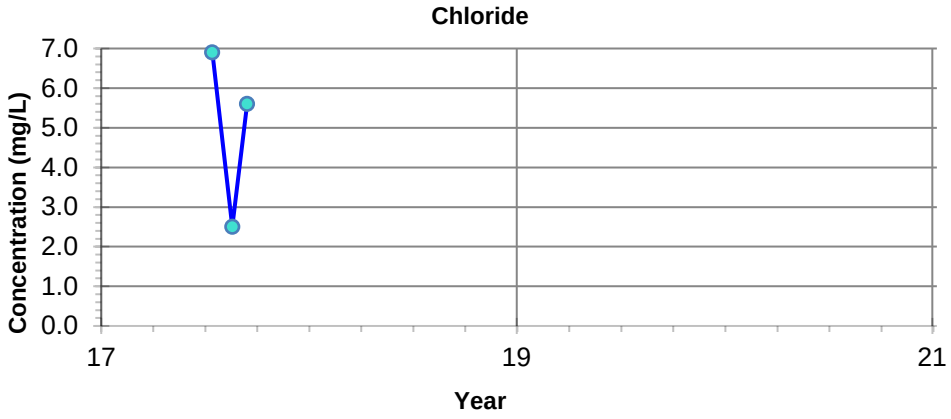

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-MW17-05

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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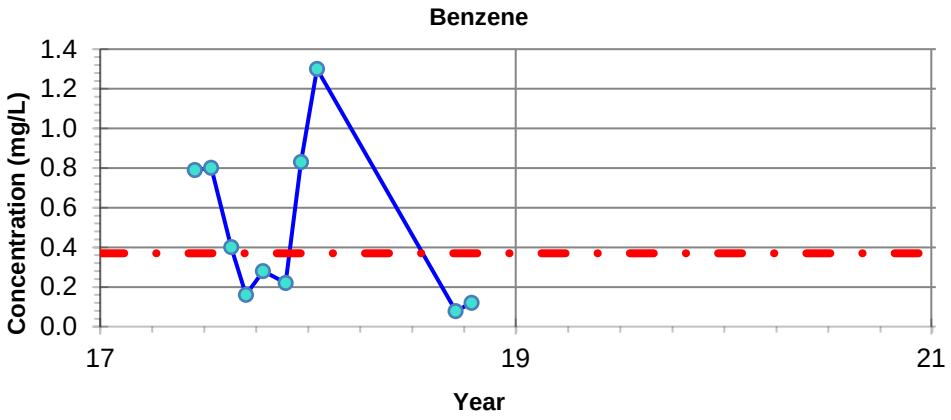

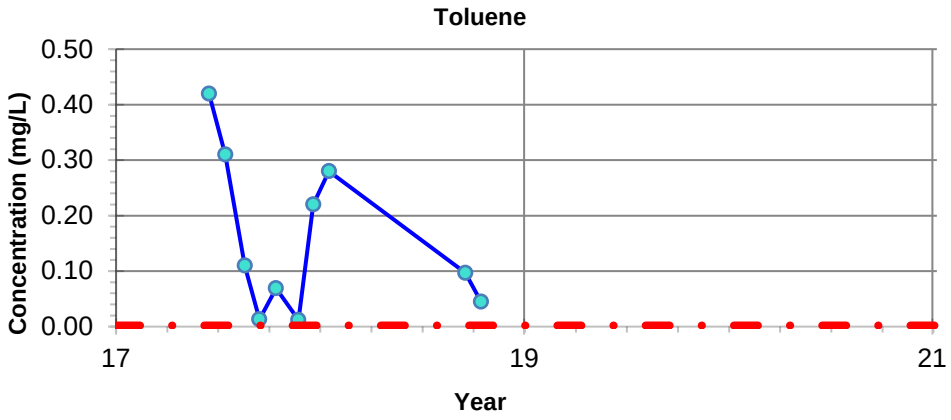

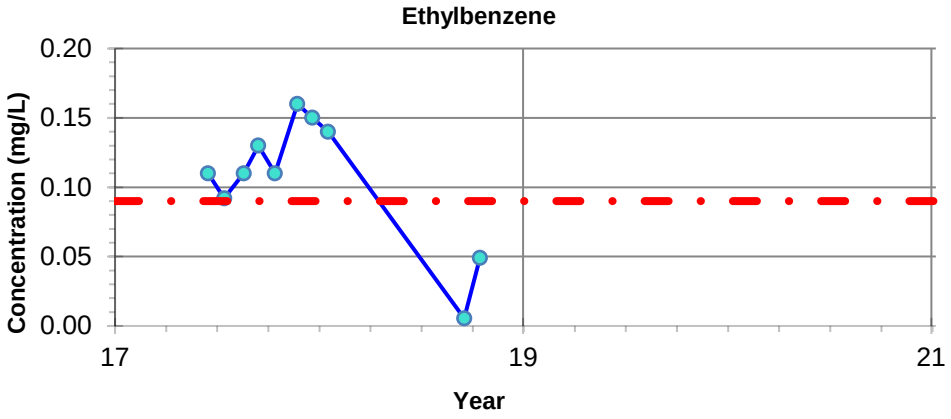

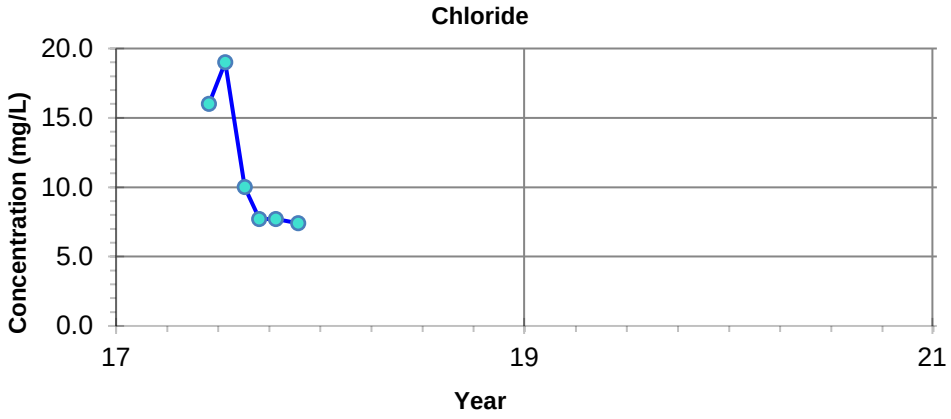

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-MW17-06

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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PROJECT NUMBER:
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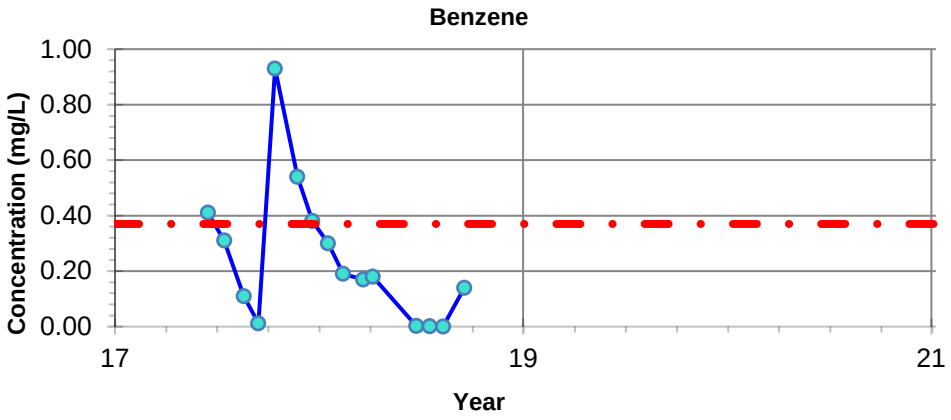

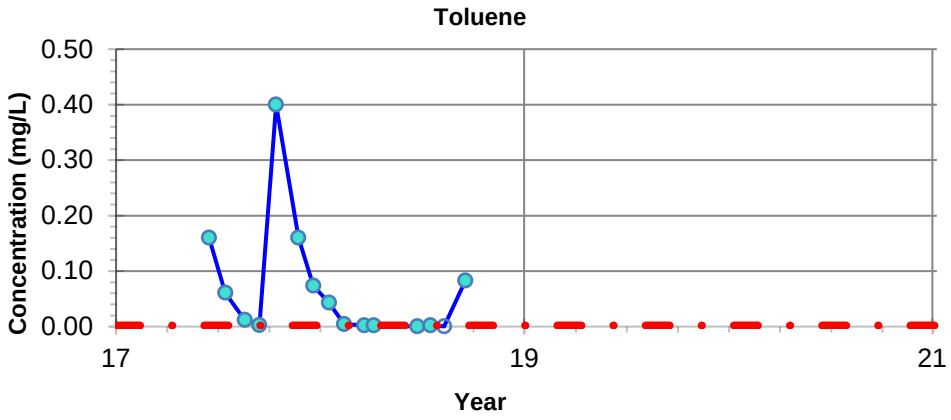

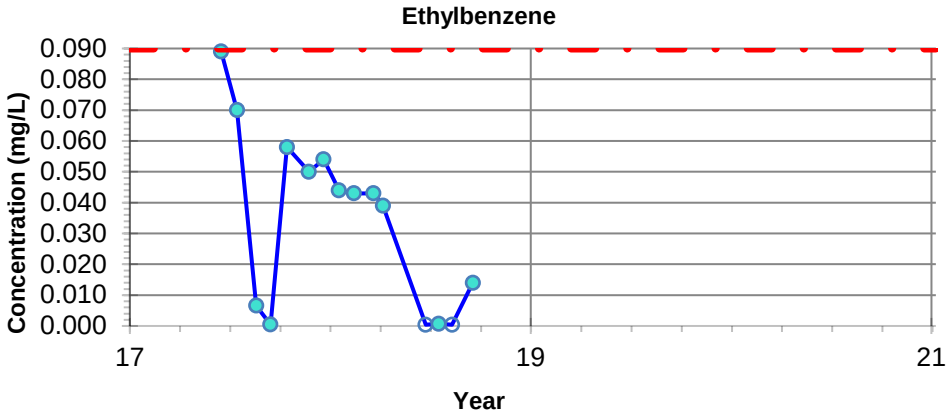

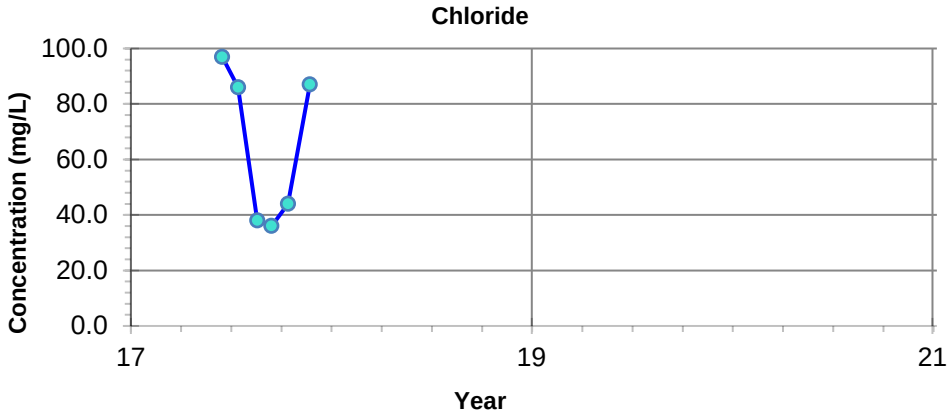

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– · – **GUIDELINE:**
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Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-MW17-07

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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417011-00096

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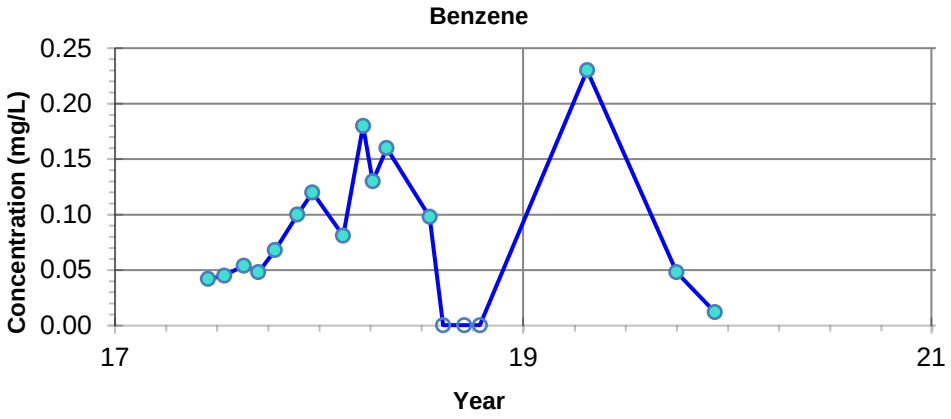

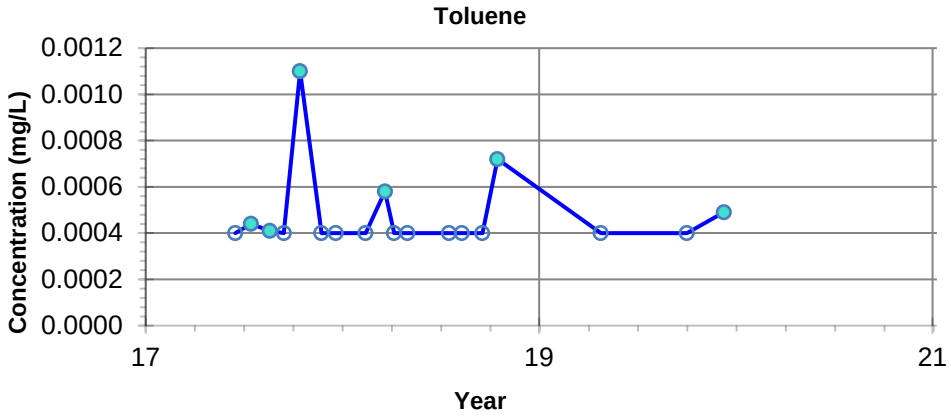

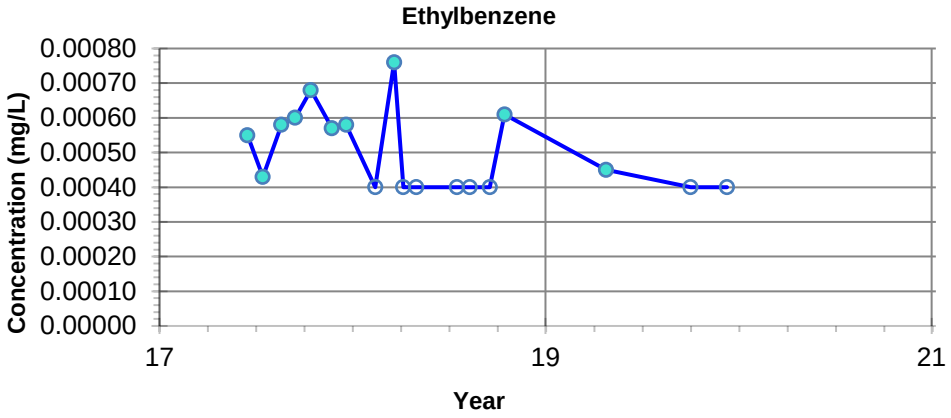

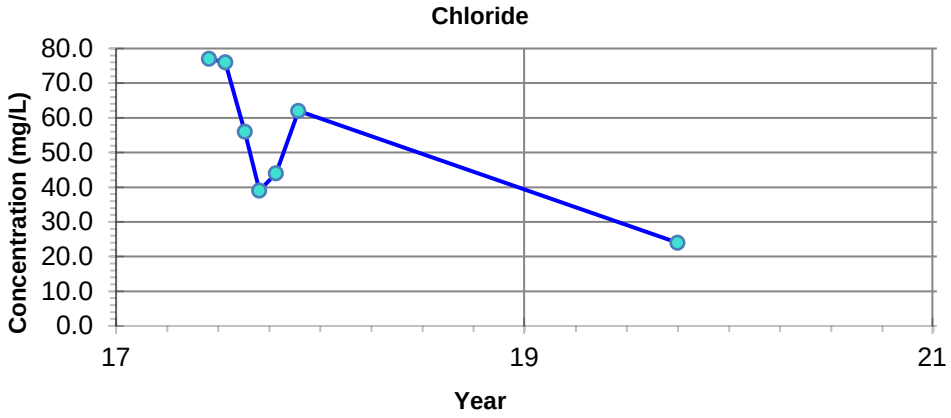

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-MW17-08

24-Mar-2020 date	NA edited by	JC drawn by	NA app by

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PROJECT NUMBER:
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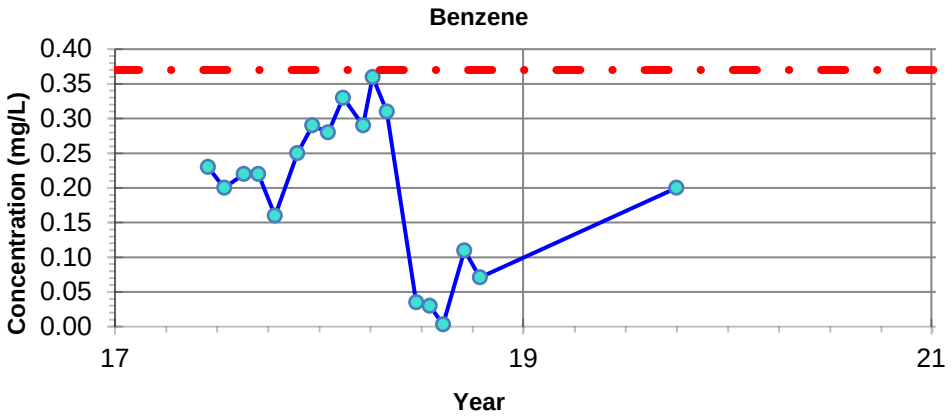

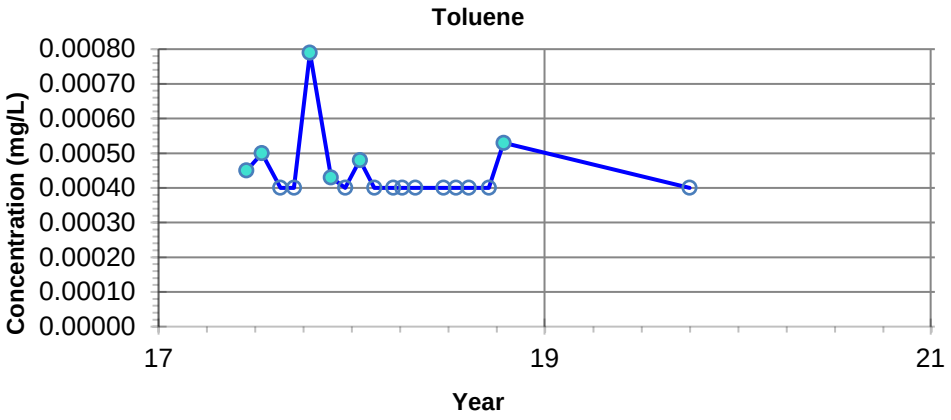

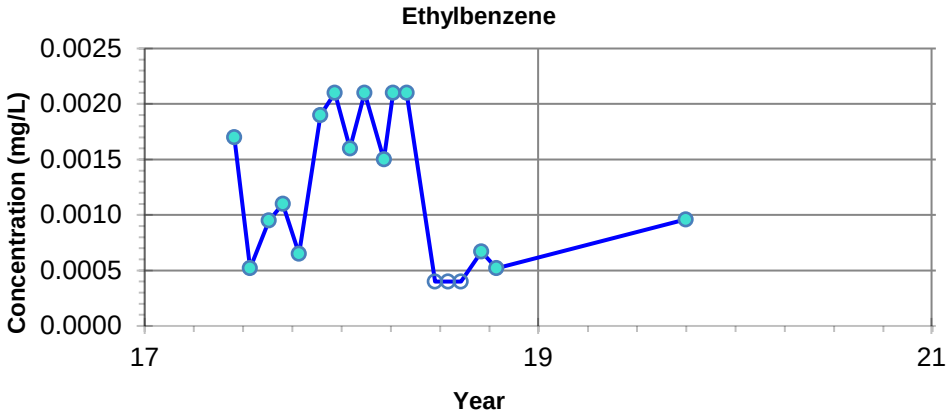

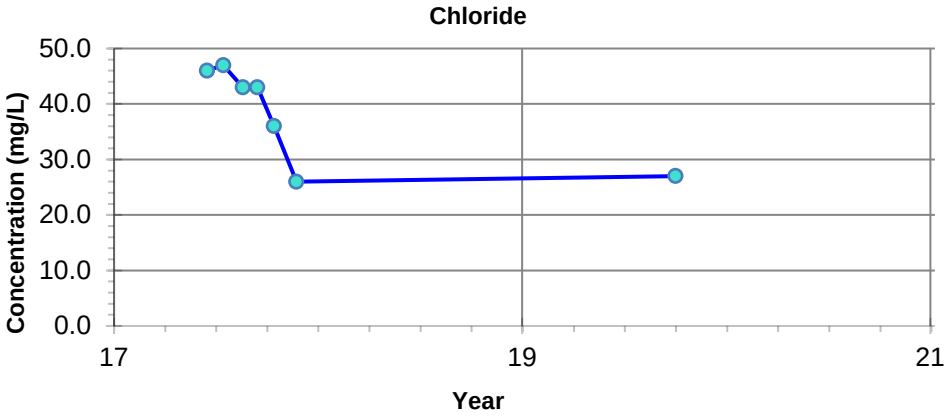

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-MW17-09

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

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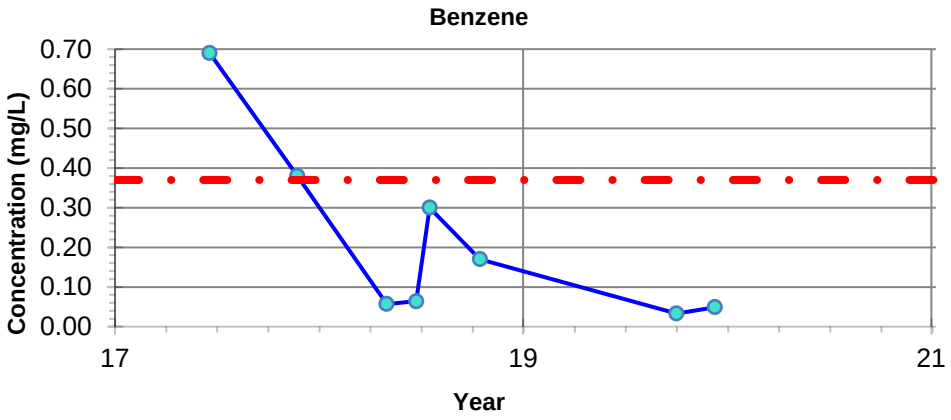

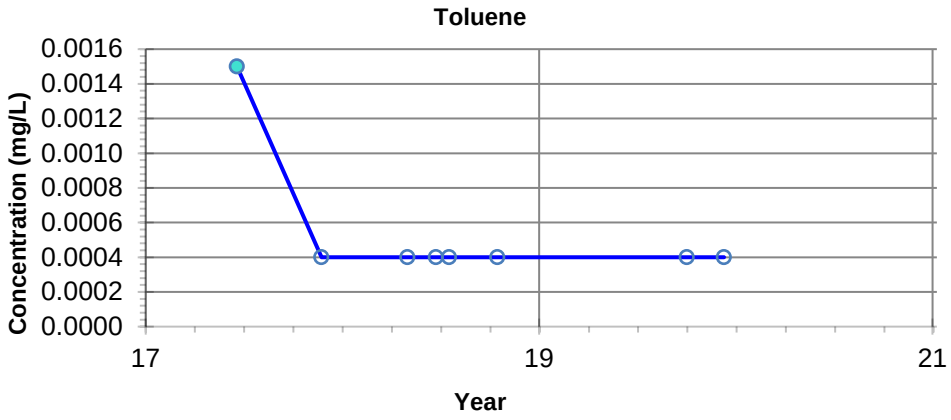

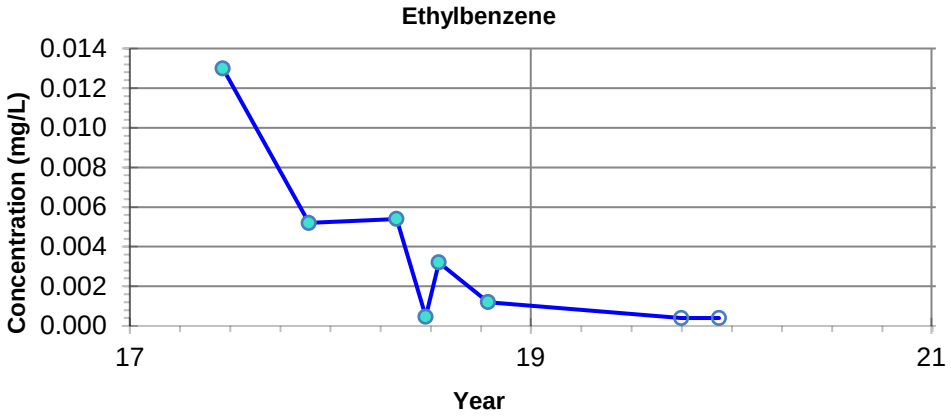

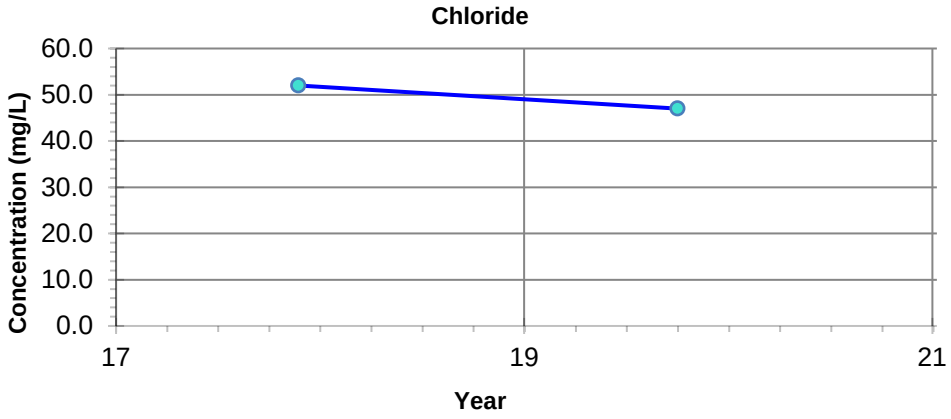

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-MW17-10

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

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PROJECT NUMBER:
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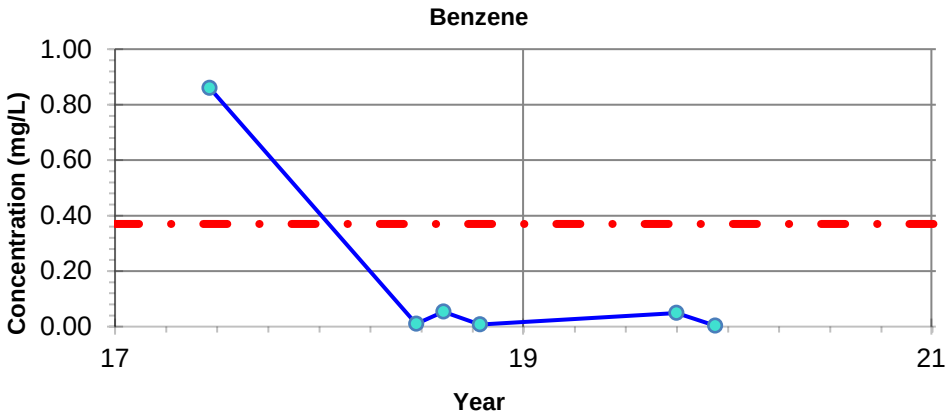

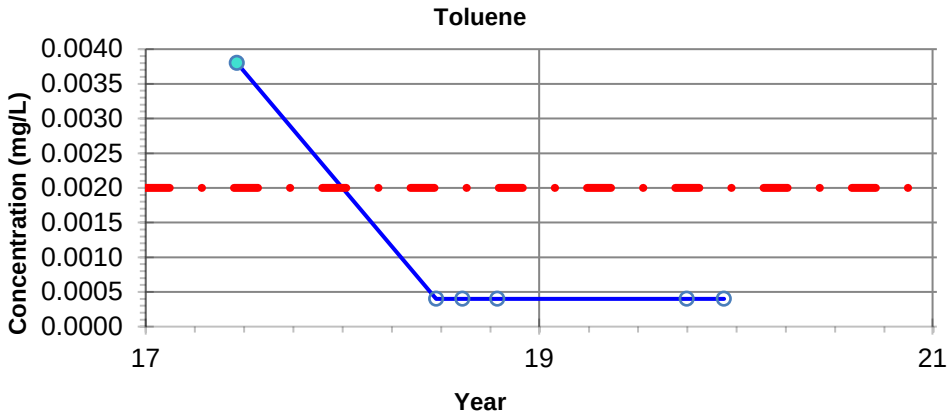

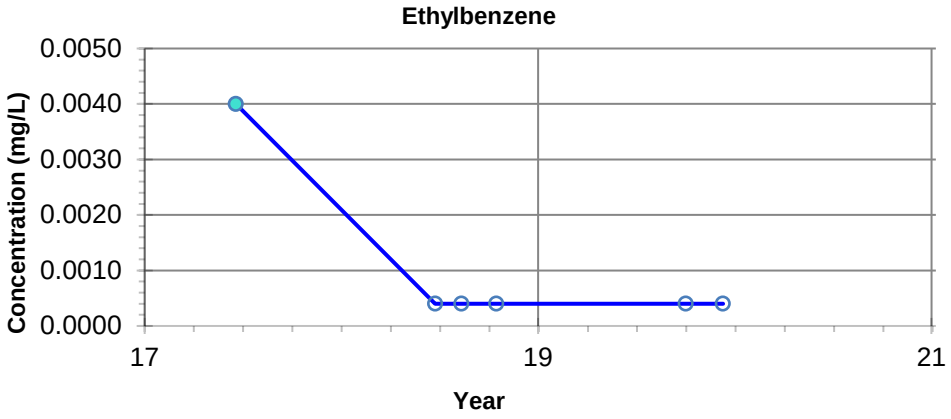

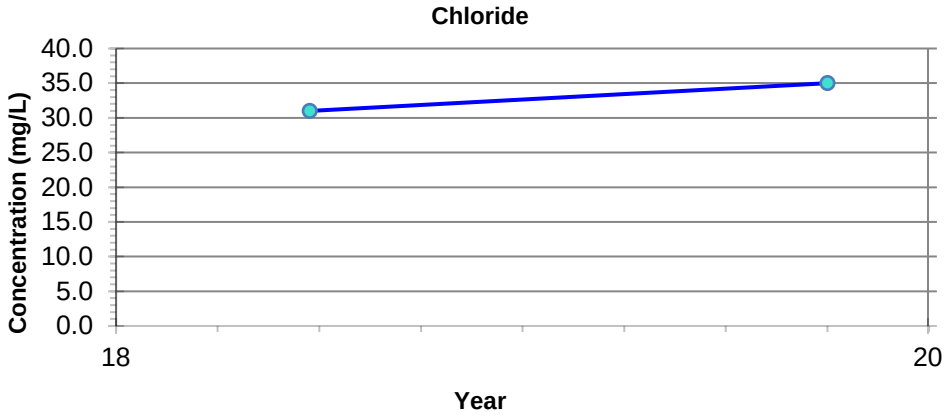

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: RB-MW17-11

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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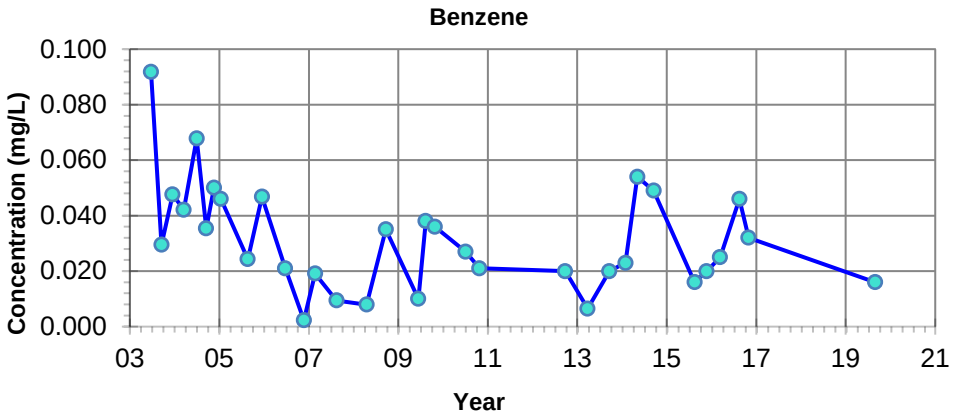

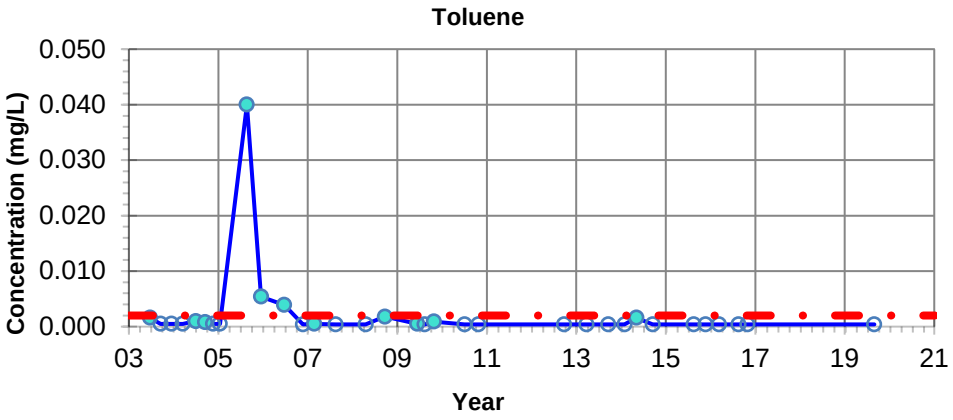

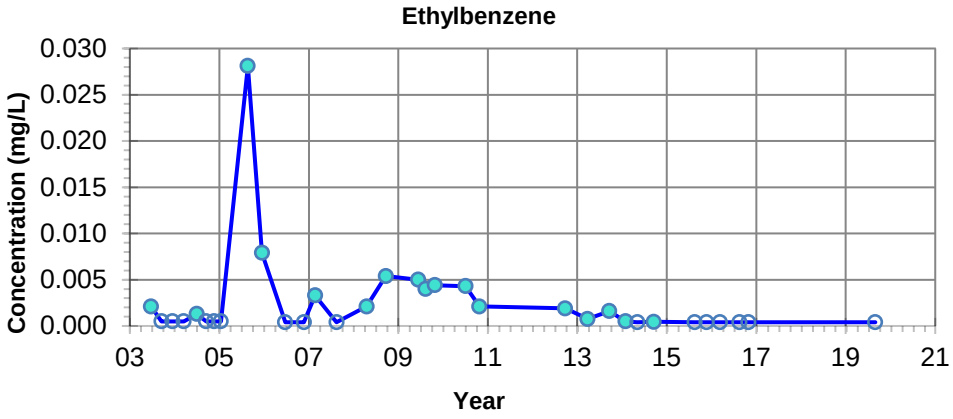

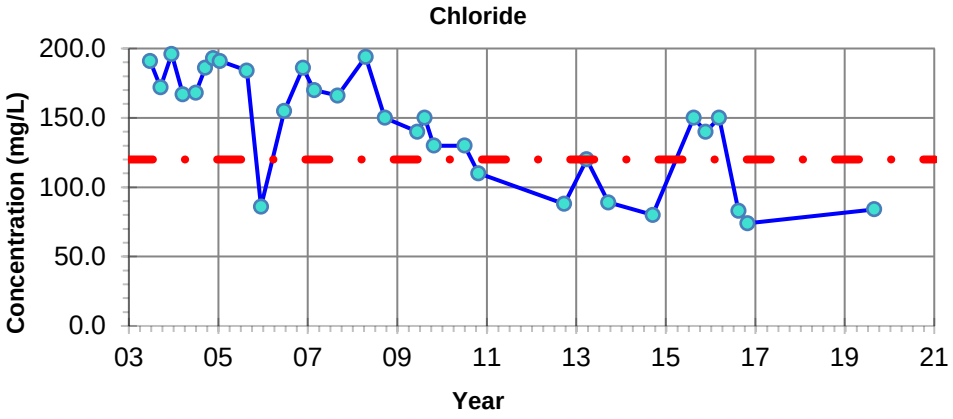

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GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: P100

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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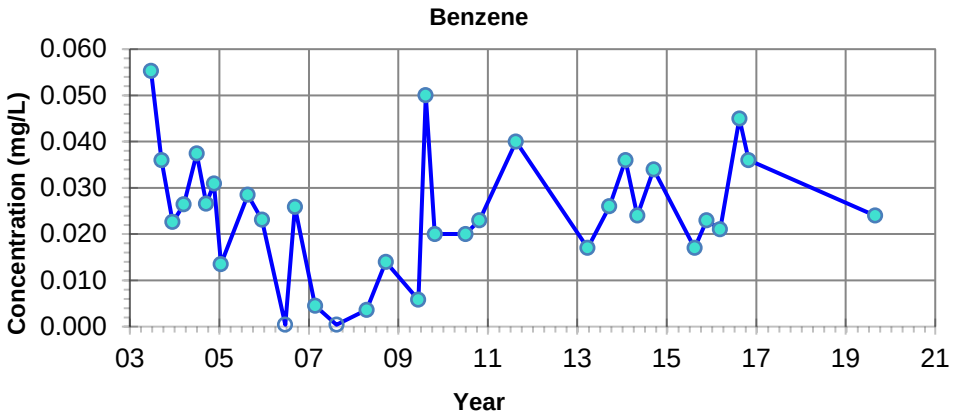

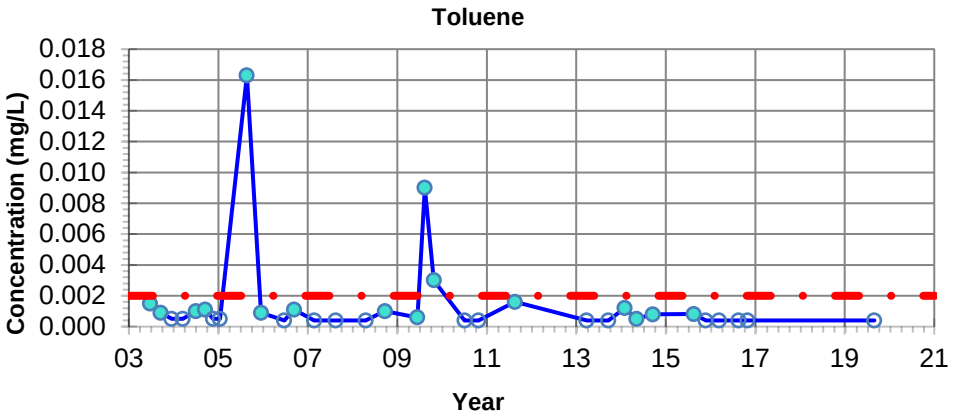

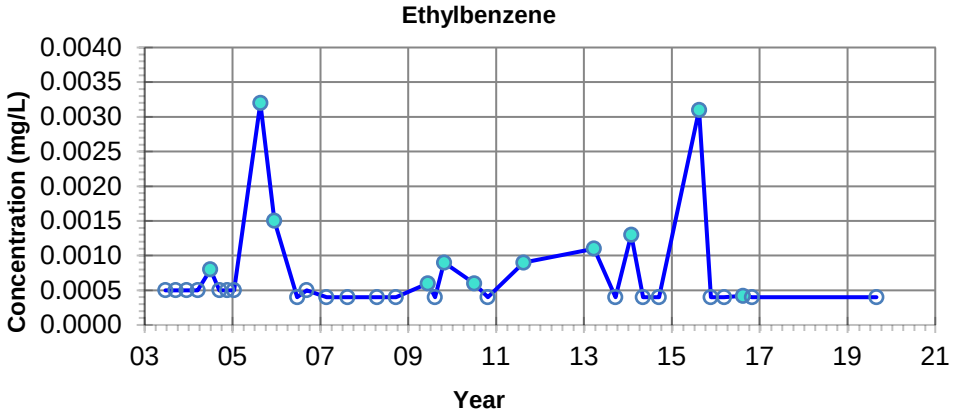

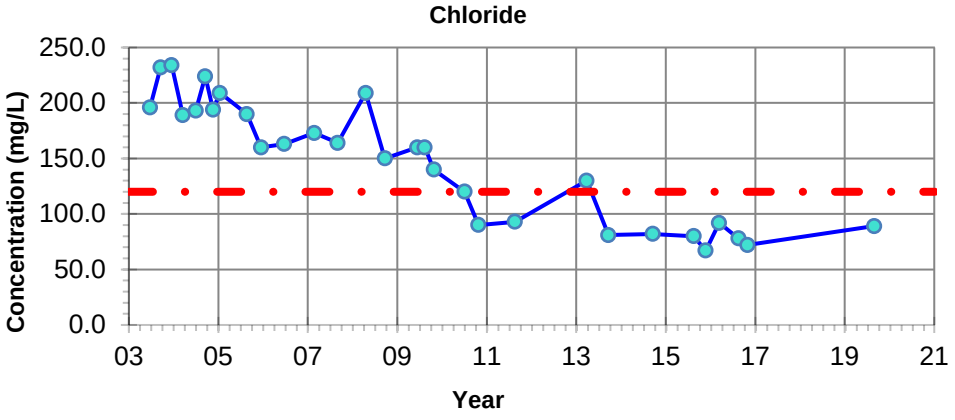

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: P200

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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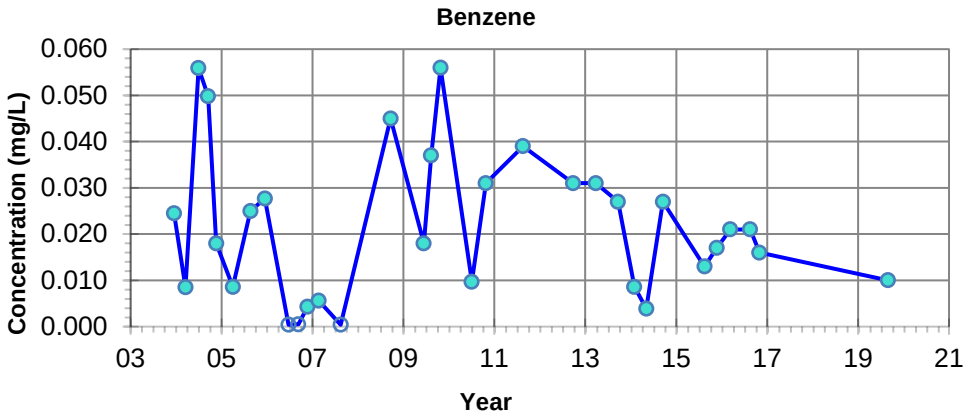

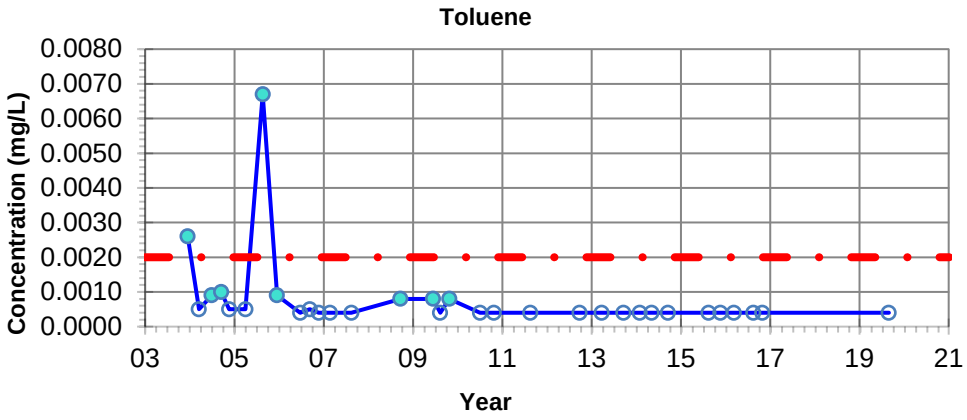

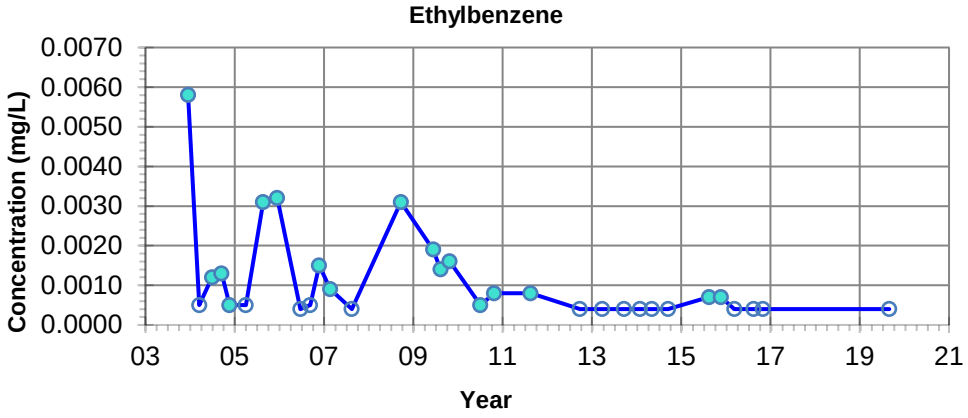

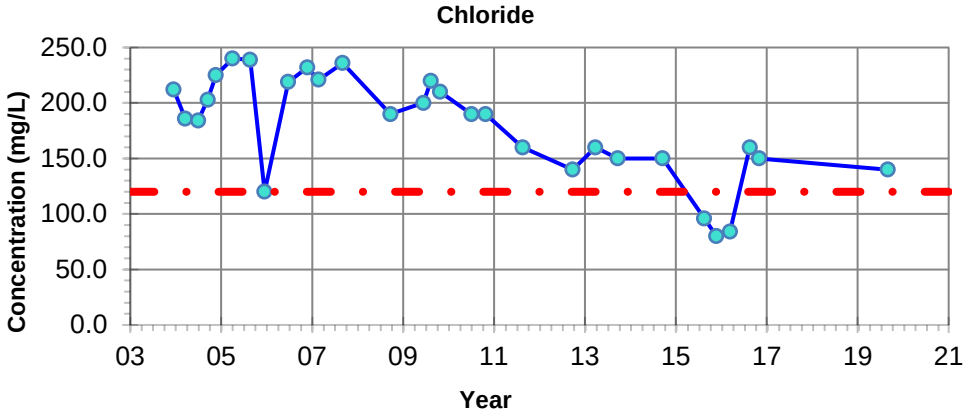

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GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: P700

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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PROJECT NUMBER:
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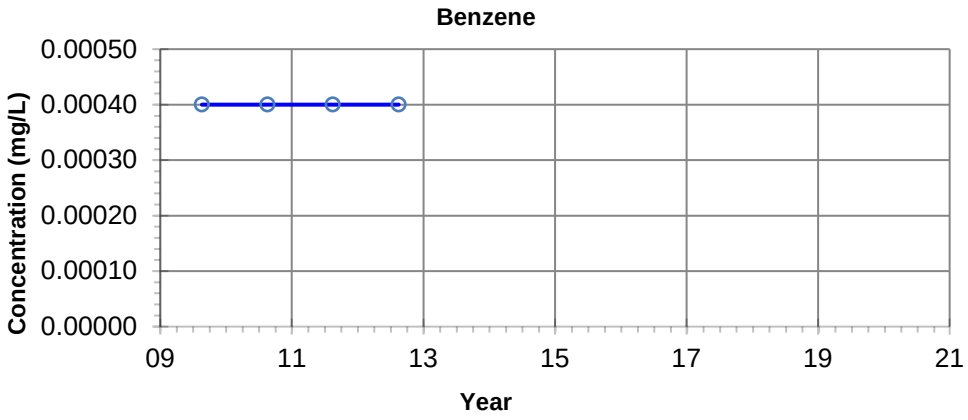

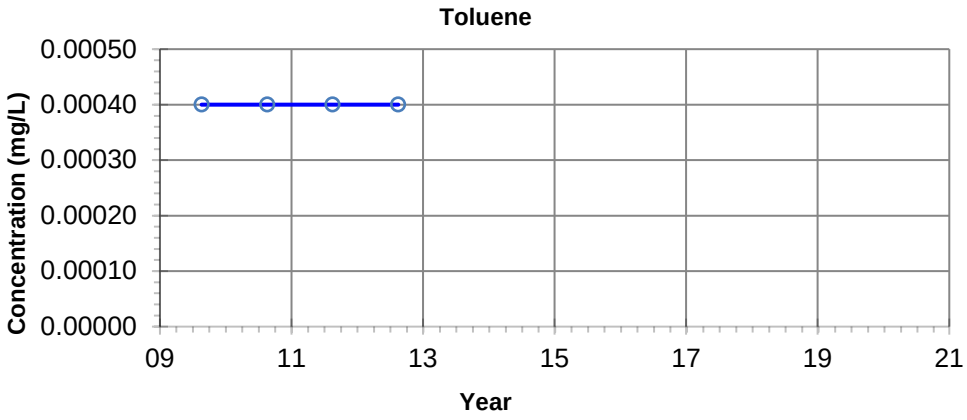

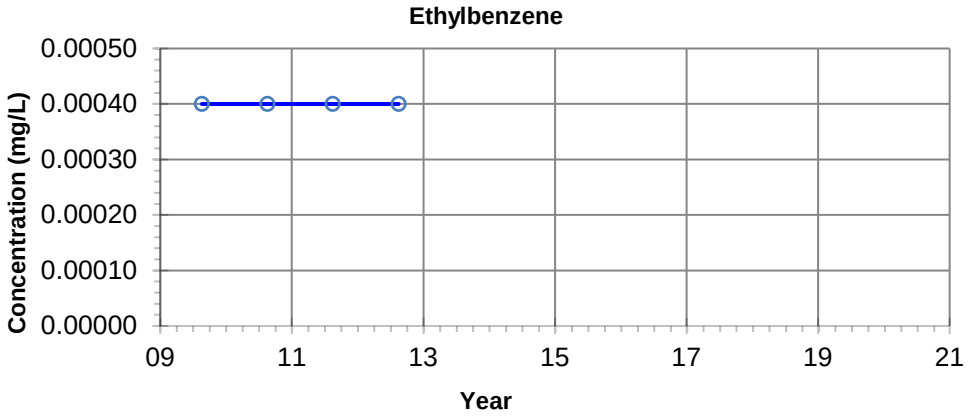

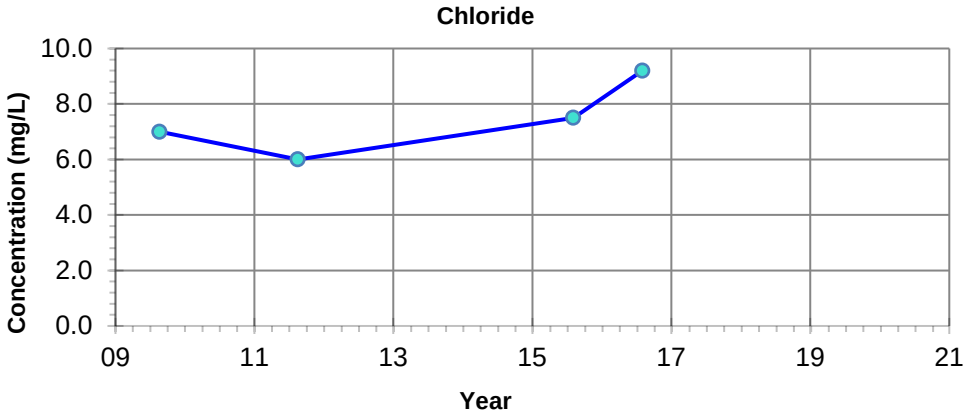

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GUIDELINE:
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Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: WBIO 08-1-2

17-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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PROJECT NUMBER:
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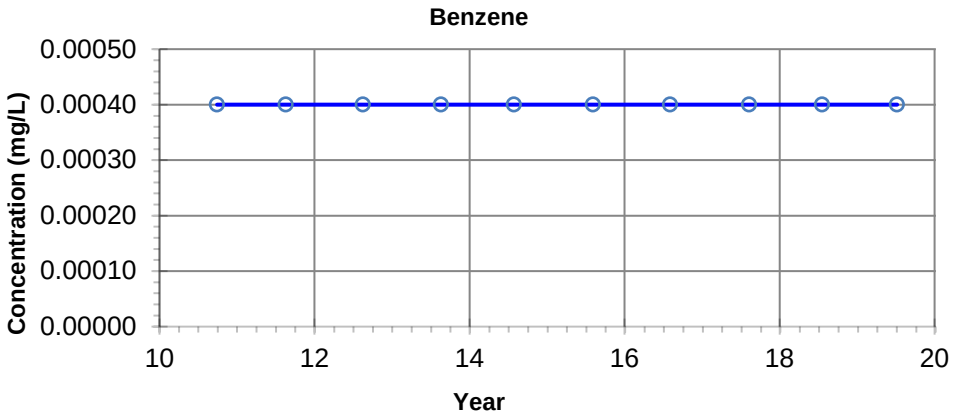

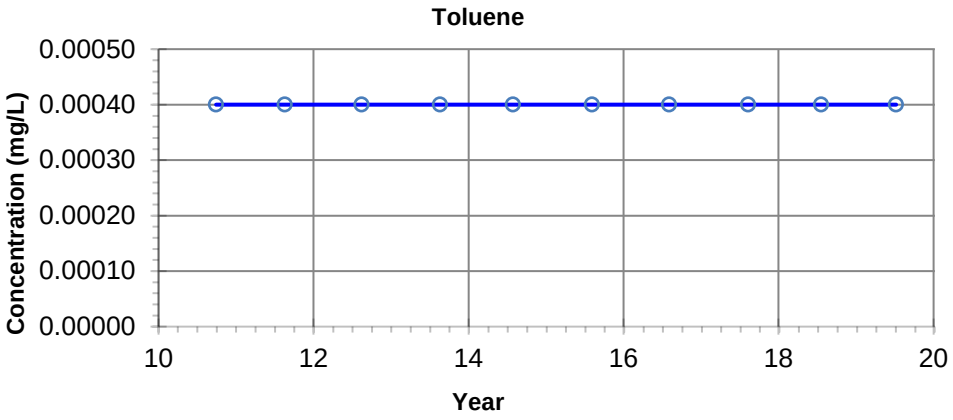

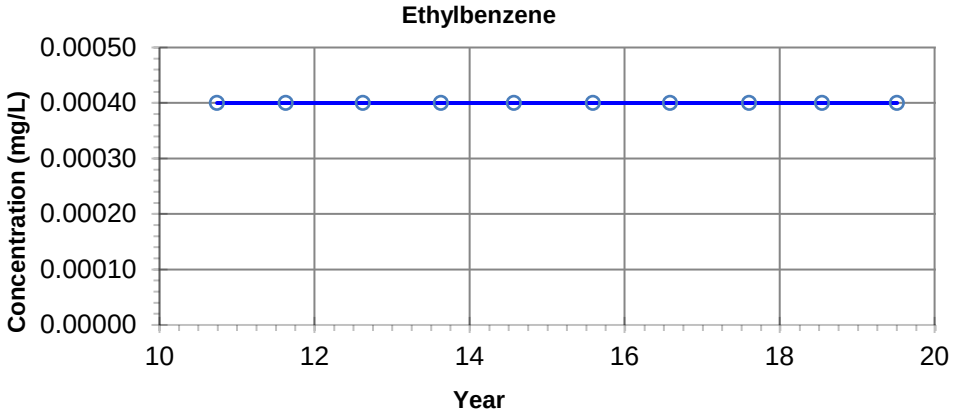

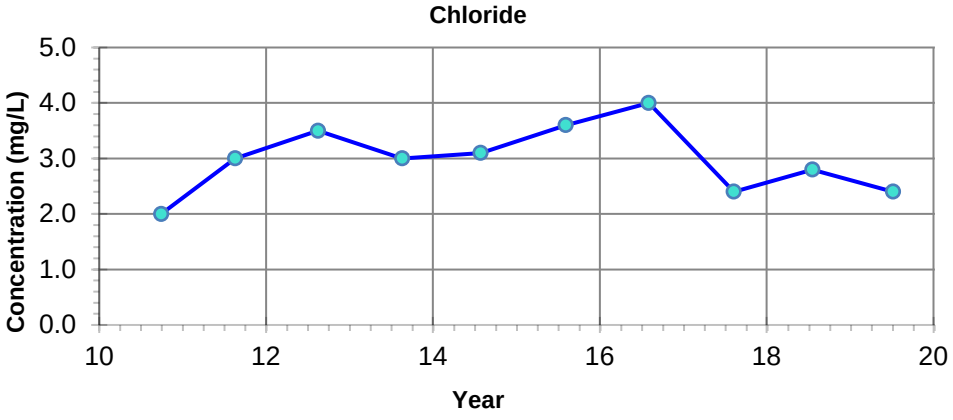

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Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MCBG-10-1-3

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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PROJECT NUMBER:
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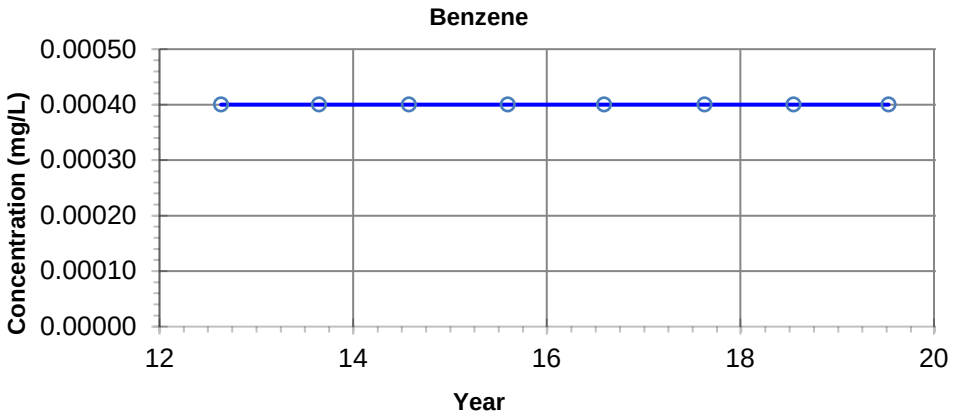

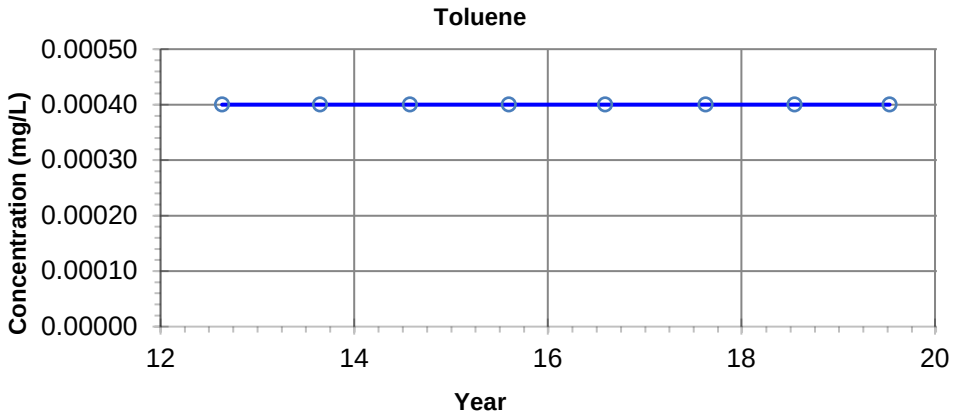

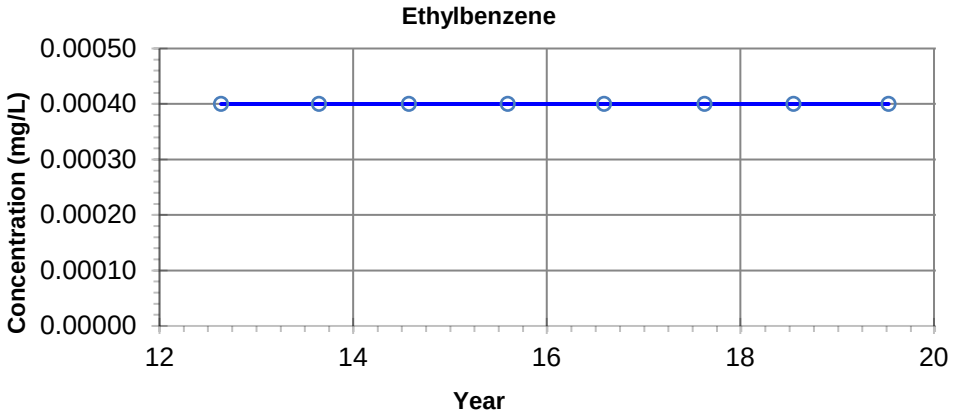

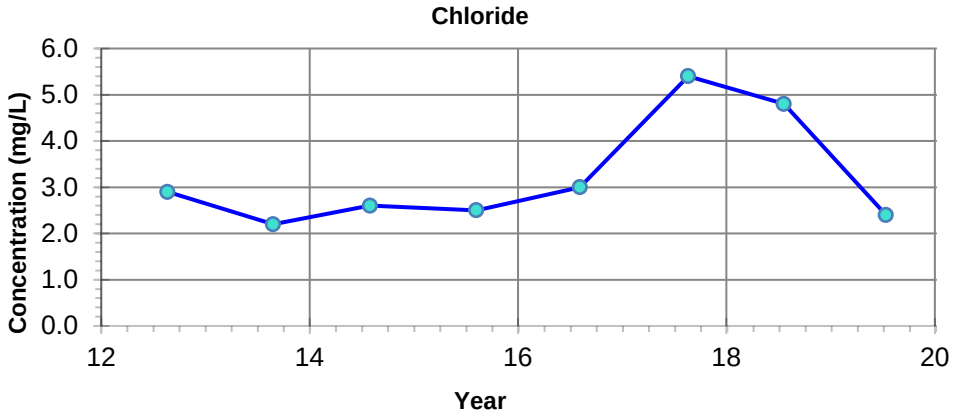

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CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MCBG-12-1-2

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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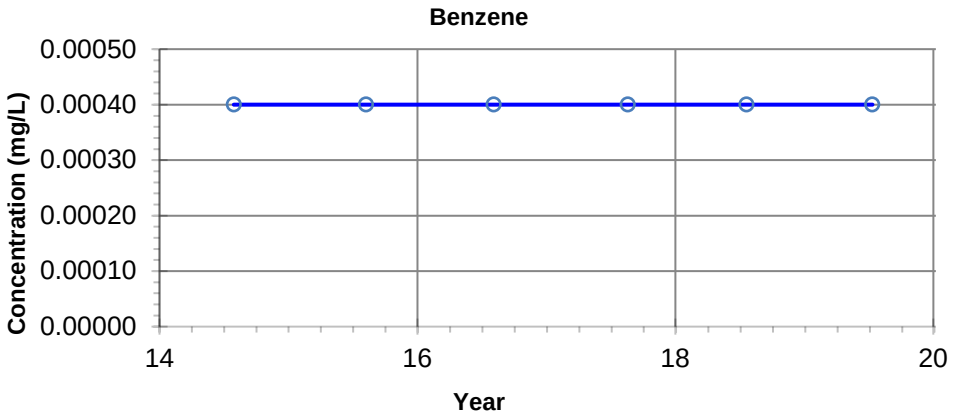

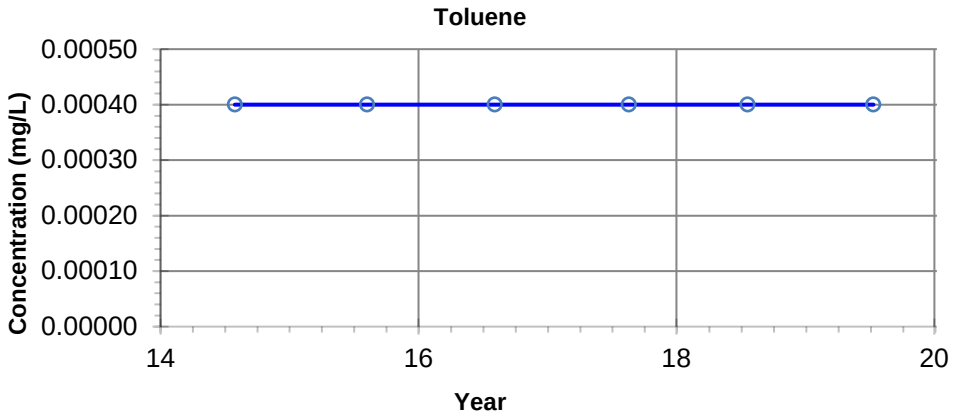

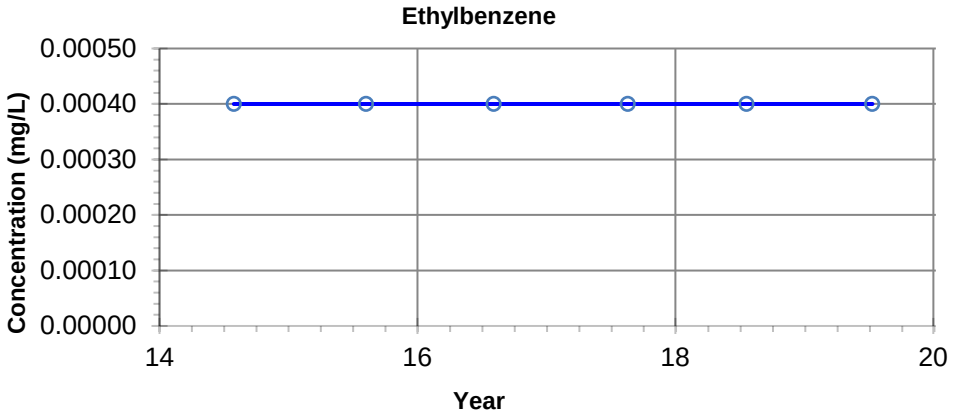

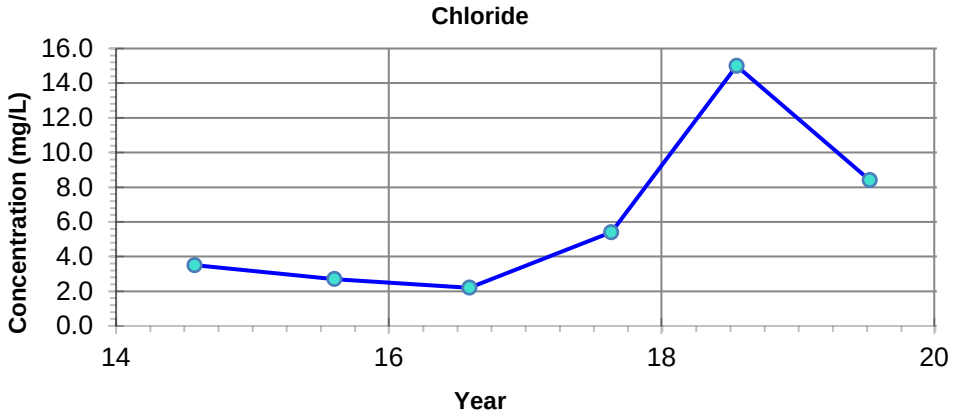

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CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MEBG-12-2-3

27-Mar-2020 date	NA edited by	JC drawn by	NA app by

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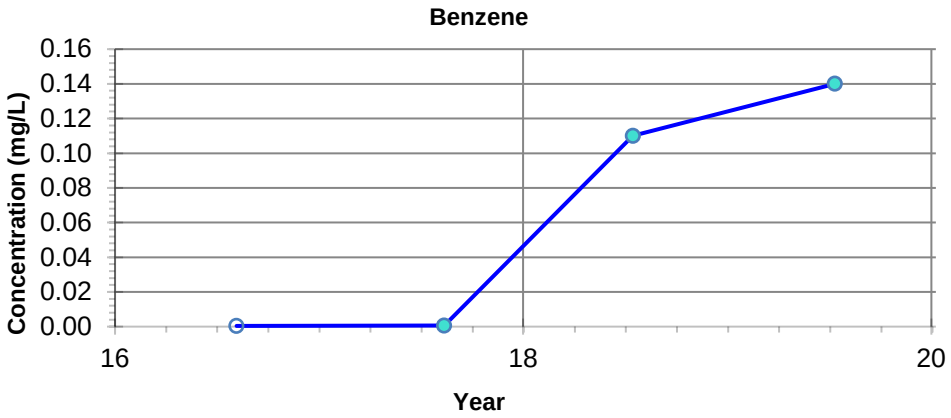

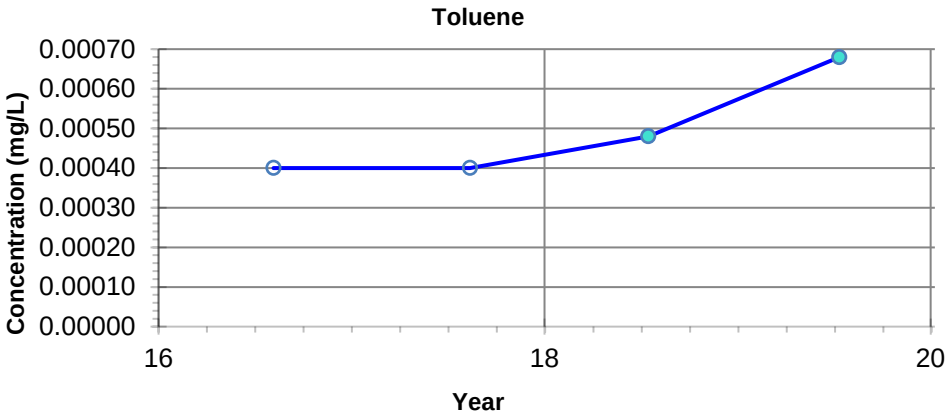

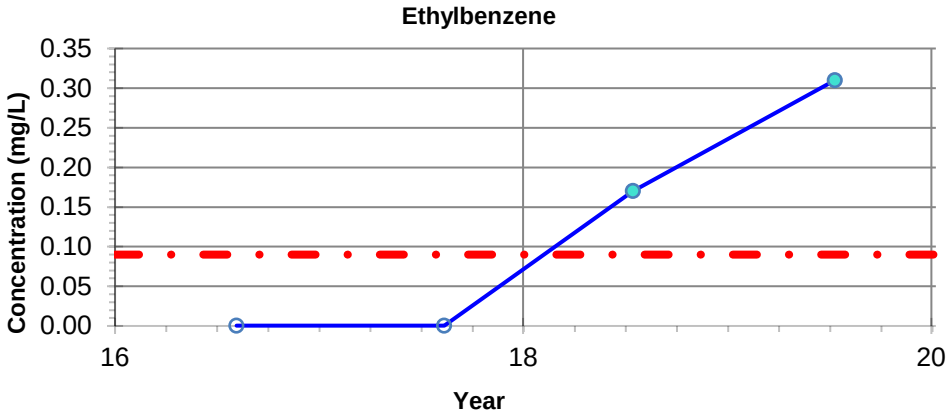

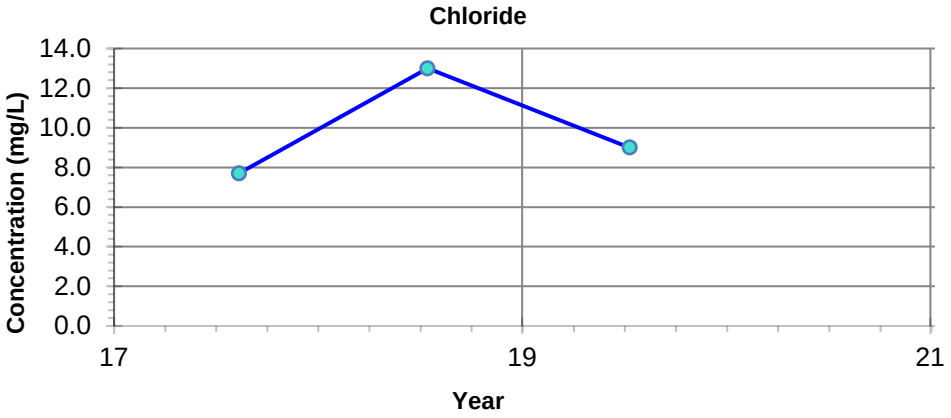

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CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MEBG-15-4-3

27-Mar-2020 date	NA edited by	JC drawn by	NA app by

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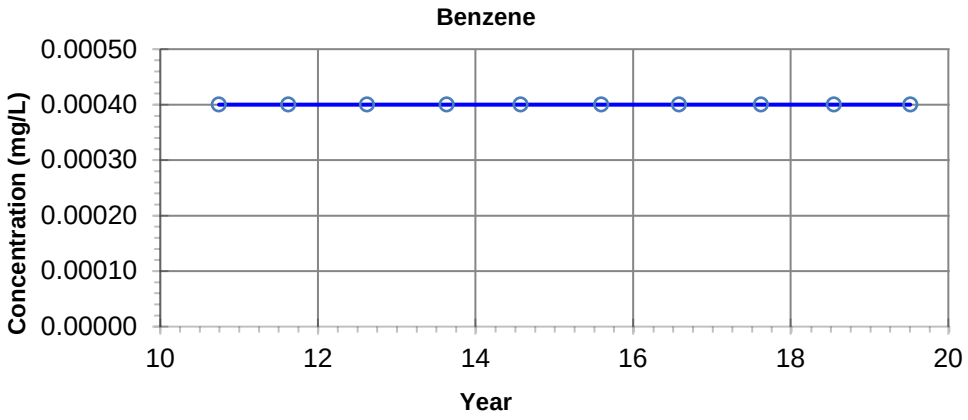

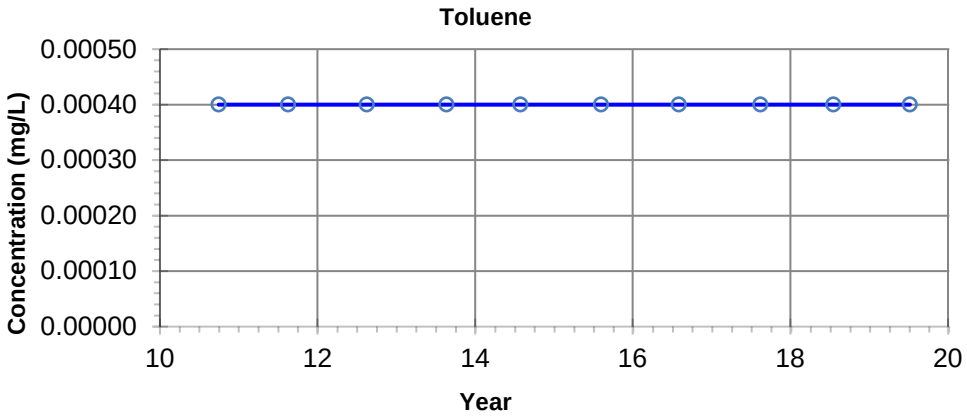

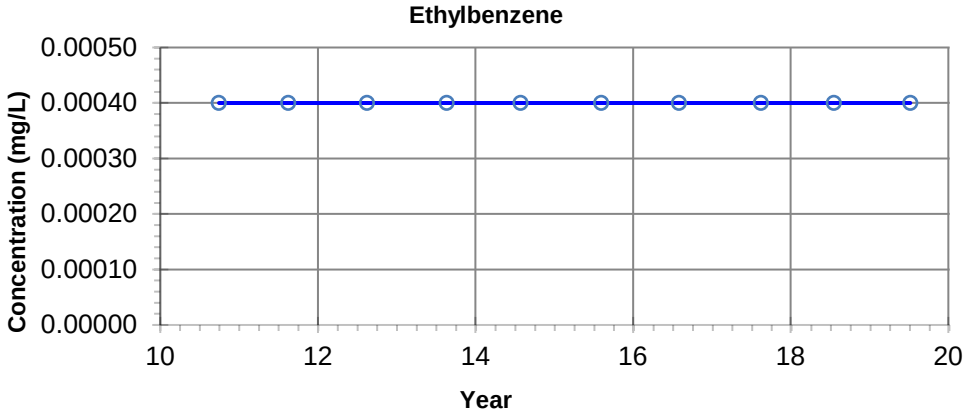

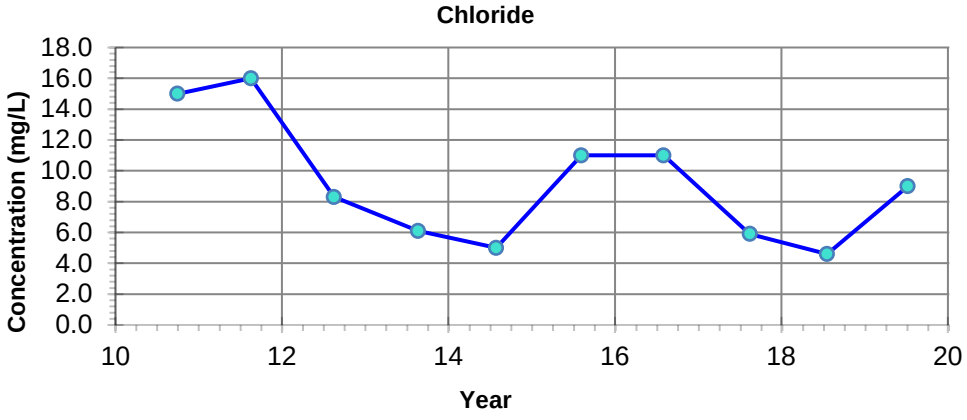

NOTES:
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GUIDELINE:
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MWBG-10-1-3

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

PROJECT NUMBER:
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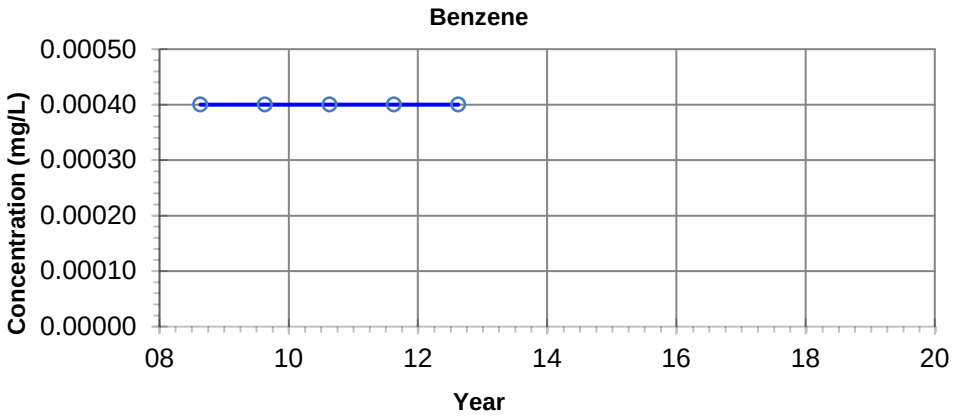

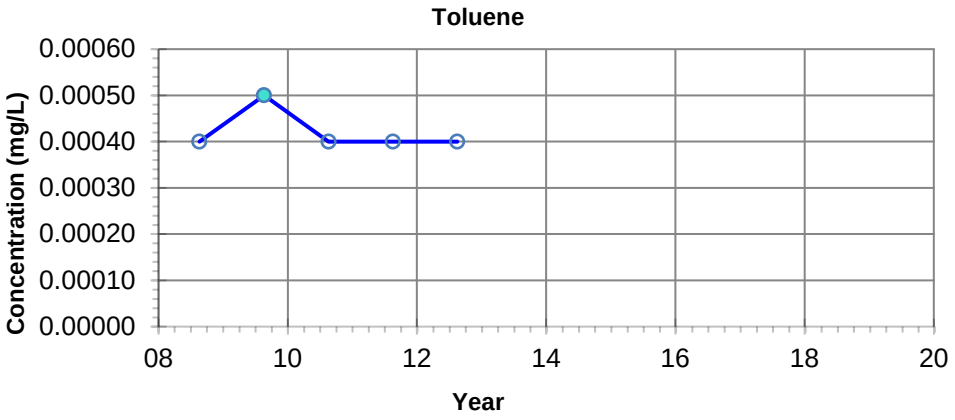

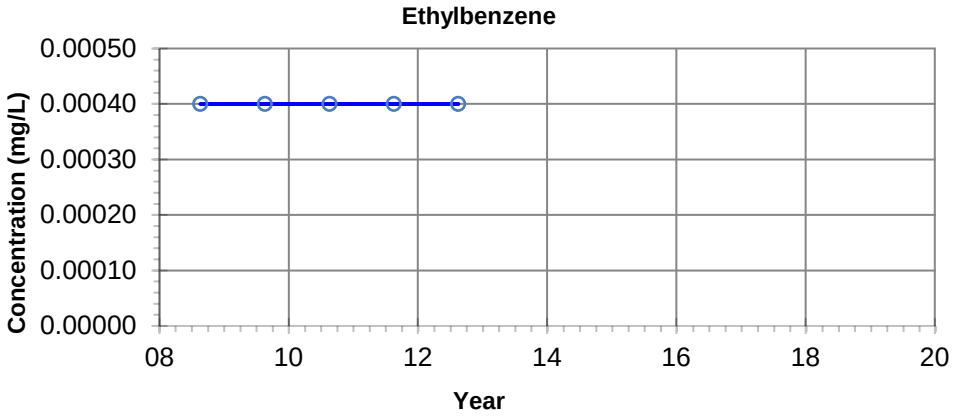

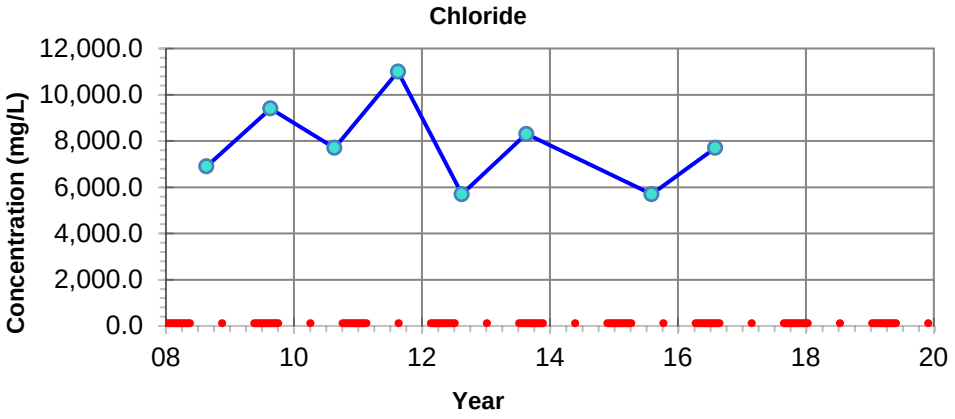

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: CEM 08-2-5

26-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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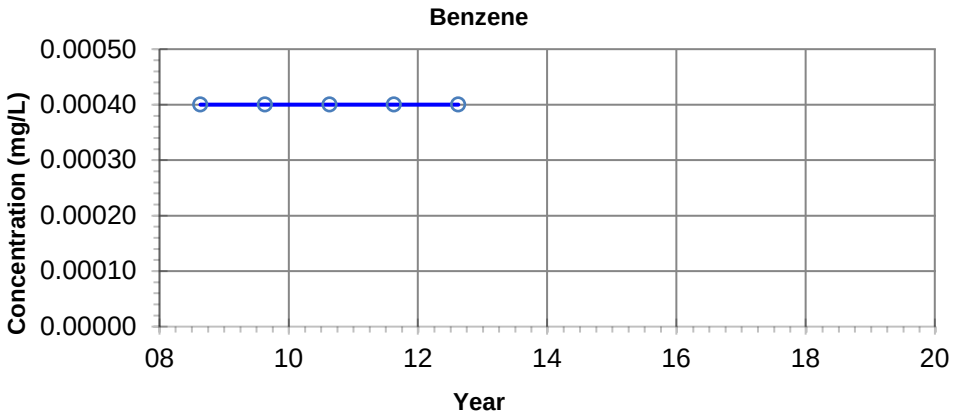

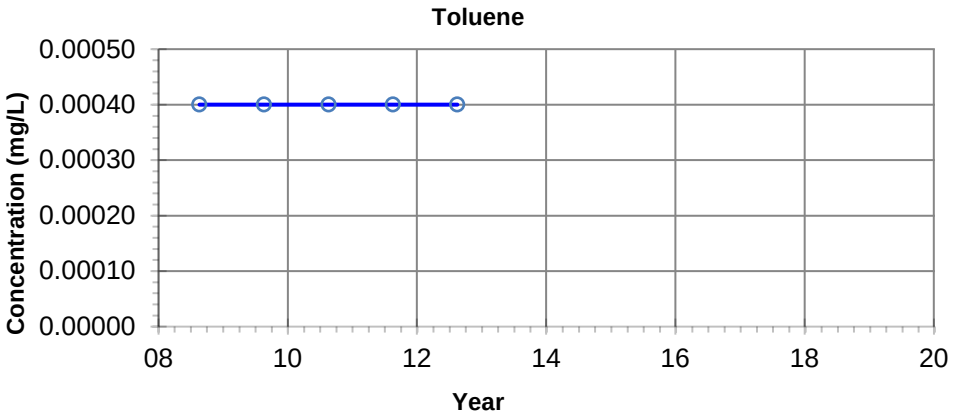

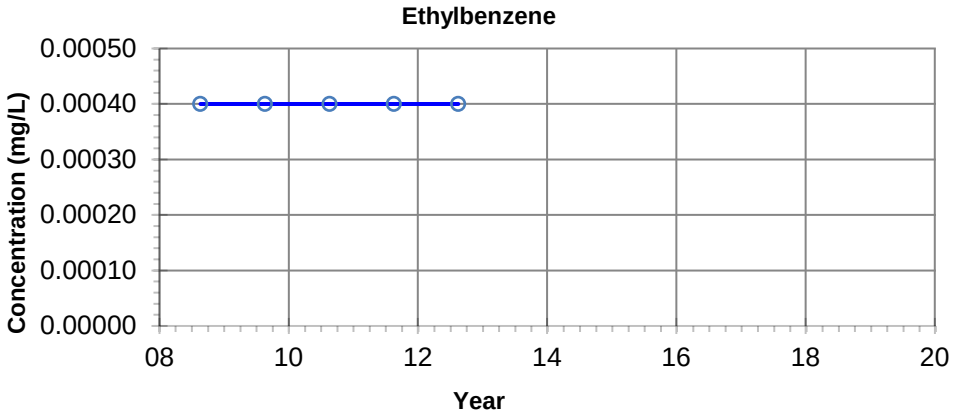

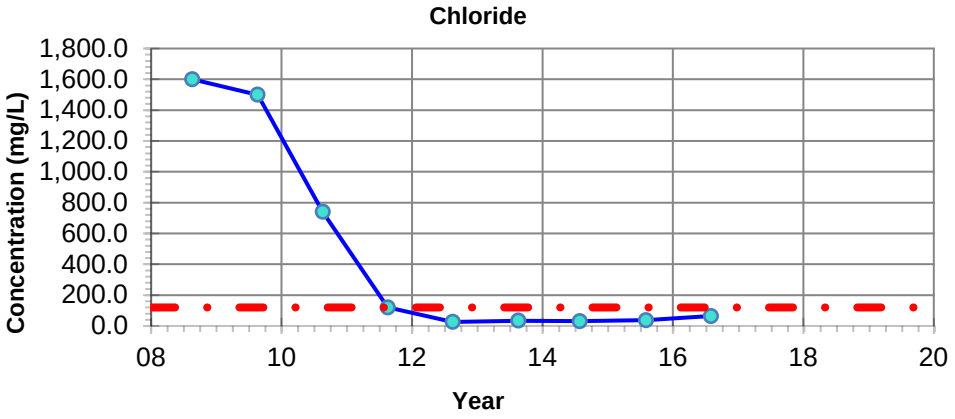

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: CEM 08-4-5

26-Mar-2020 date	NA edited by	JC drawn by	NA app by

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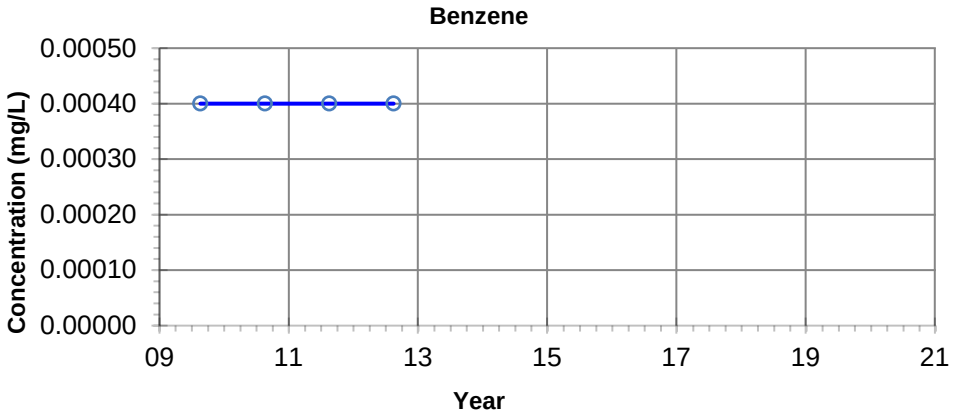

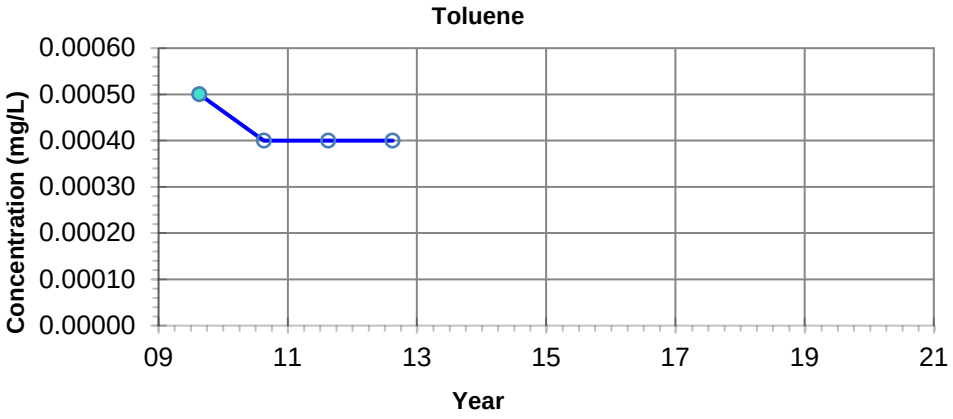

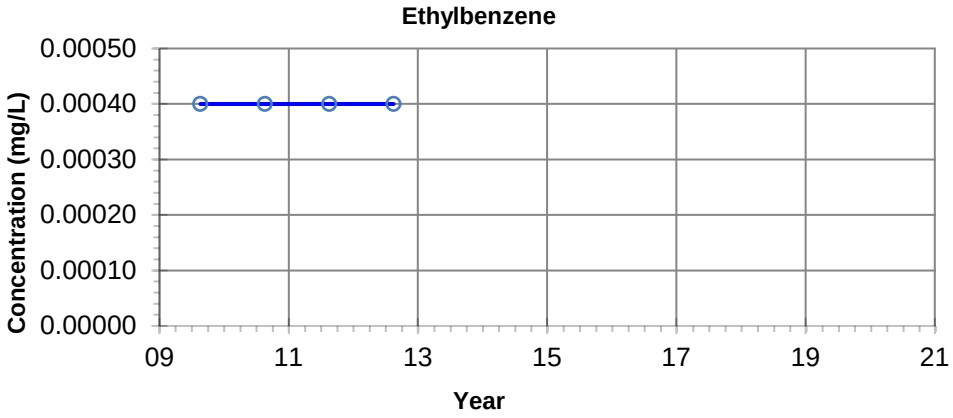

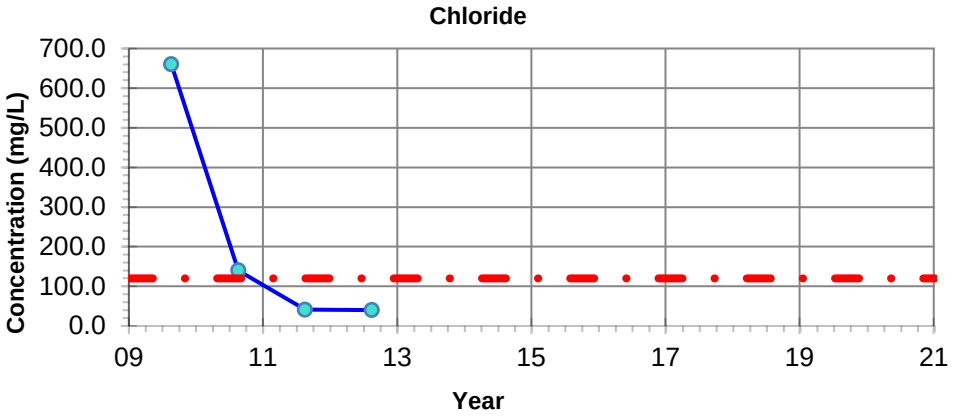

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: CEM 09-1-4

26-Mar-2020 date	NA edited by	JC drawn by	NA app by

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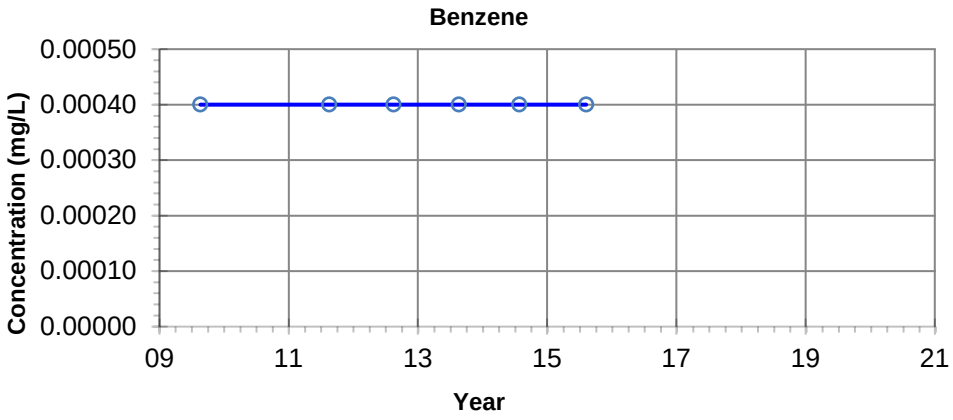

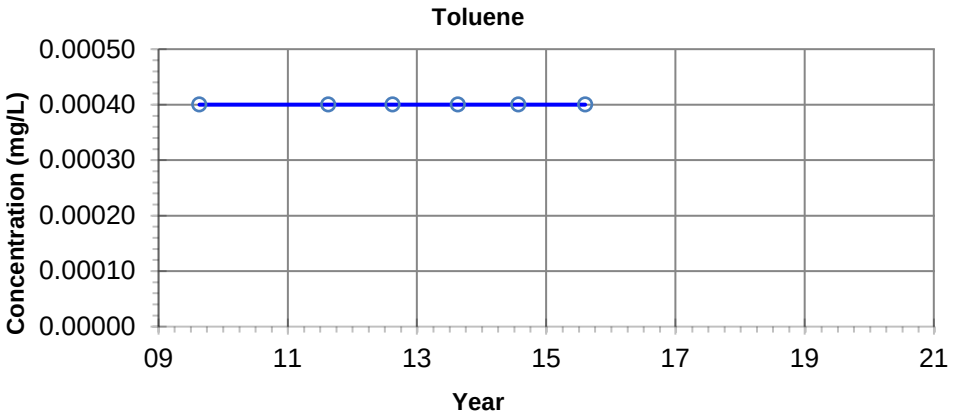

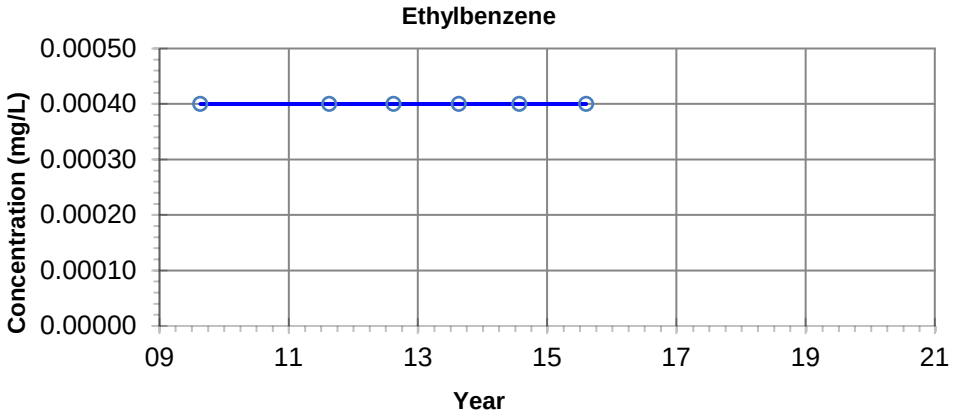

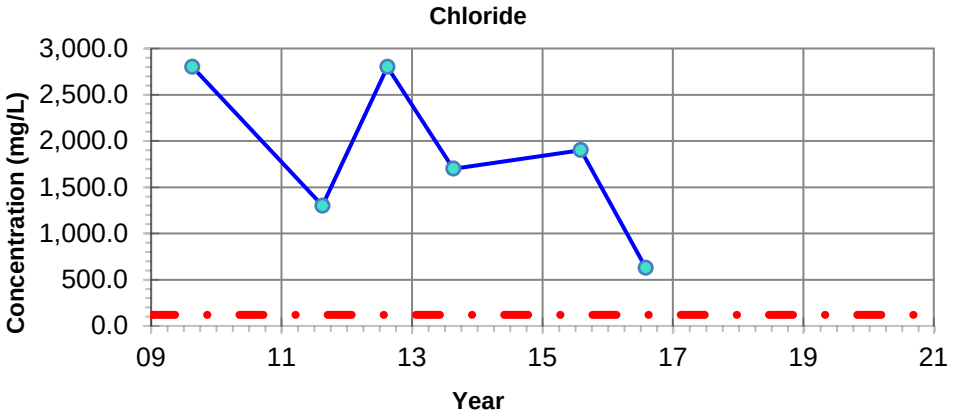

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: CEM 09-3-2

26-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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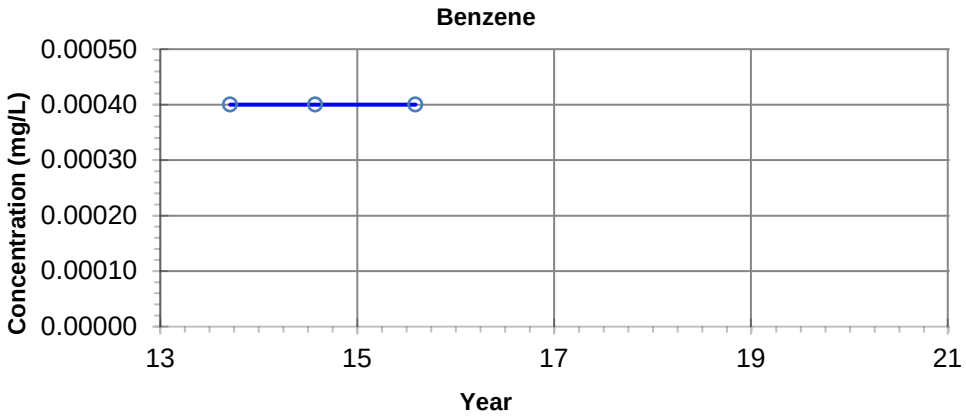

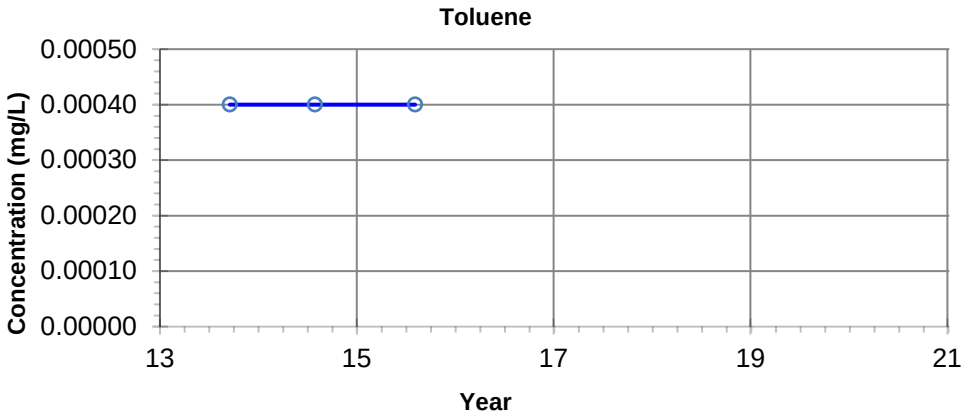

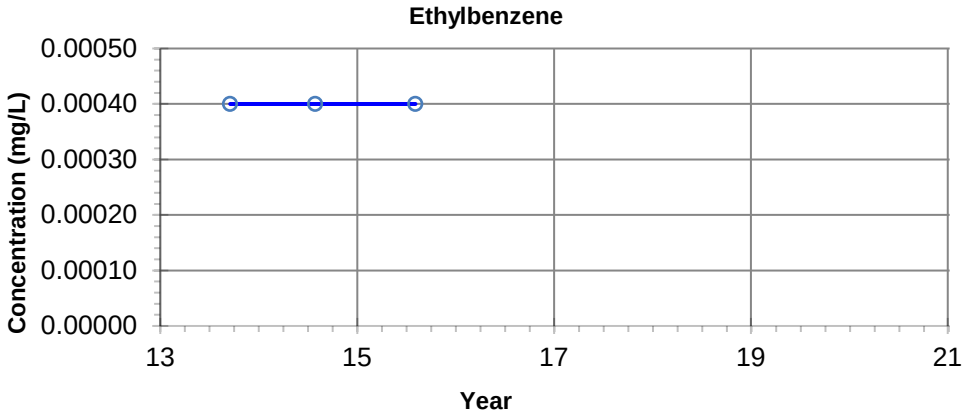

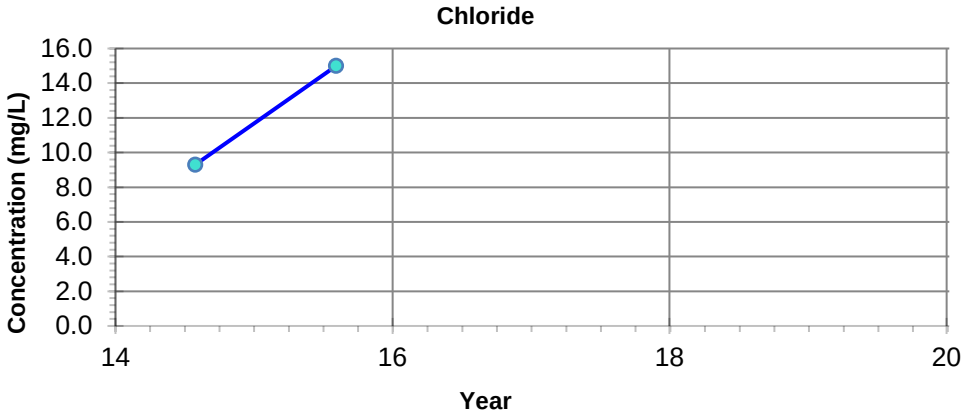

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Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: CEM-13-1-2

26-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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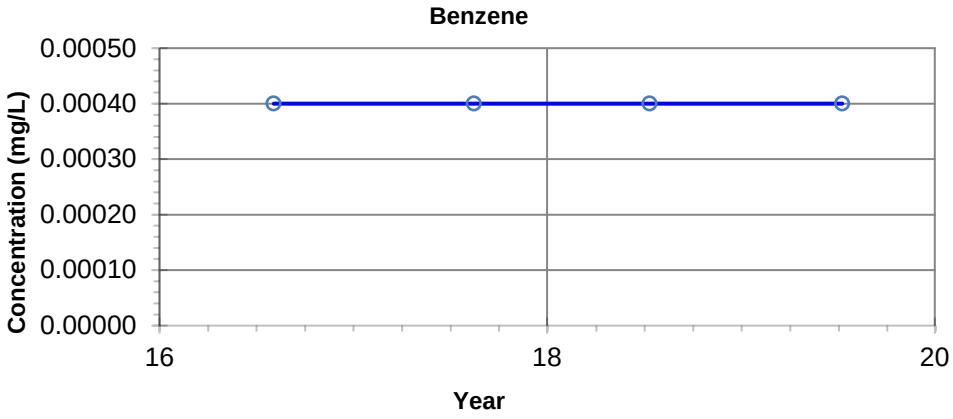

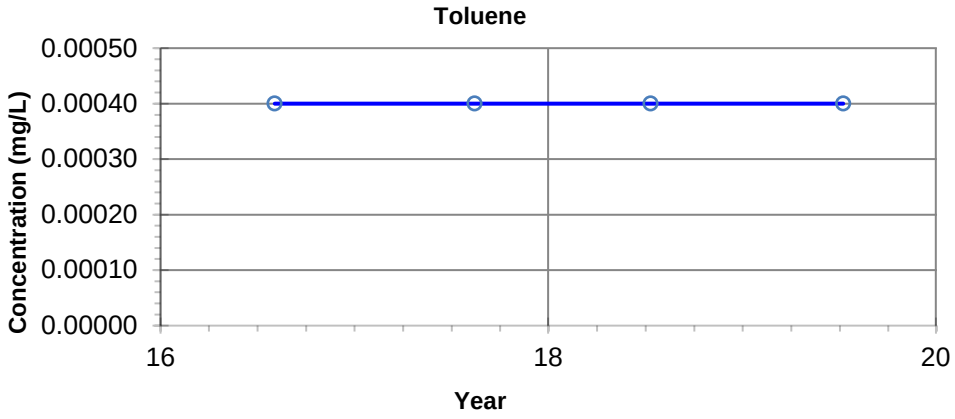

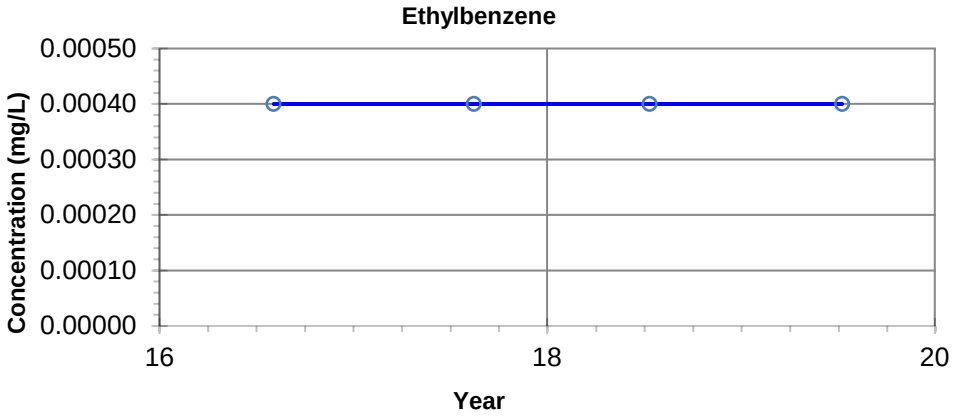

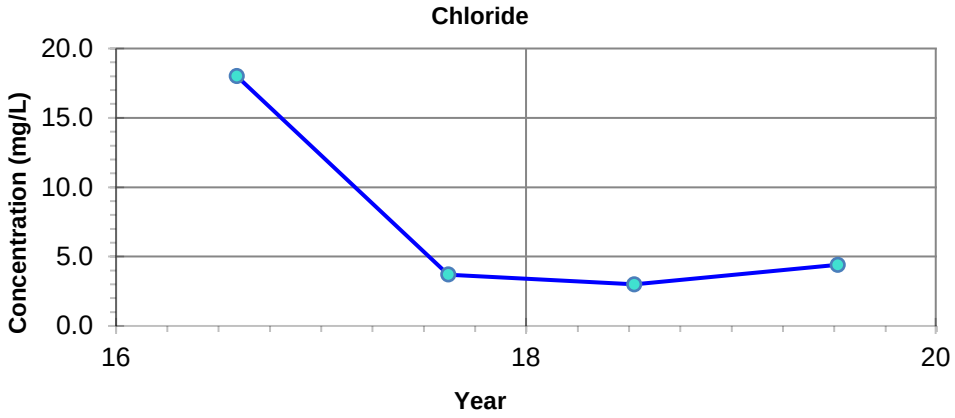

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: C27-16-2-3

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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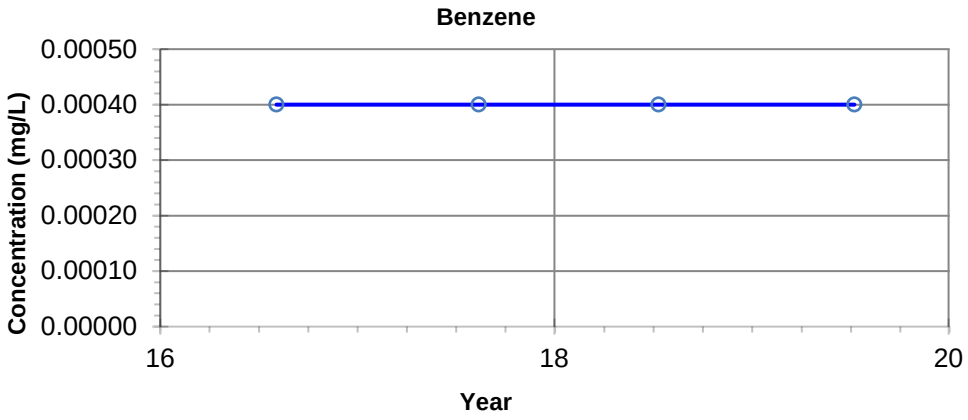

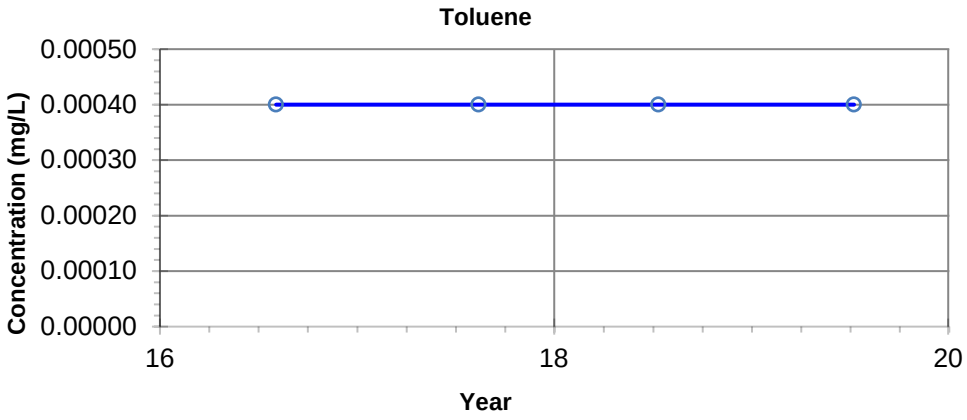

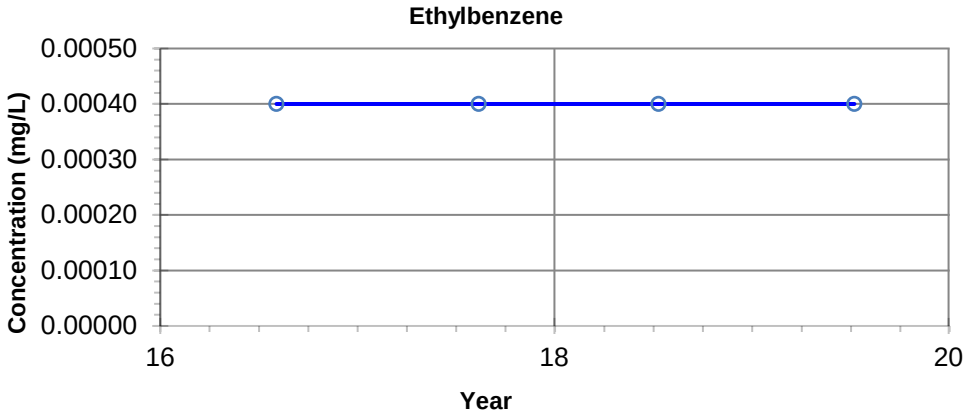

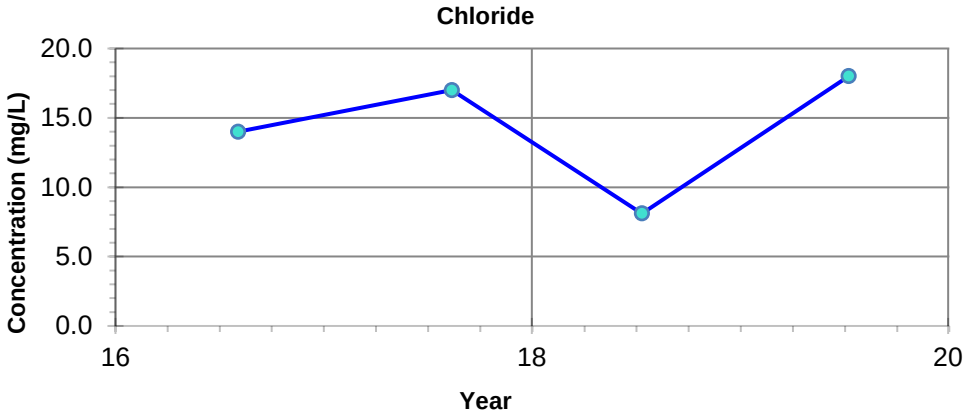

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: C27-16-4-3

24-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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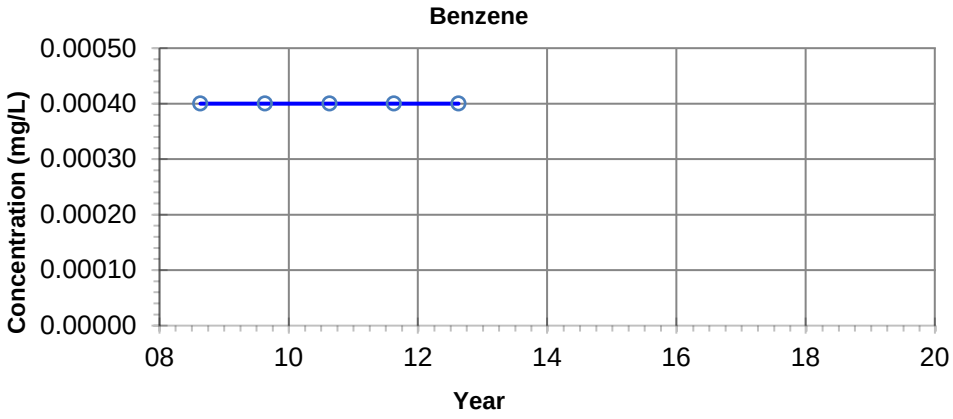

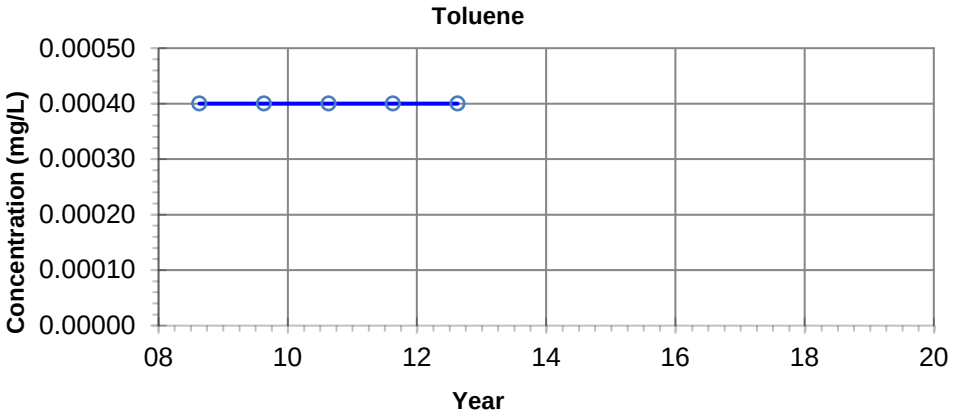

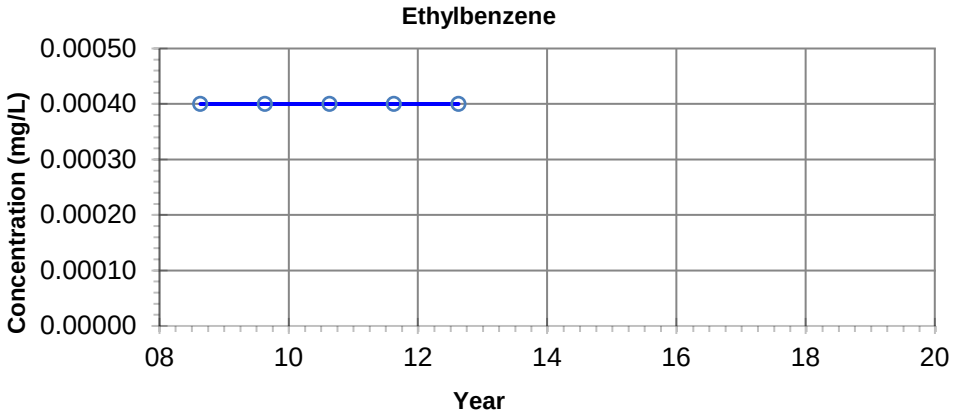

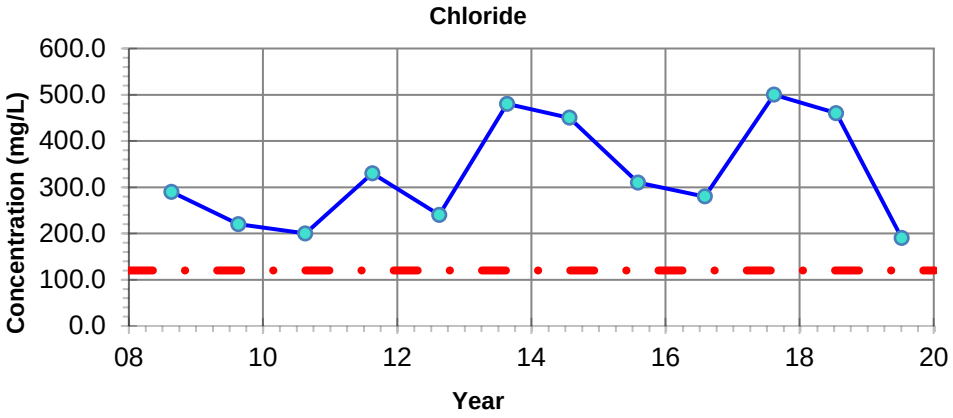

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS 08-1-4

26-Mar-2020 date	NA edited by	JC drawn by	NA app by

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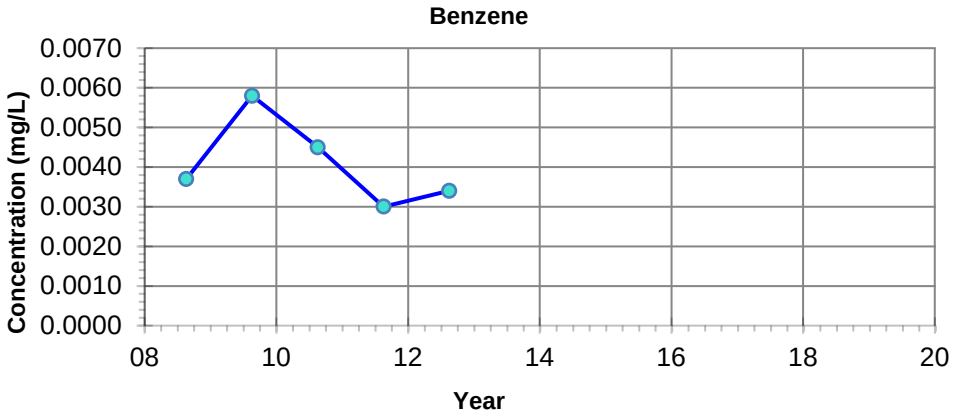

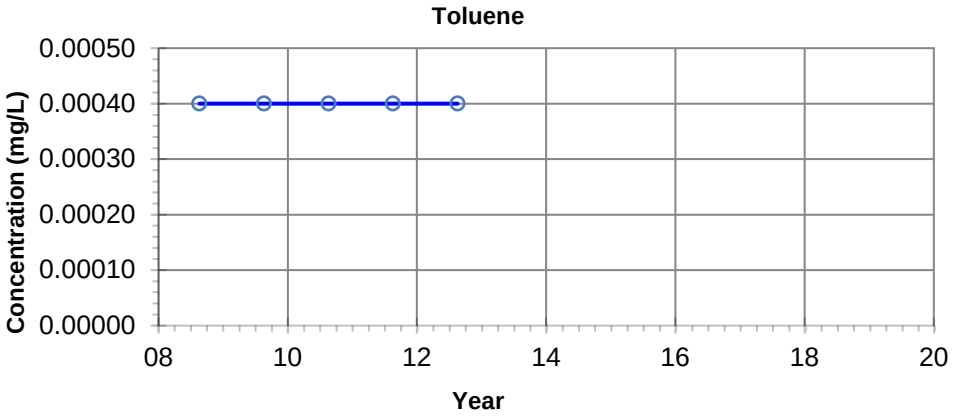

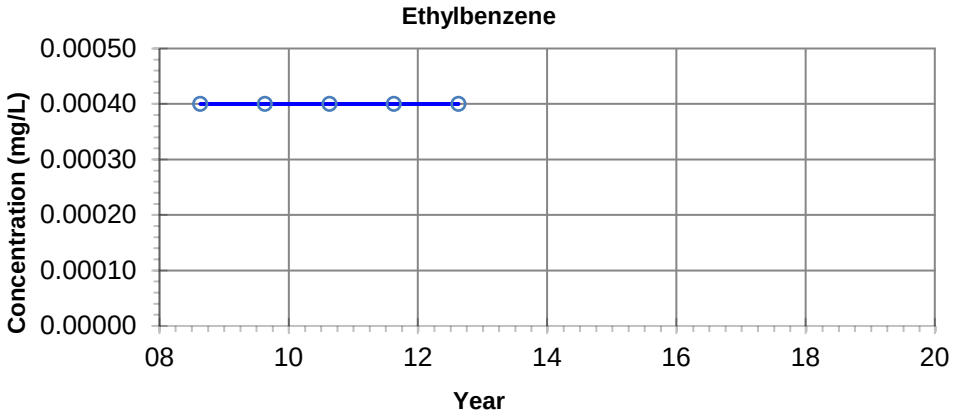

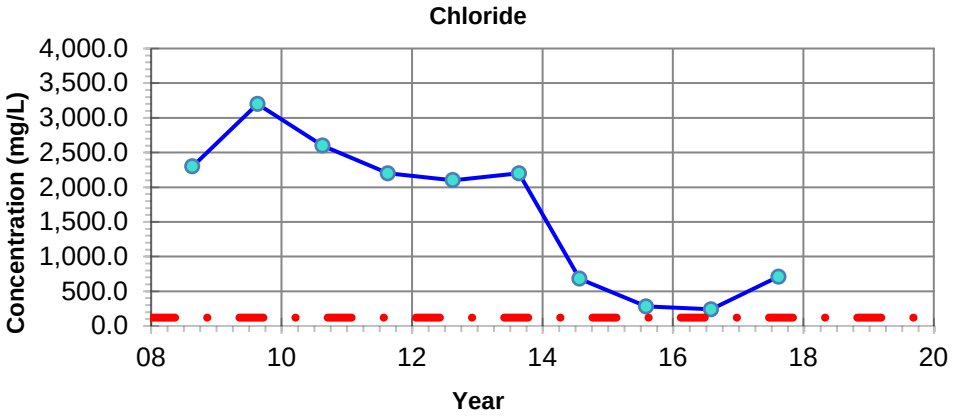

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS 08-2-5

26-Mar-2020 date	NA edited by	JC drawn by	NA app by

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Worley Group

PROJECT NUMBER:
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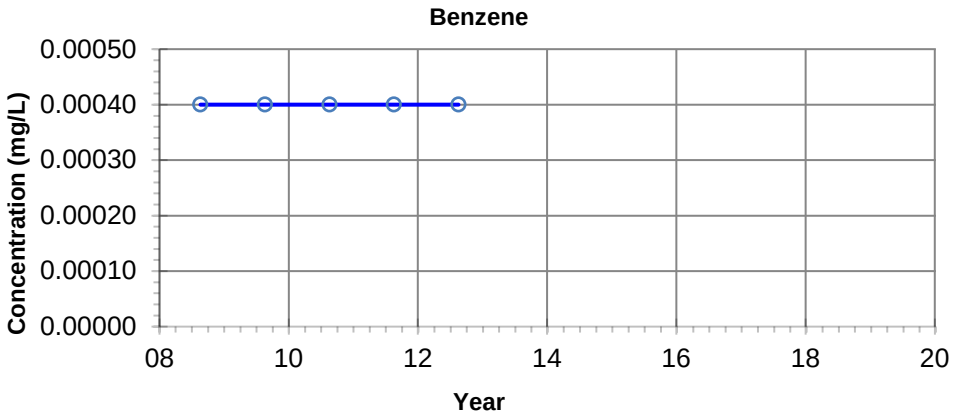

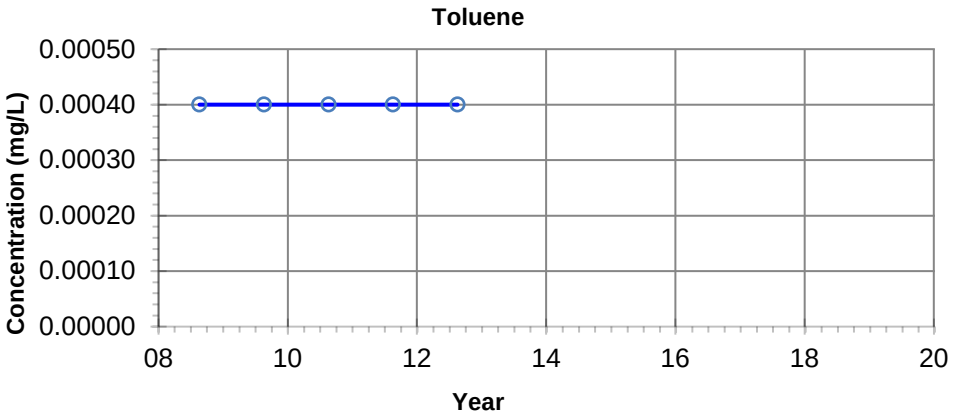

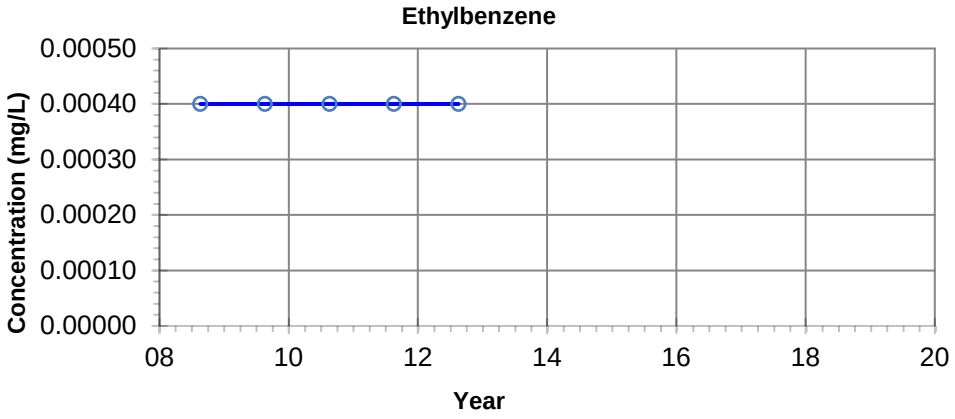

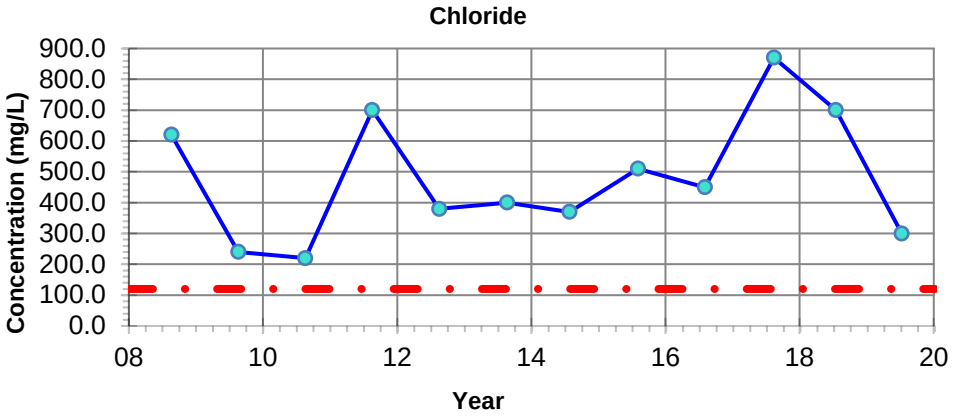

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS 08-3-4

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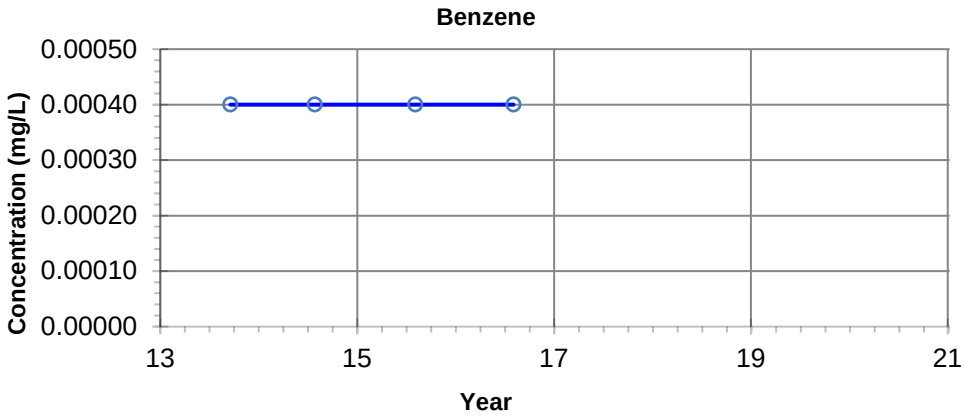

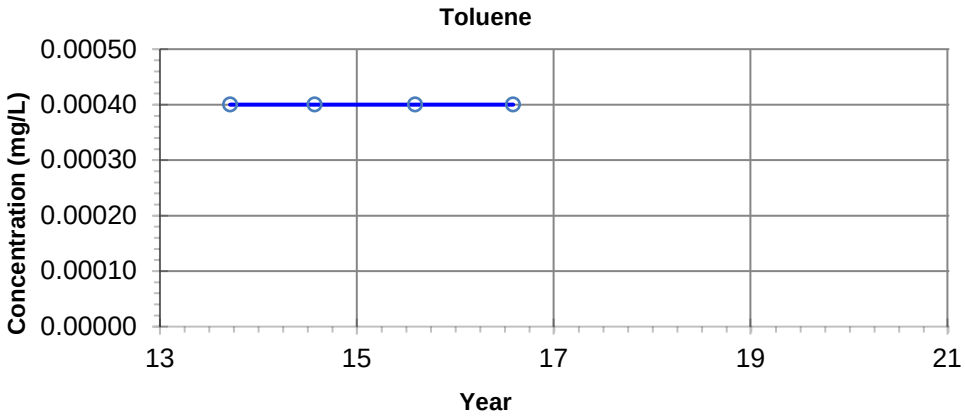

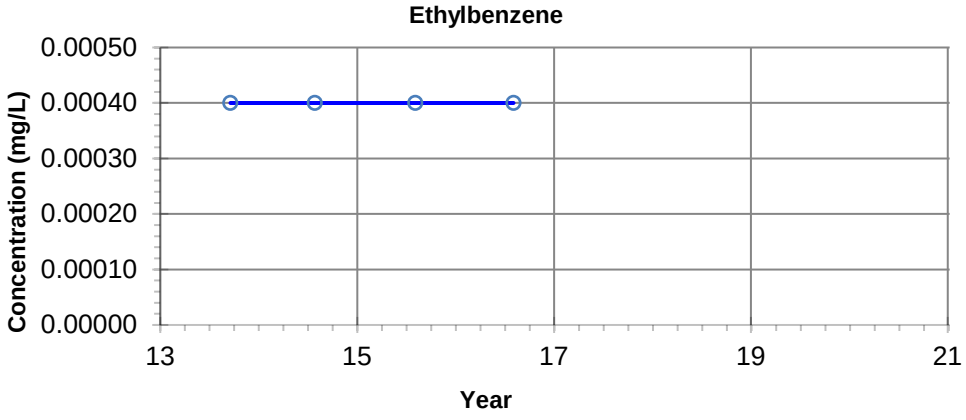

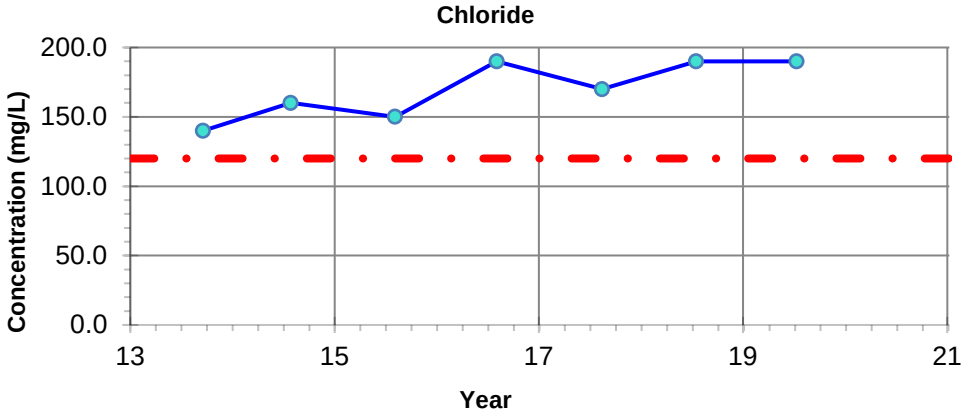

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS-13-1-3

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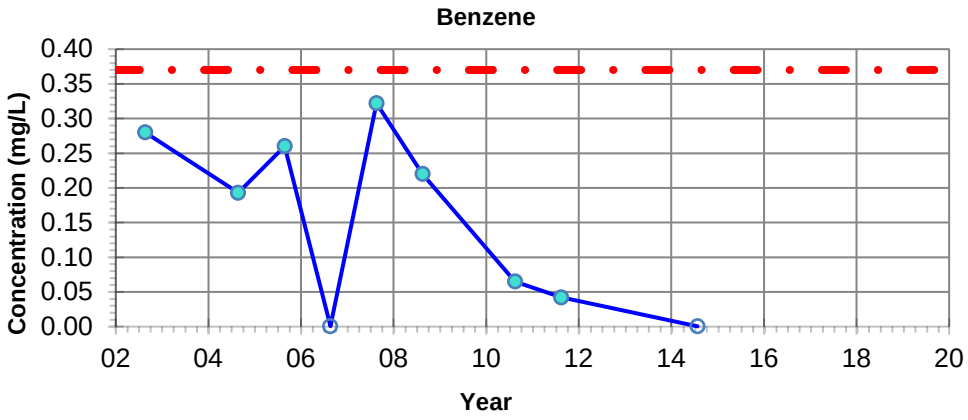

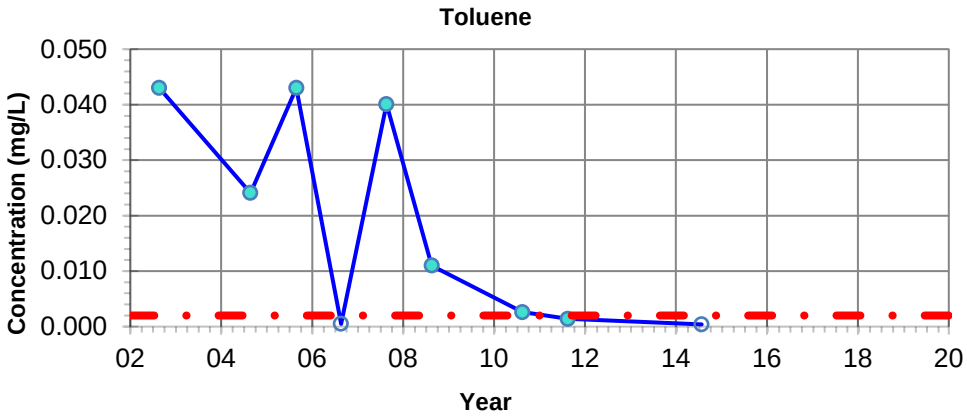

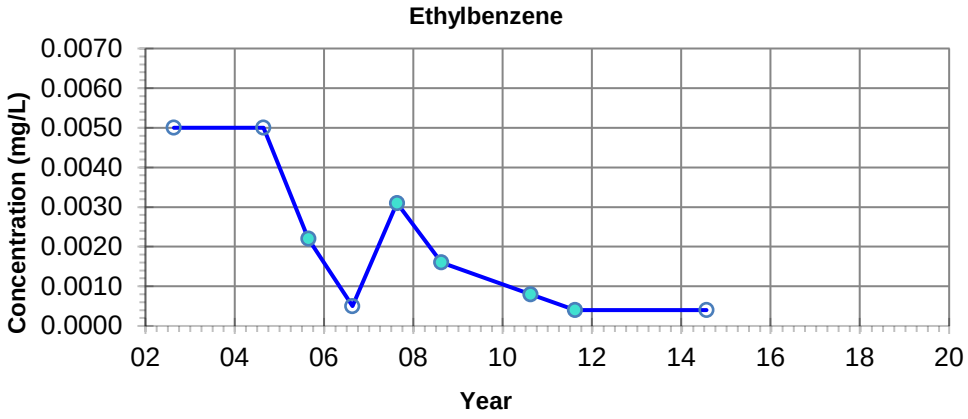

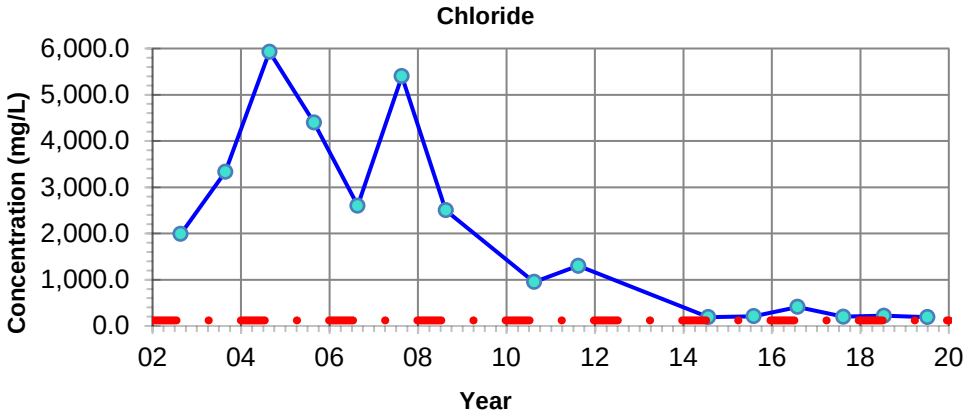

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS 02-7-7

26-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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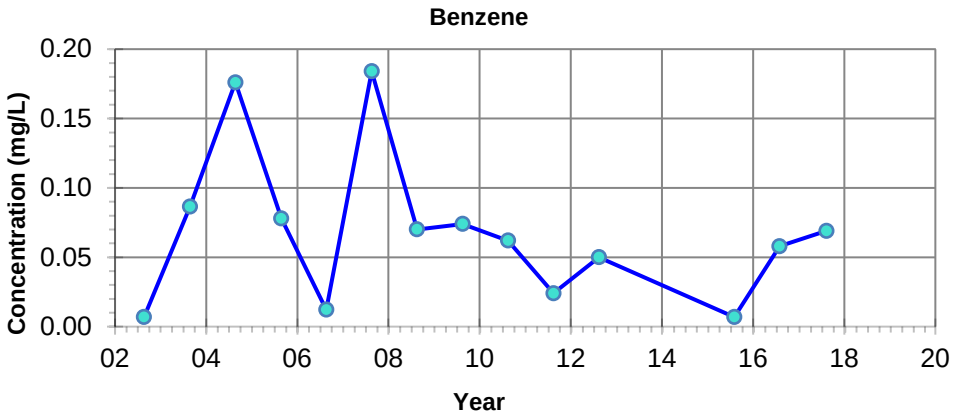

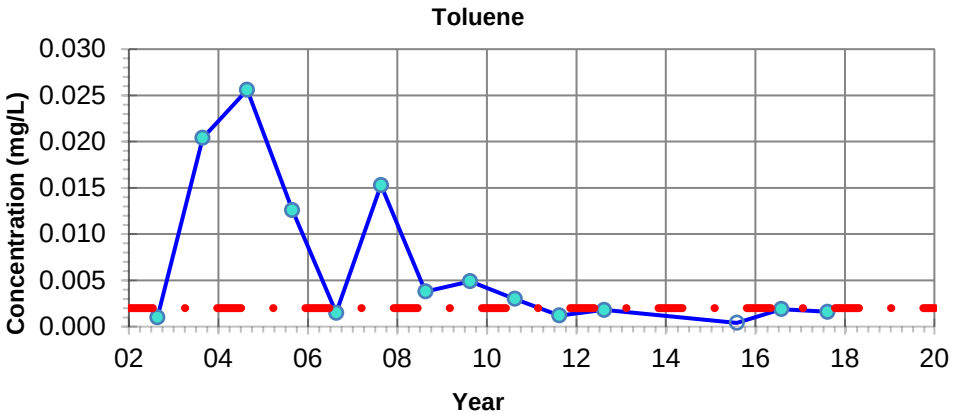

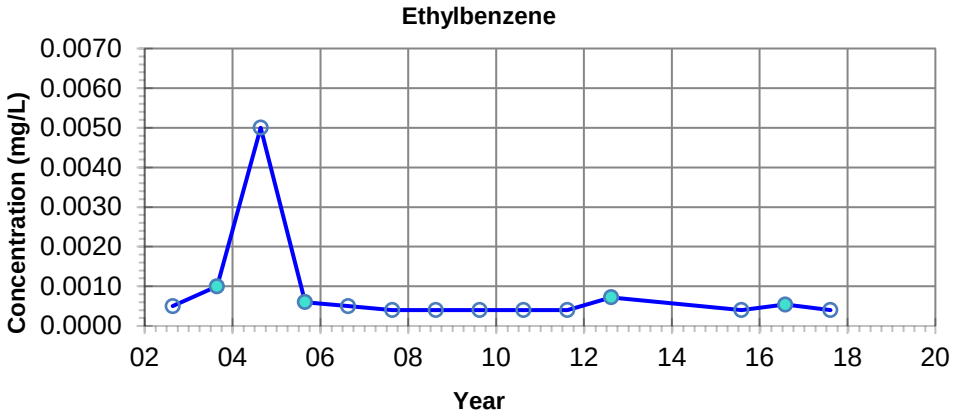

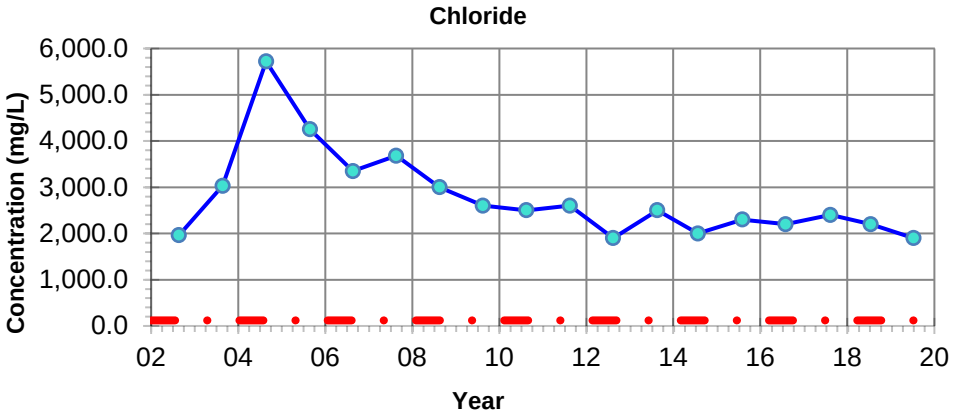

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS 02-8-8

26-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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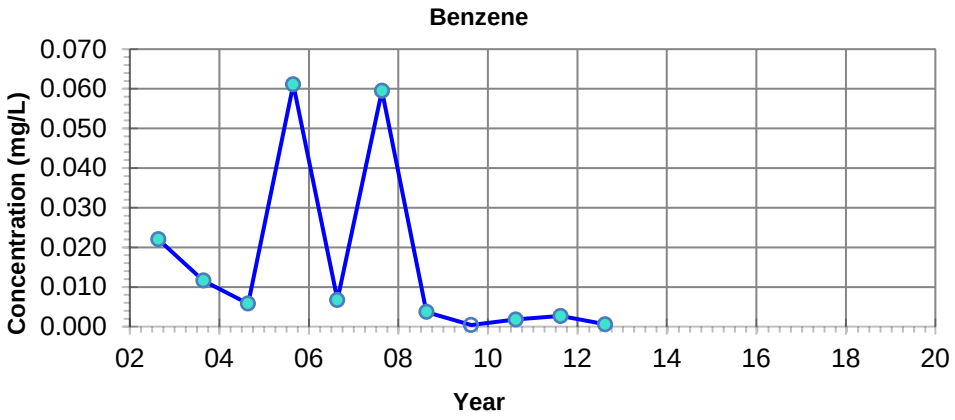

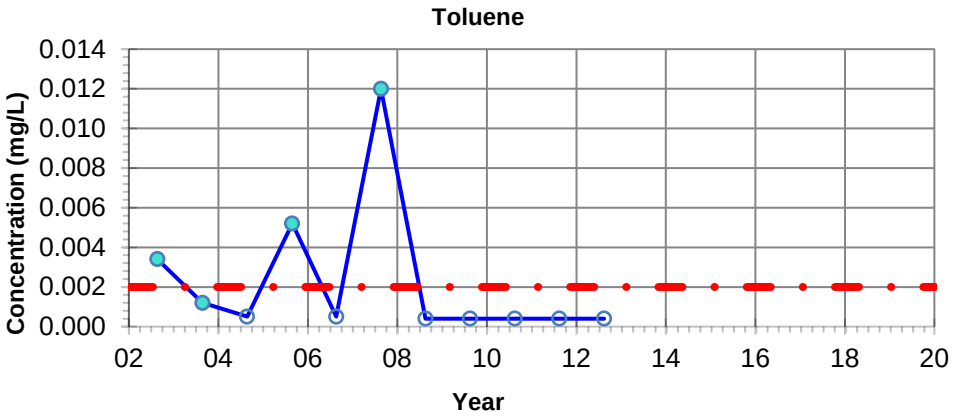

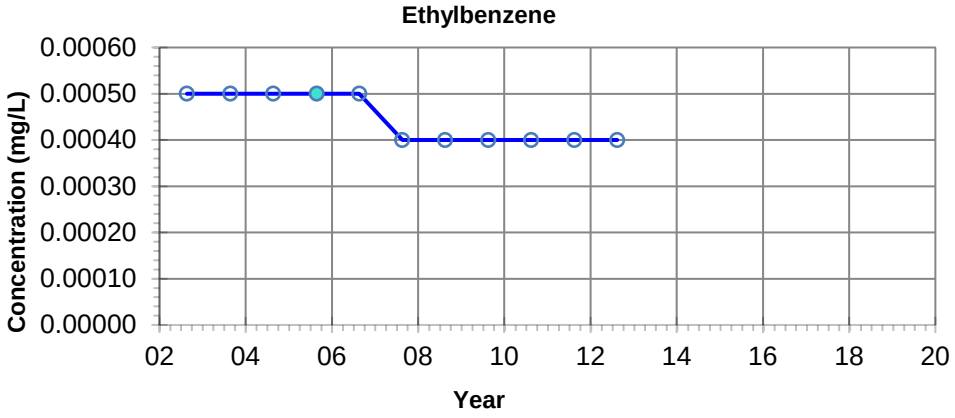

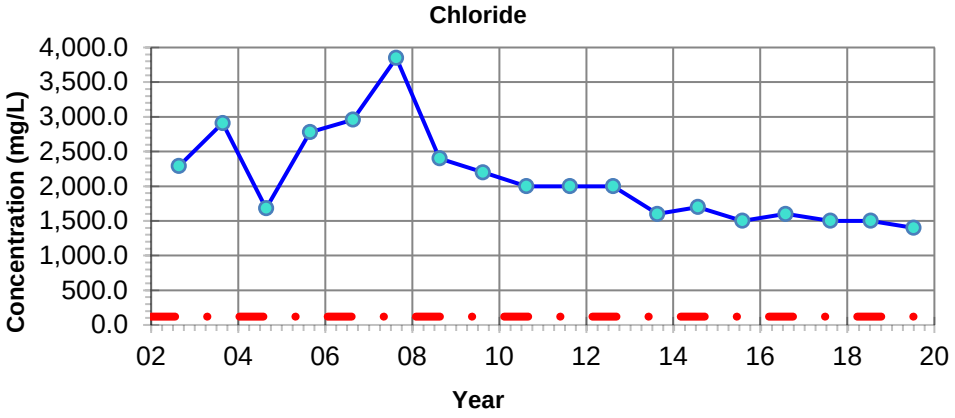

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS 02-9-8

26-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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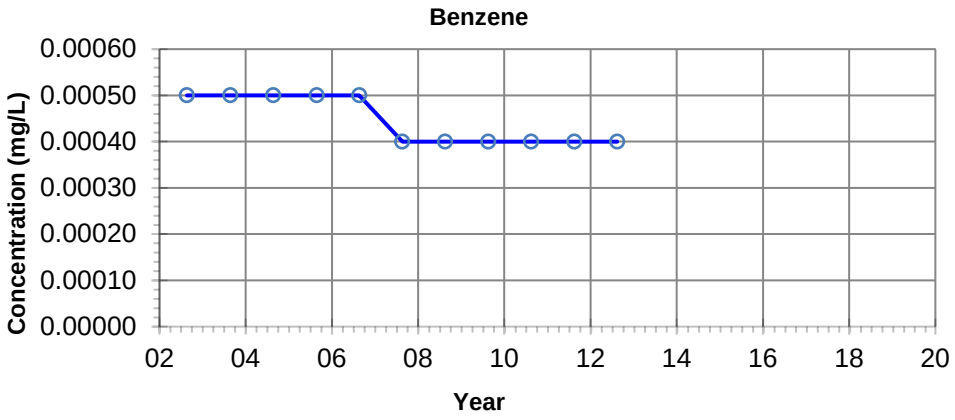

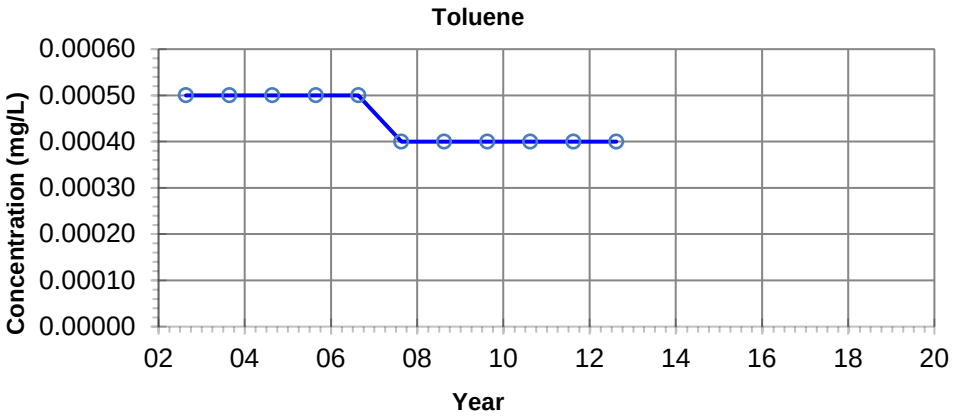

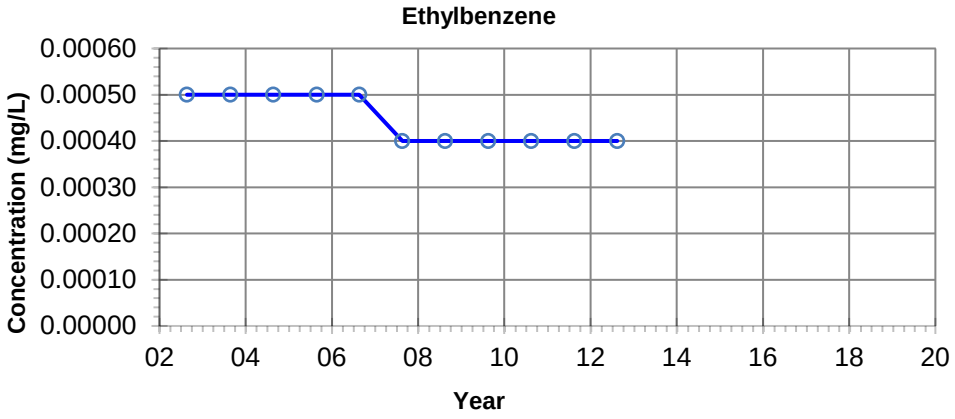

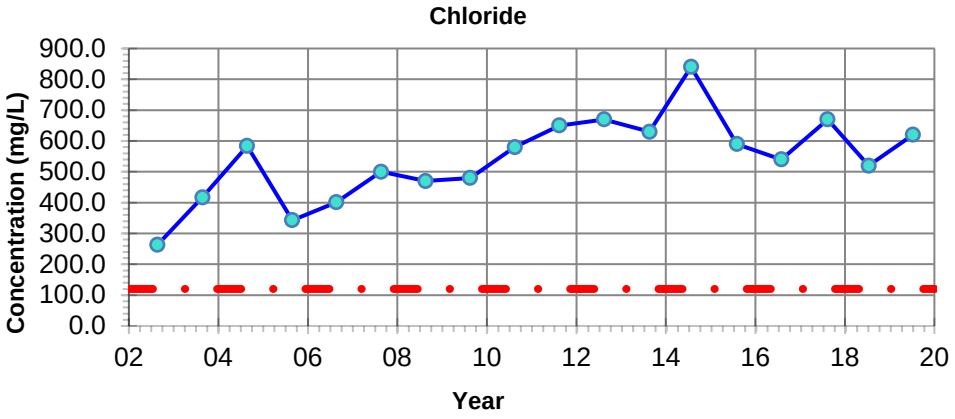

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS 02-10-8

26-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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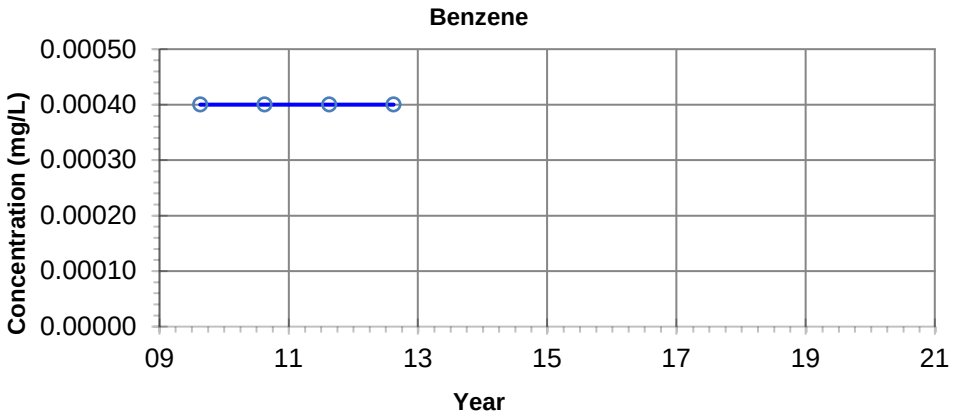

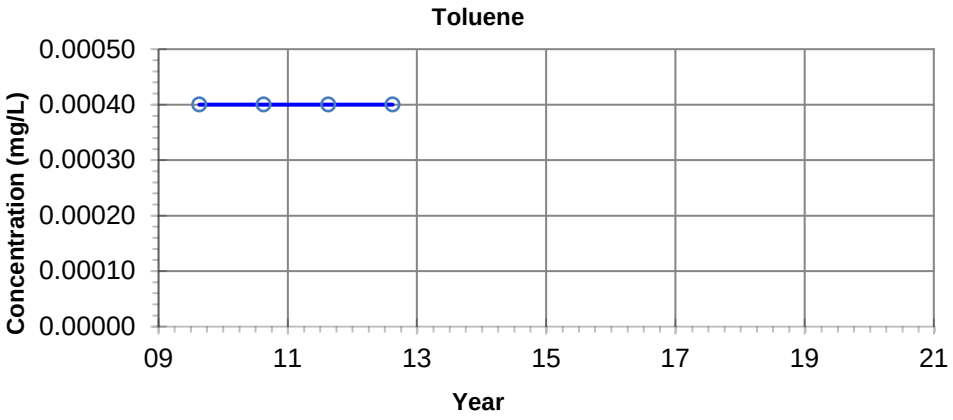

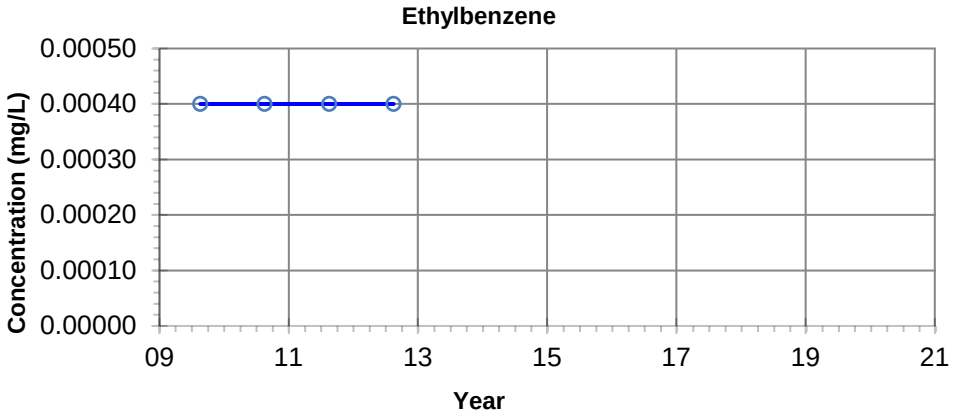

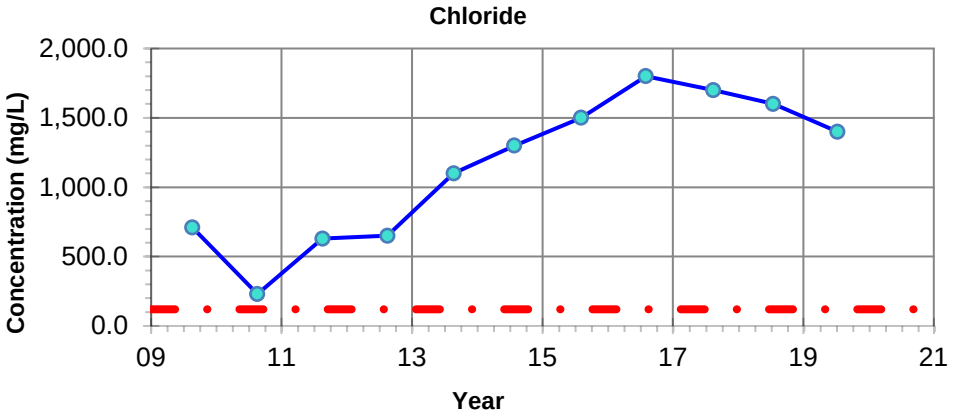

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS 09-9-2

26-Mar-2020 date	NA edited by	JC drawn by	NA app by

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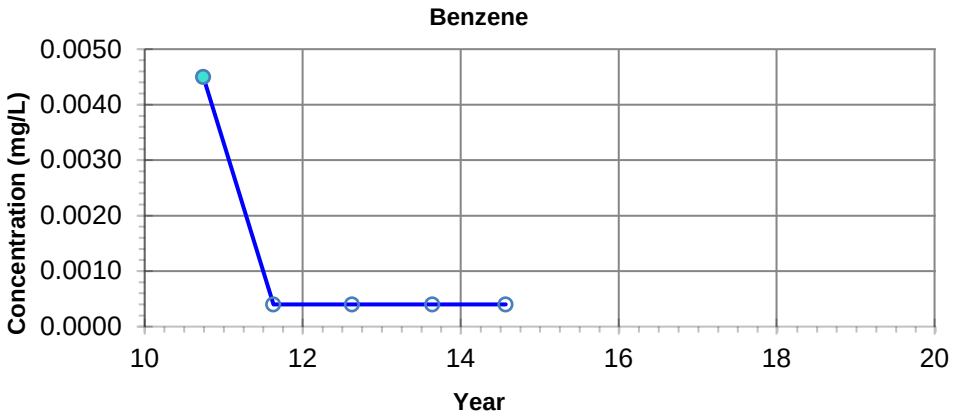

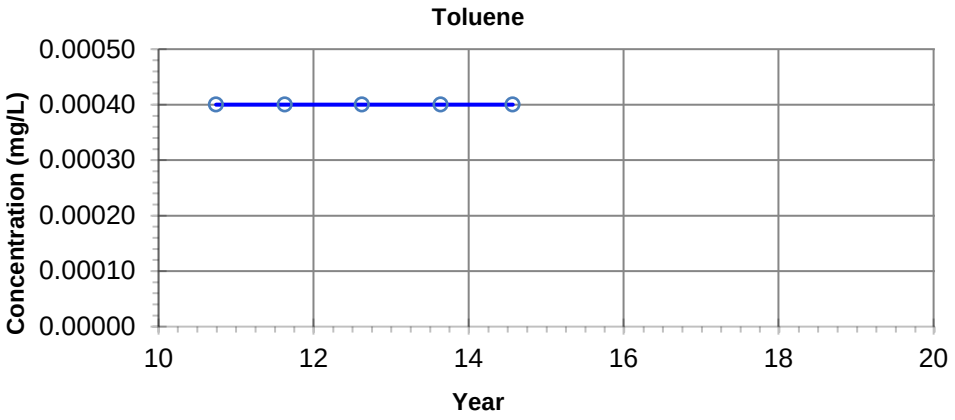

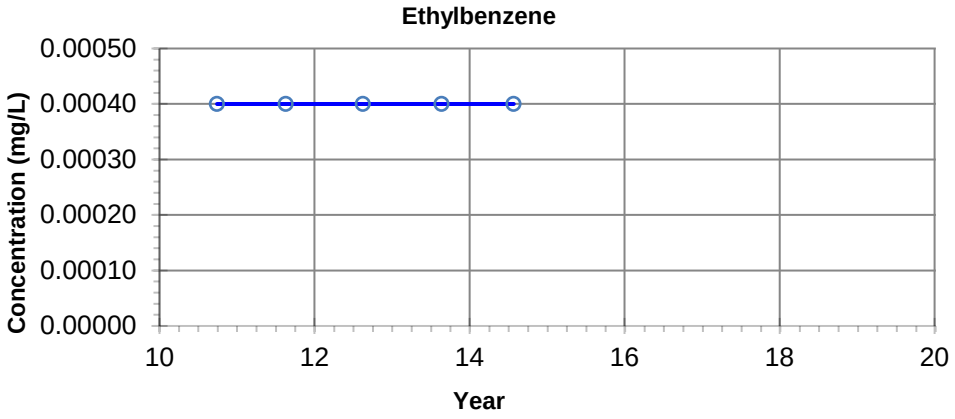

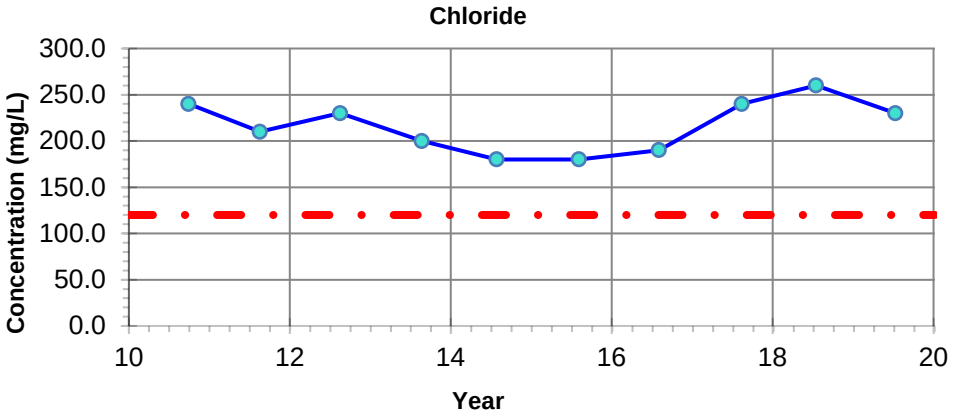

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS-10-2-3

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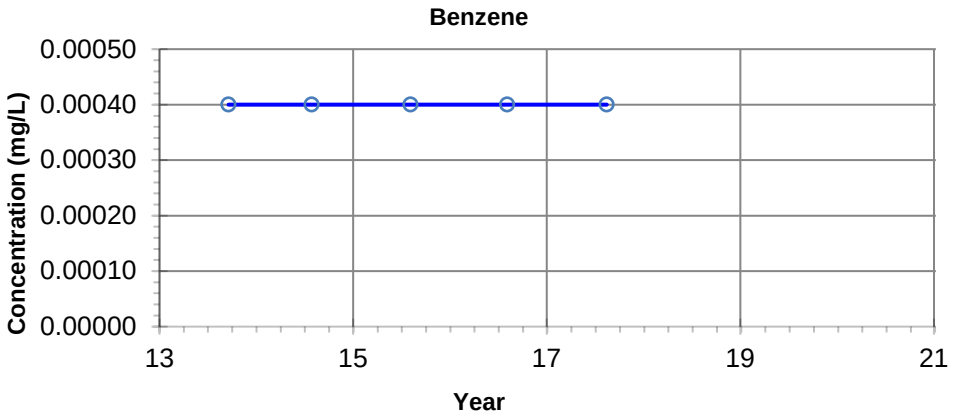

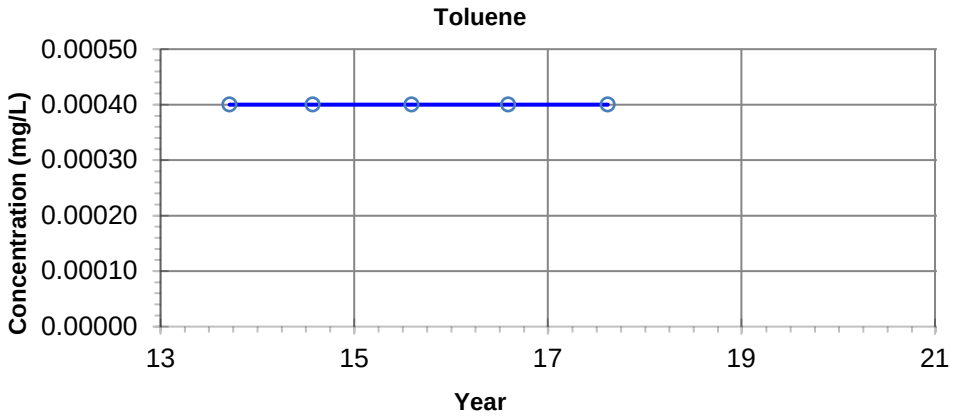

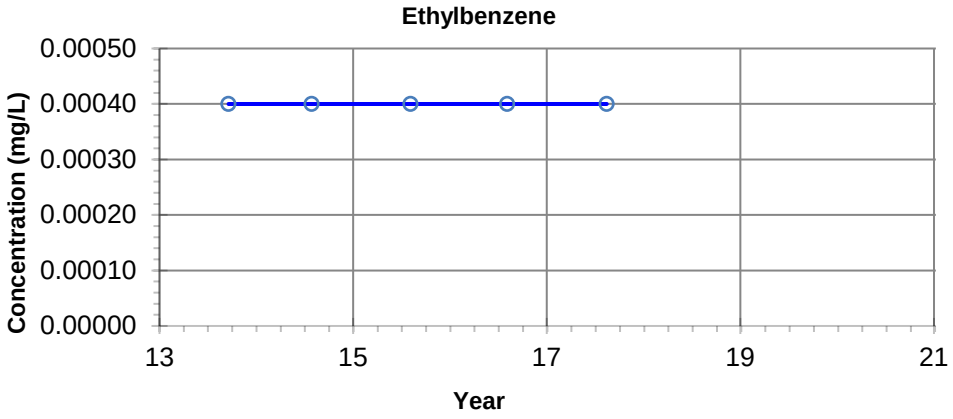

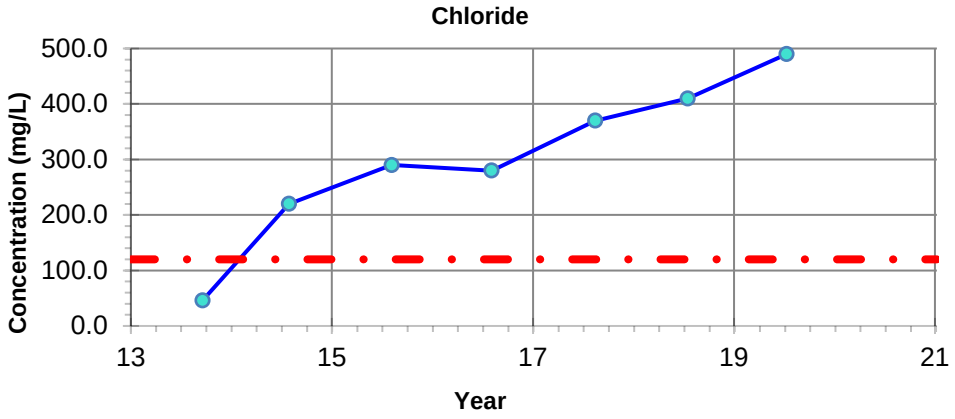

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Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS-13-3-3

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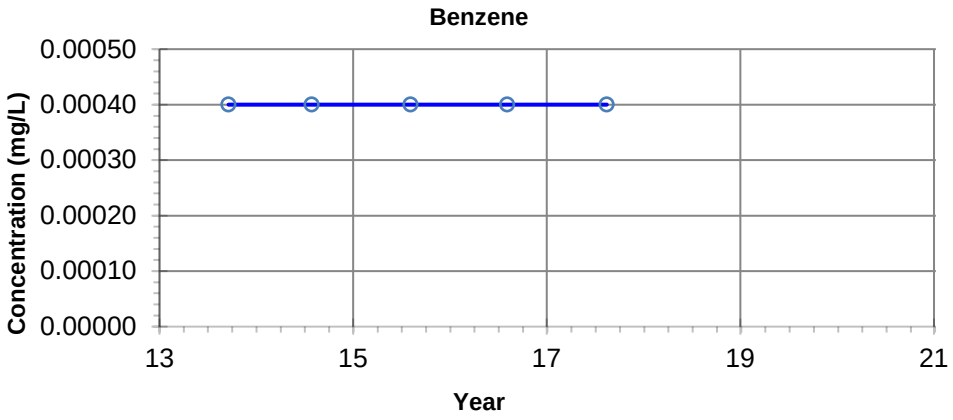

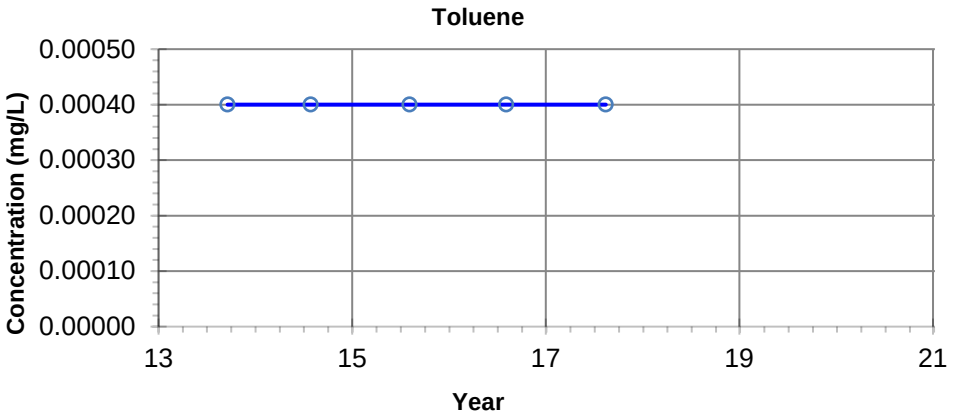

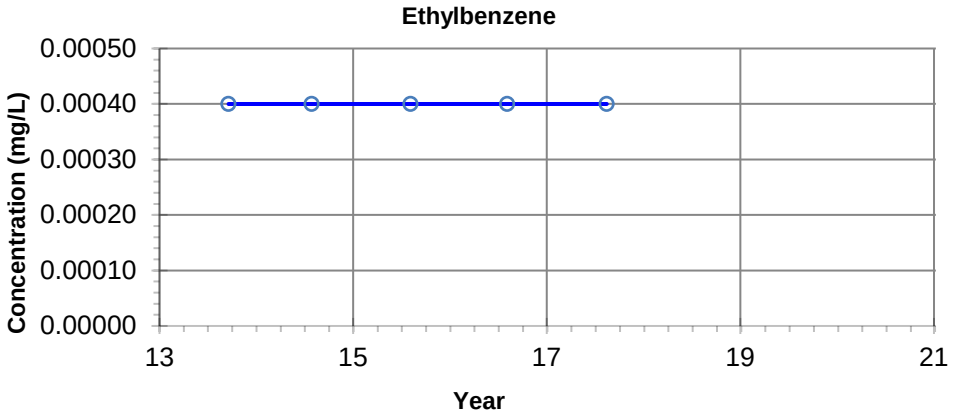

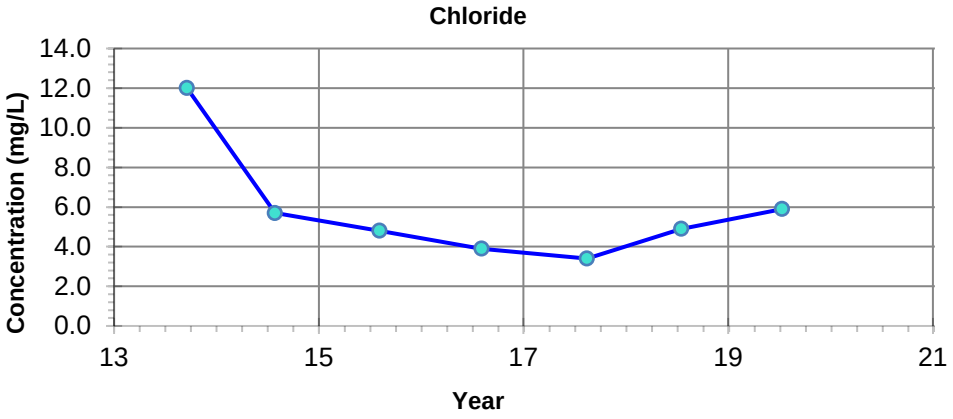

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS-13-4-3

26-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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PROJECT NUMBER:
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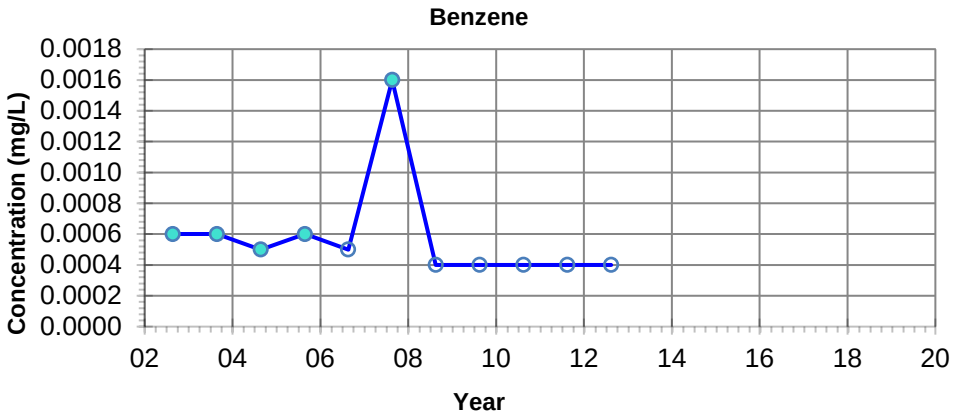

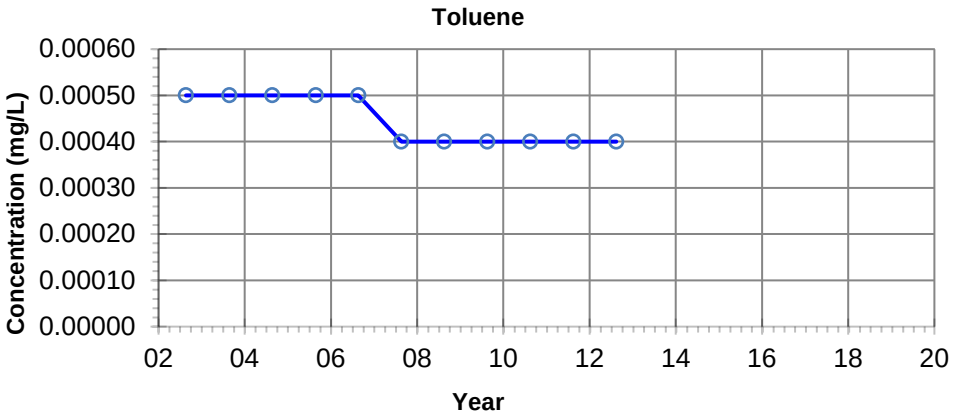

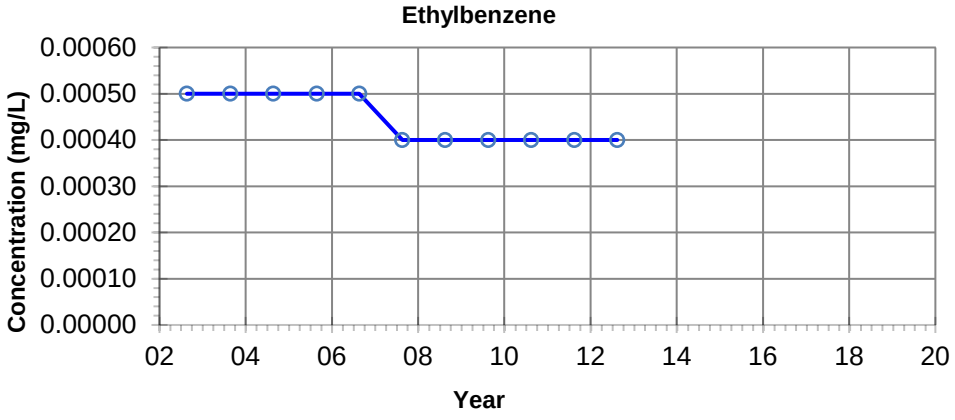

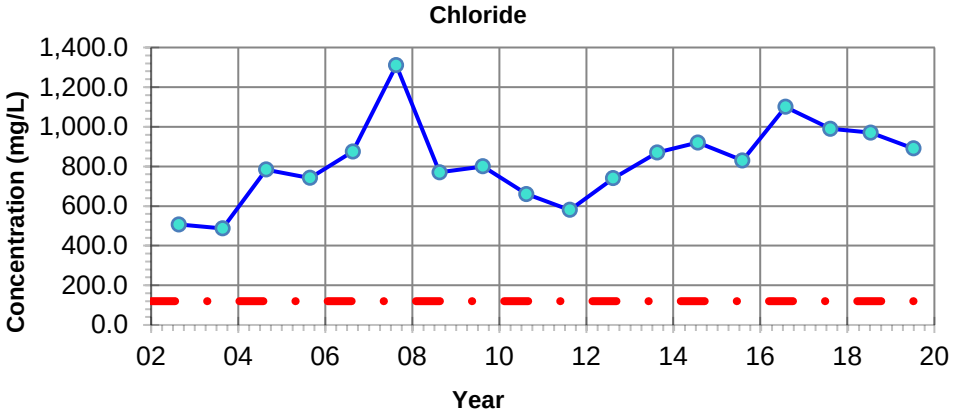

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS 02-5-8

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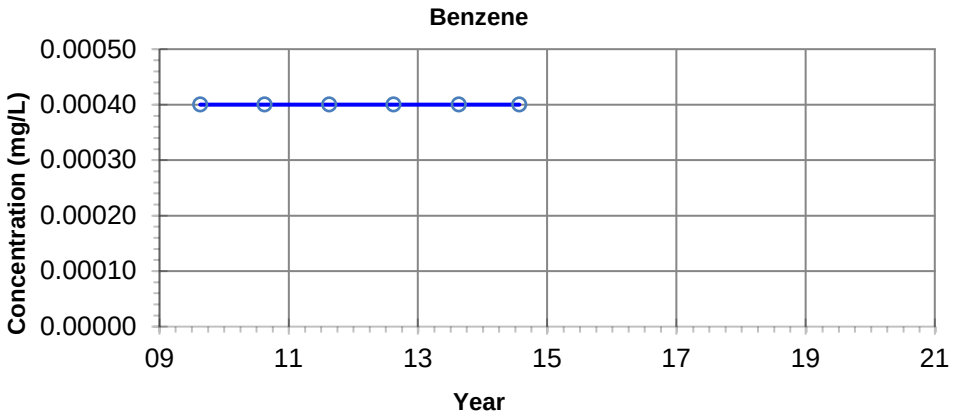

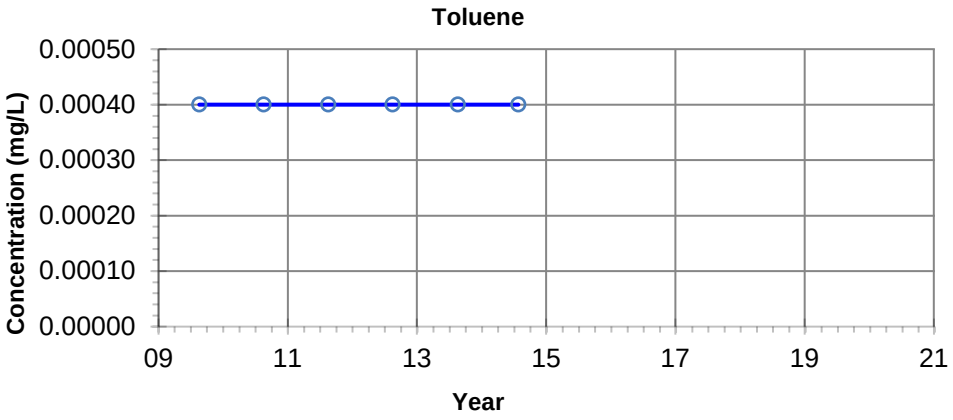

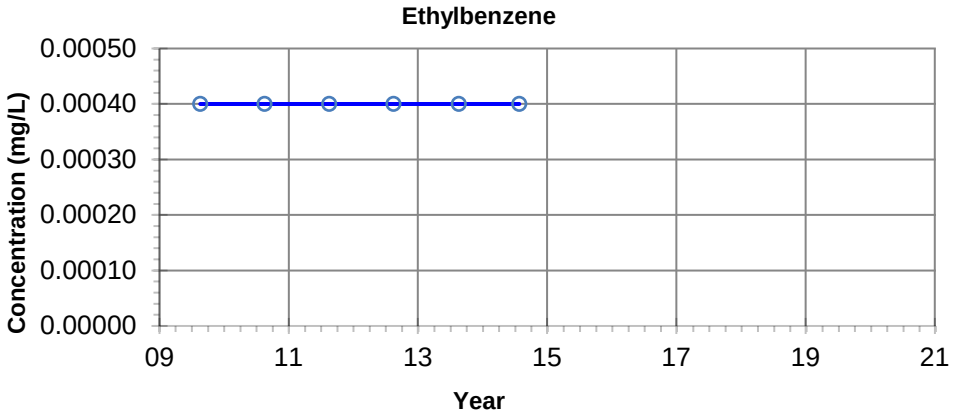

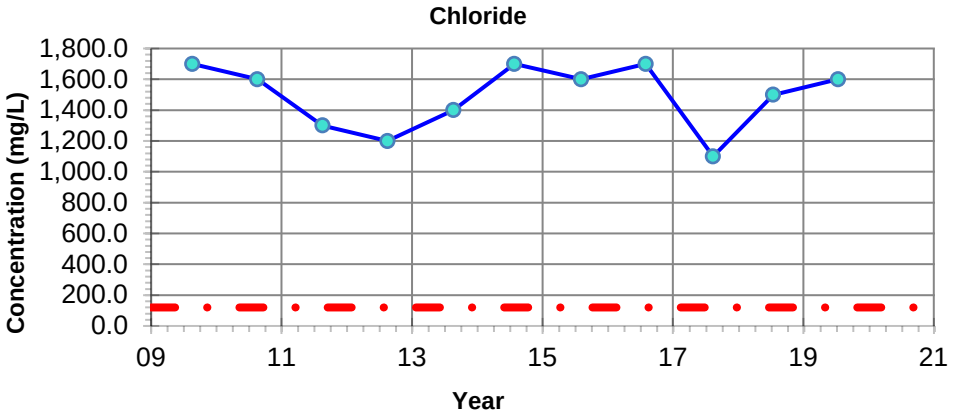

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Imperial Oil Resources
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Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS 09-1-3

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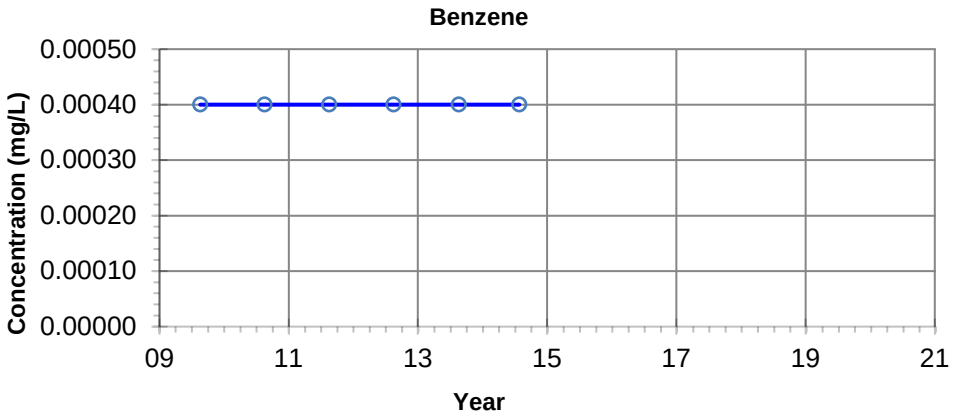

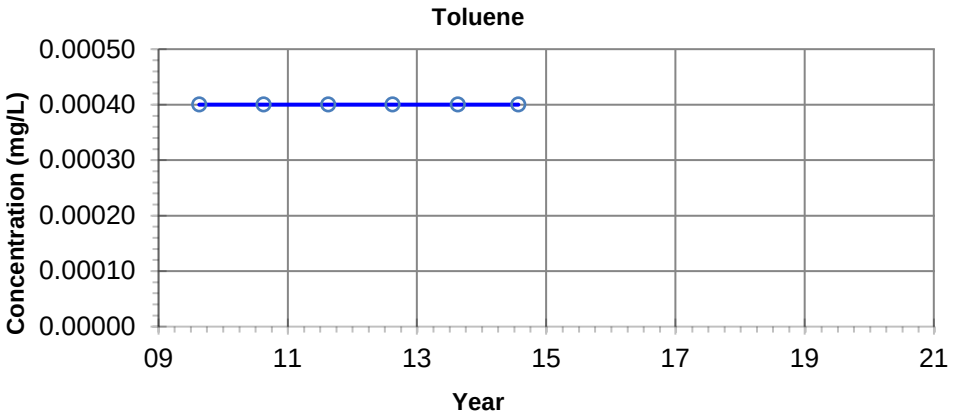

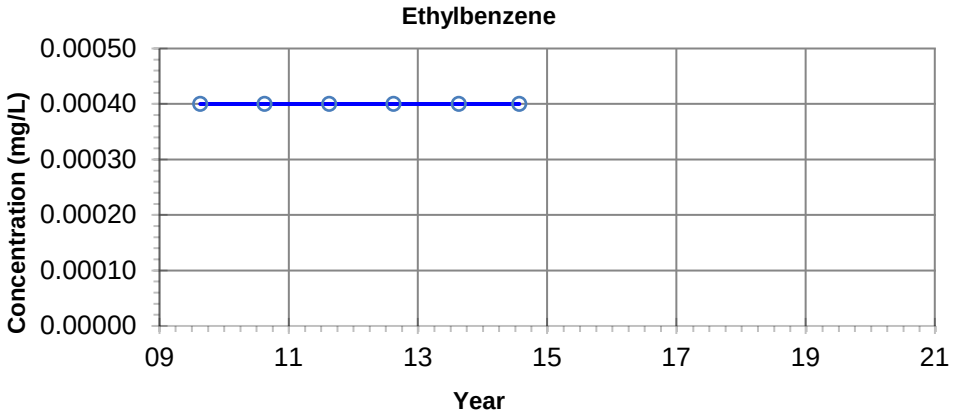

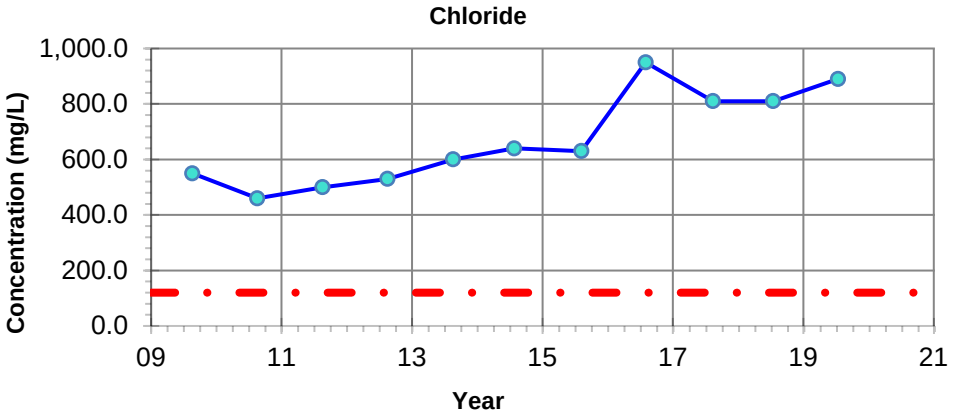

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Imperial Oil Resources
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Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS 09-2-3

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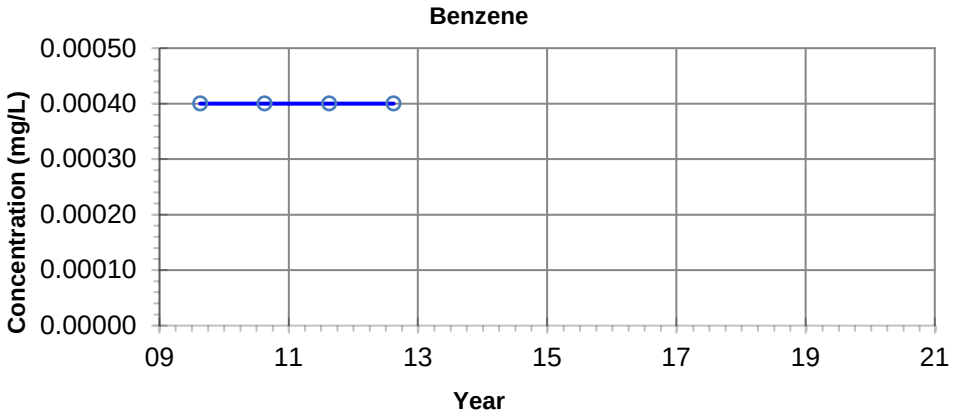

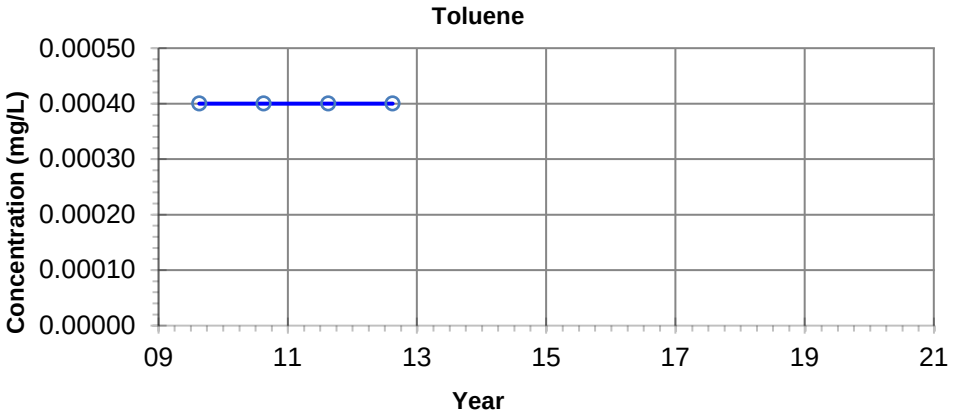

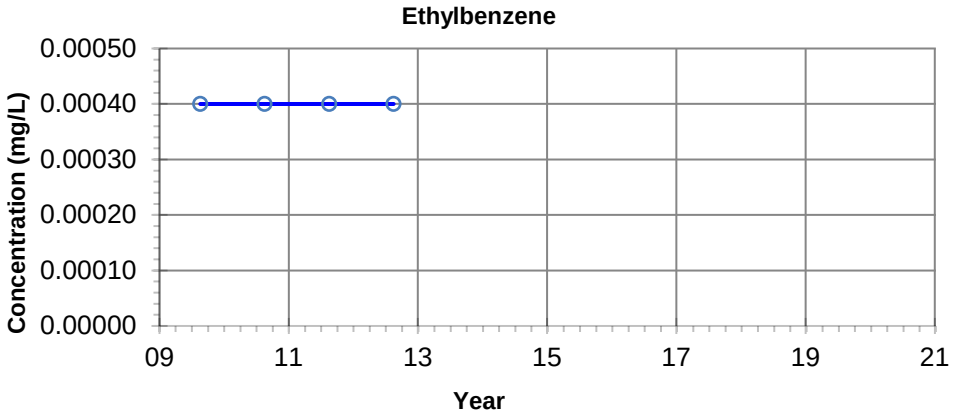

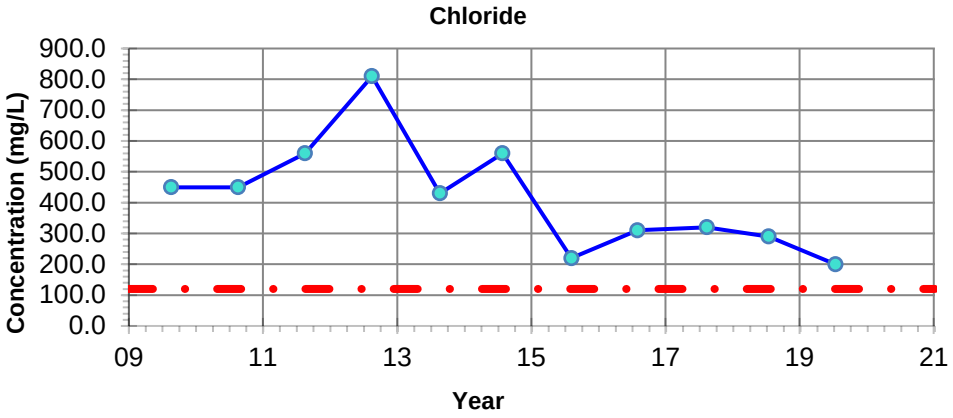

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Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS 09-5-3

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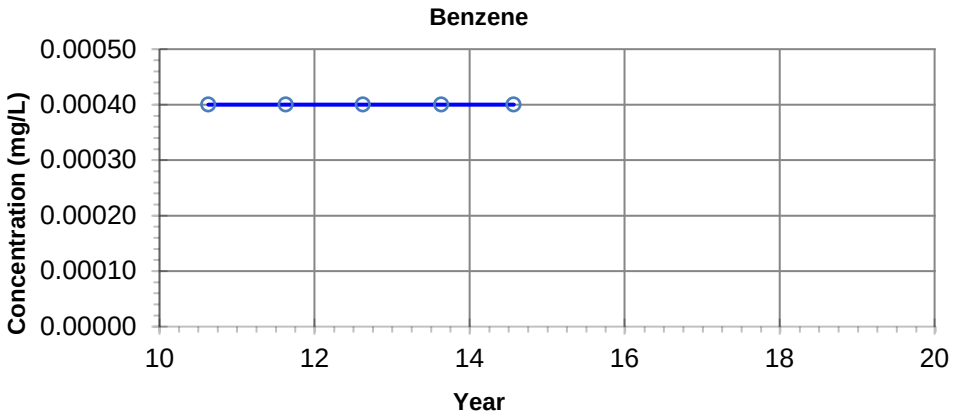

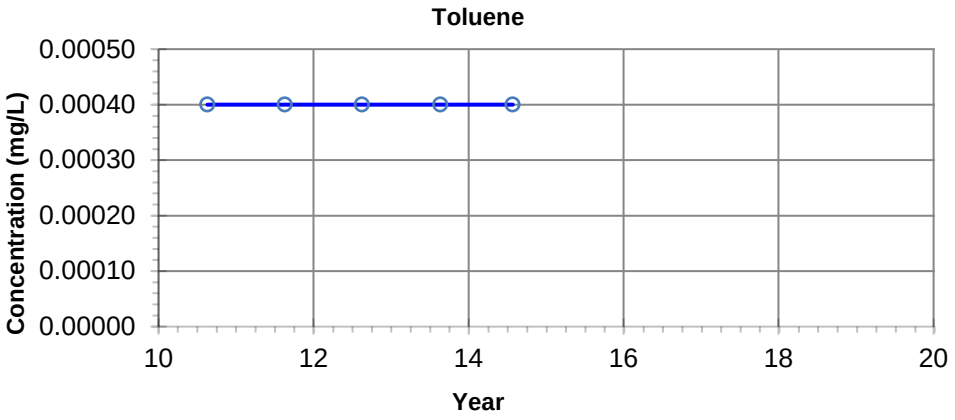

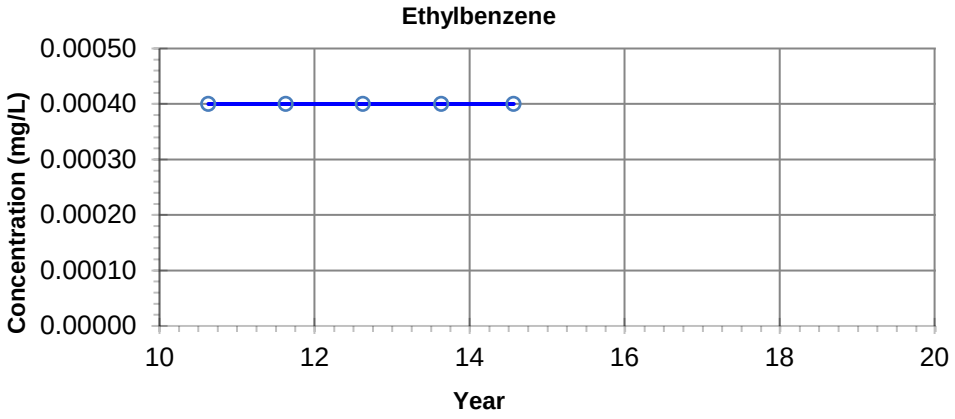

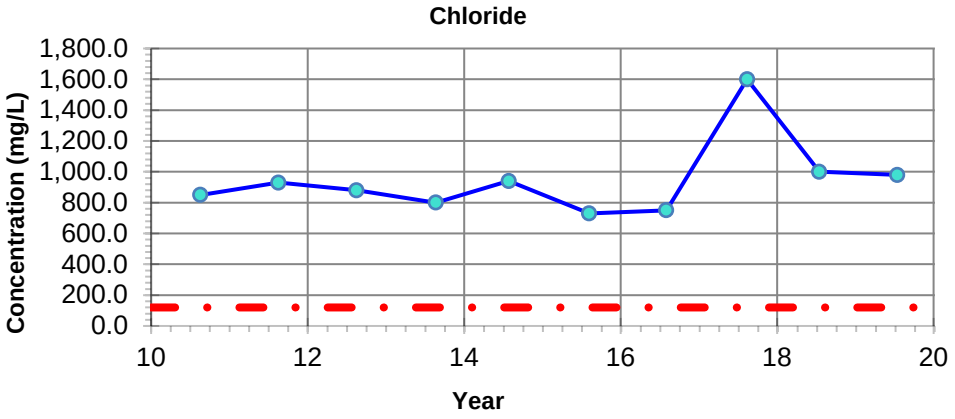

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS 09-15-3

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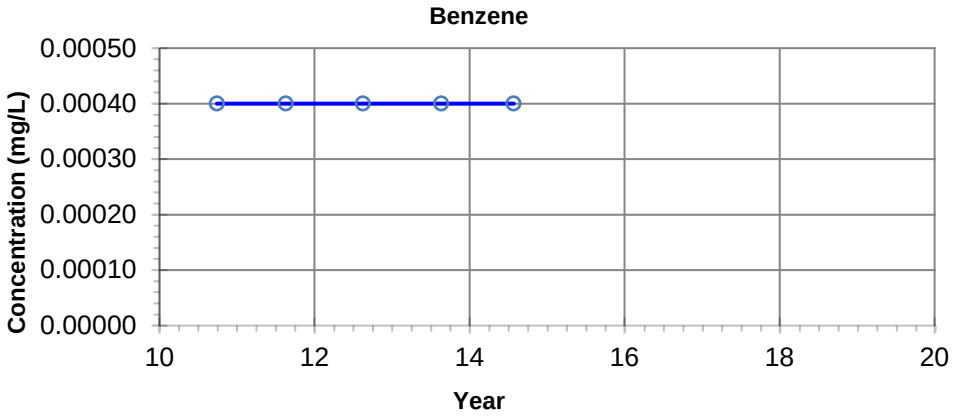

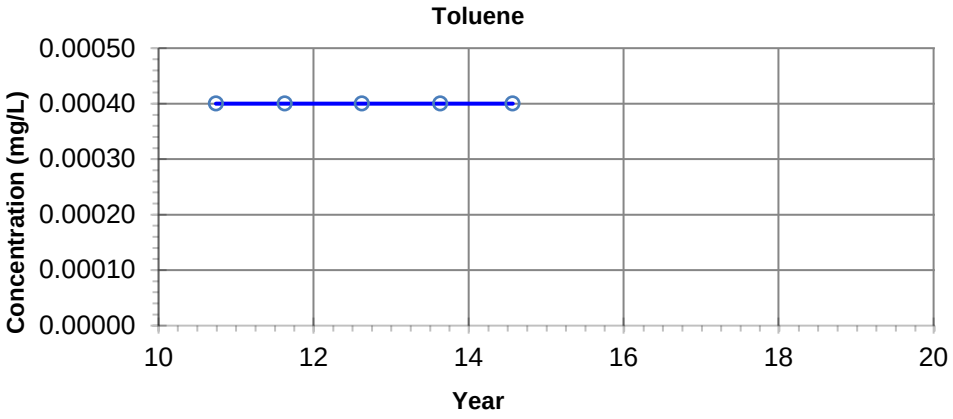

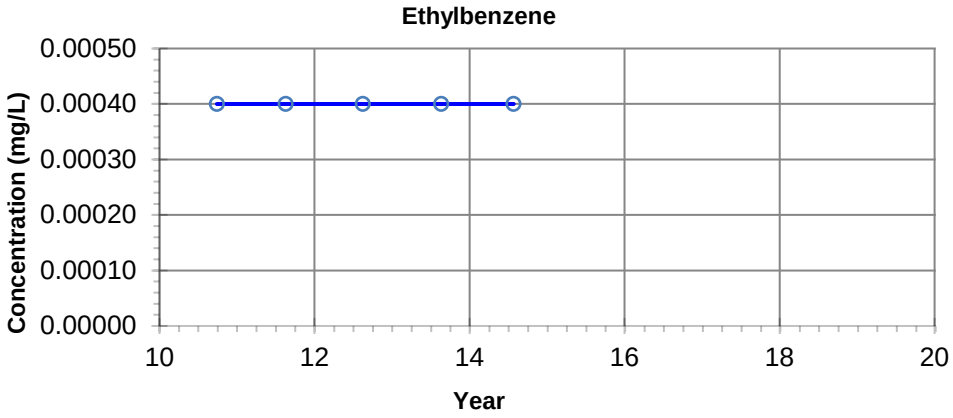

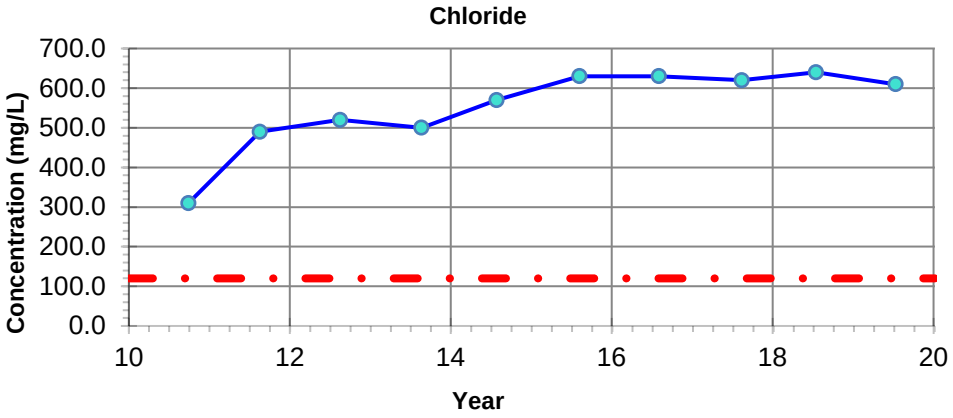

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS-10-1-7

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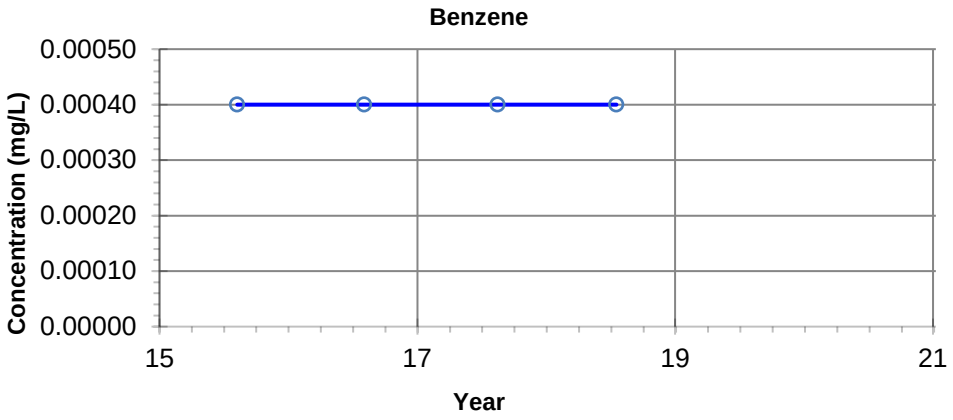

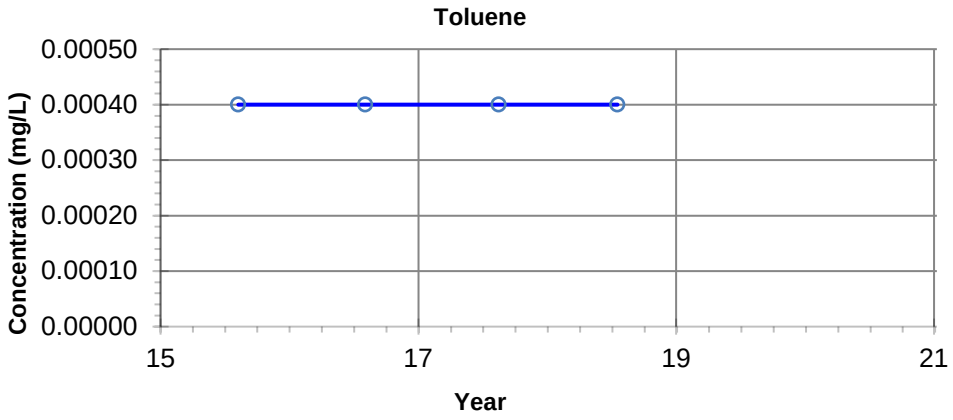

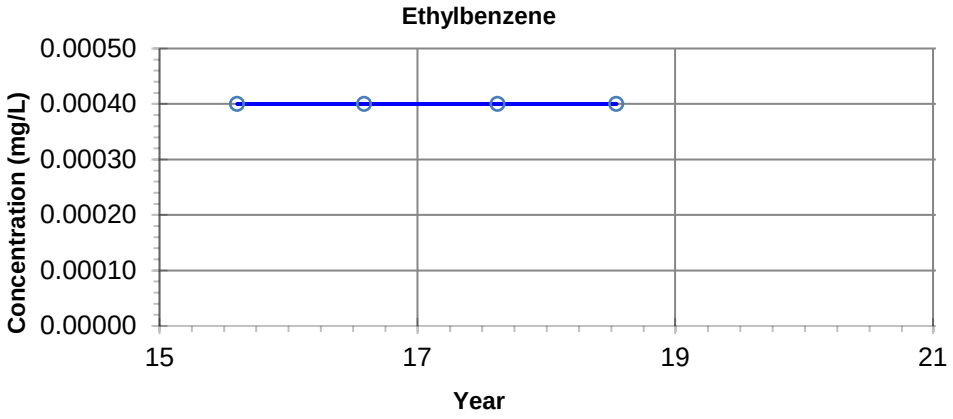

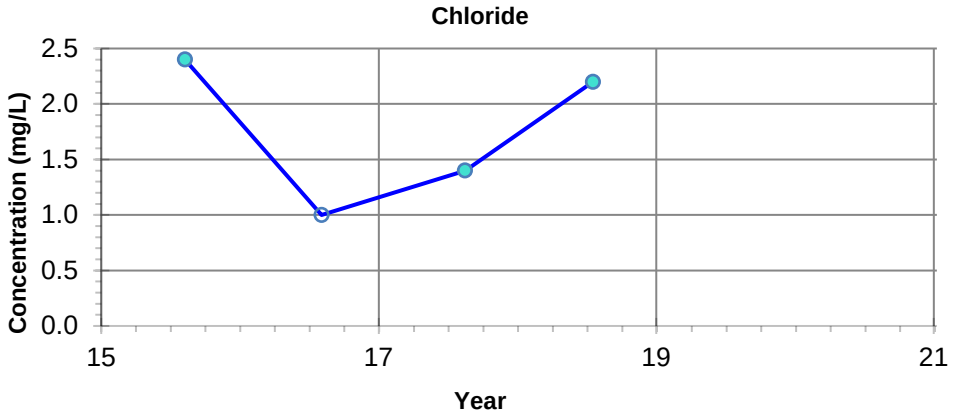

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2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS-13-9-3

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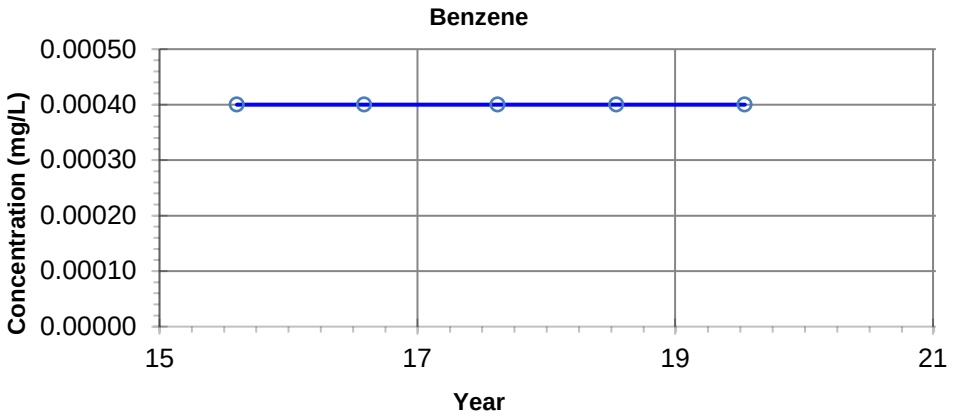

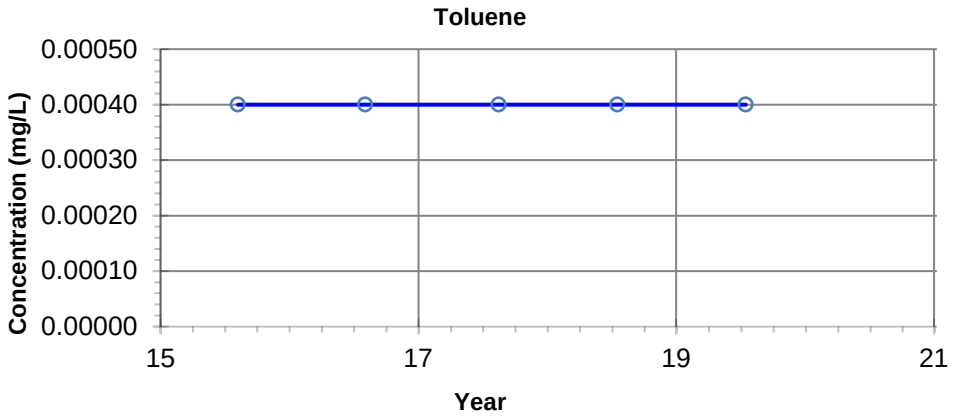

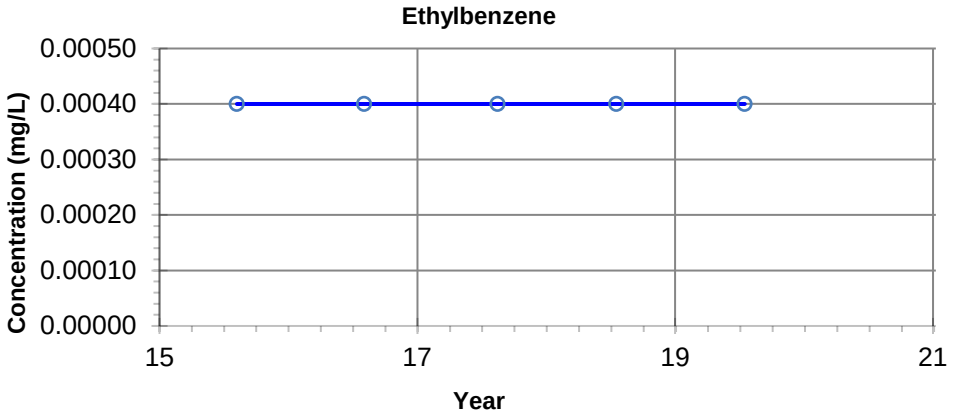

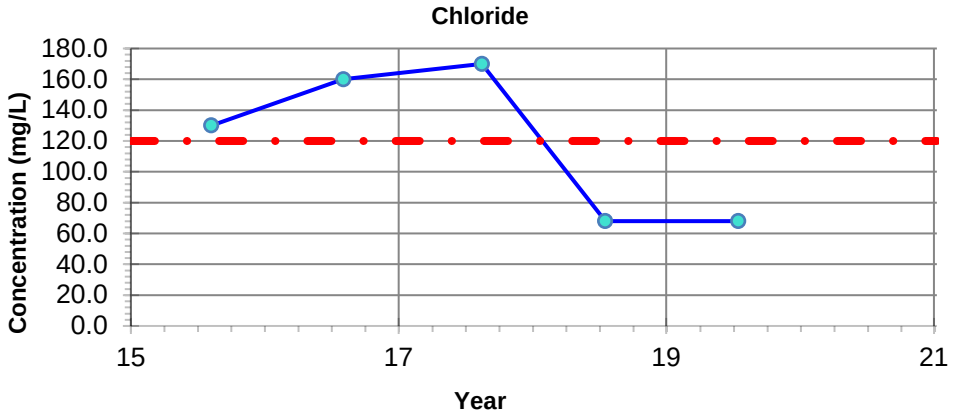

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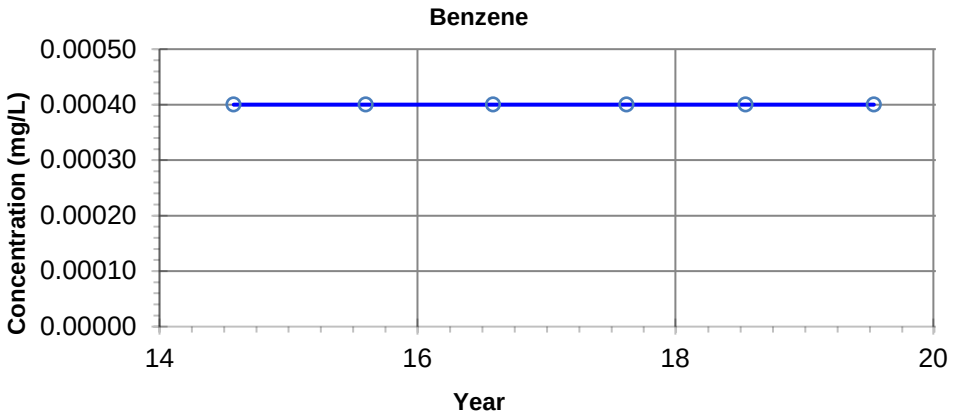

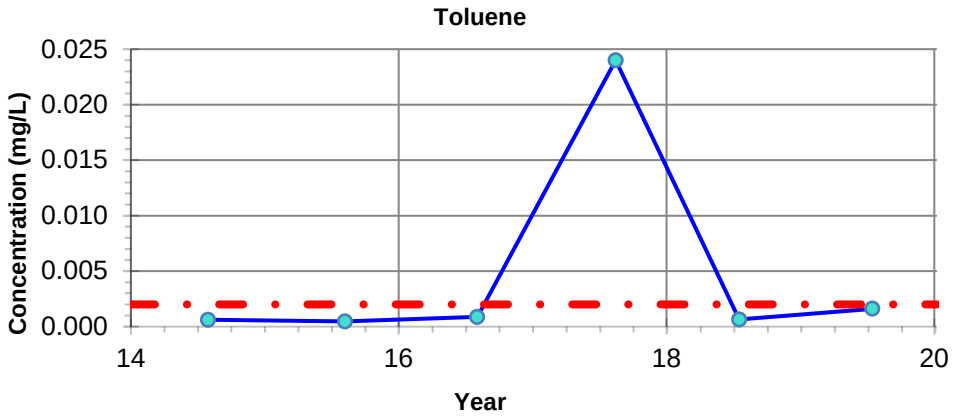

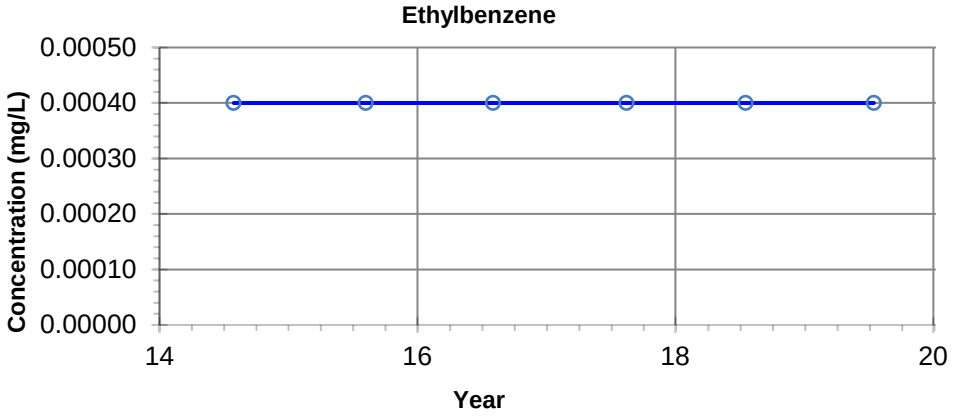

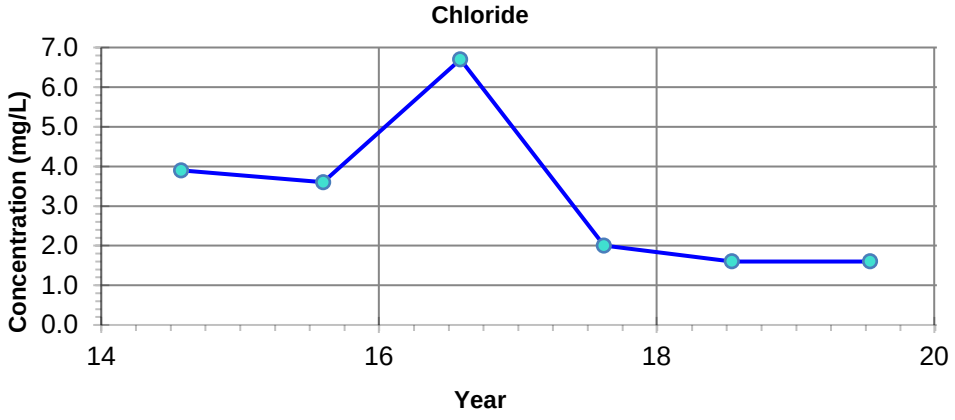

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS-14-2-3

26-Mar-2020 date	NA edited by	JC drawn by	NA app by

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Worley Group

PROJECT NUMBER:
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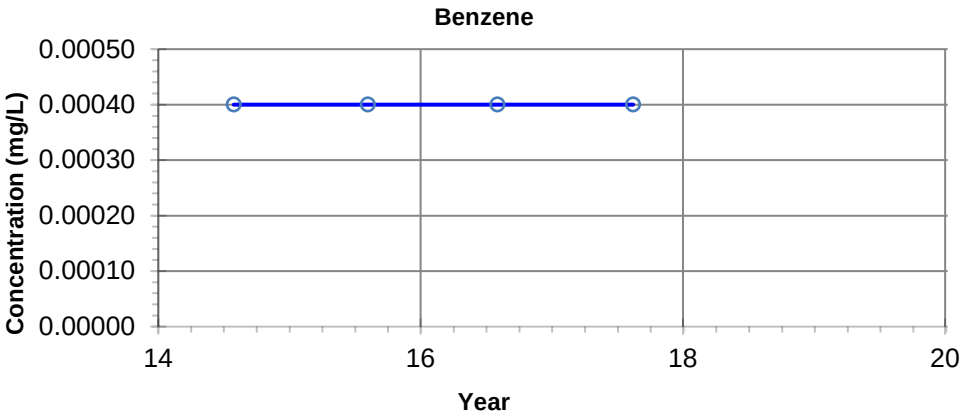

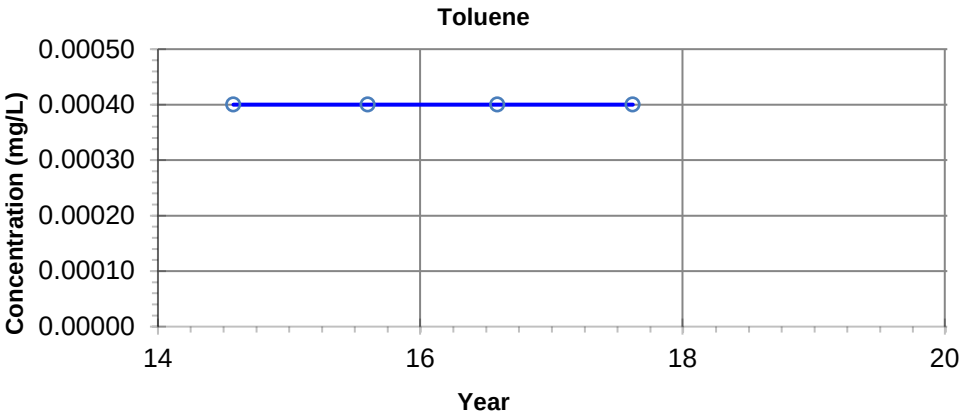

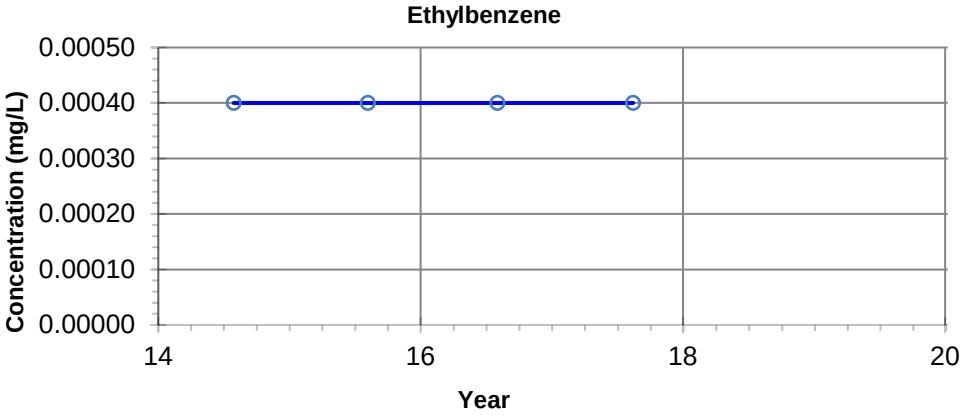

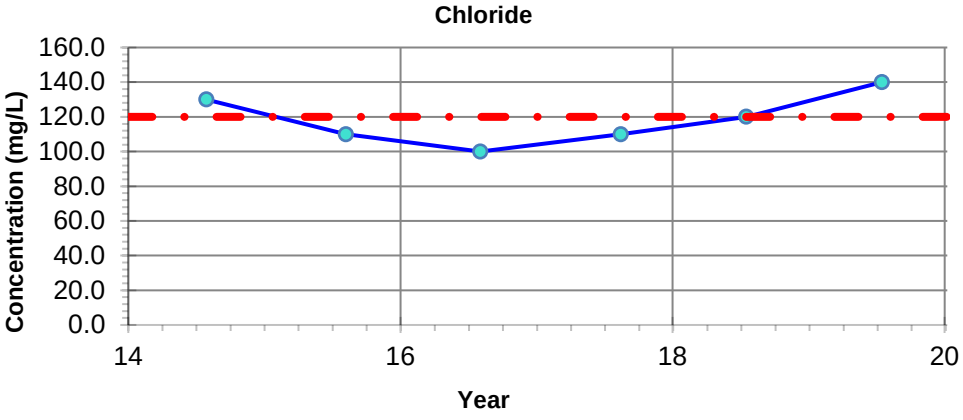

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GUIDELINE:
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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: MLS-14-5-4

26-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

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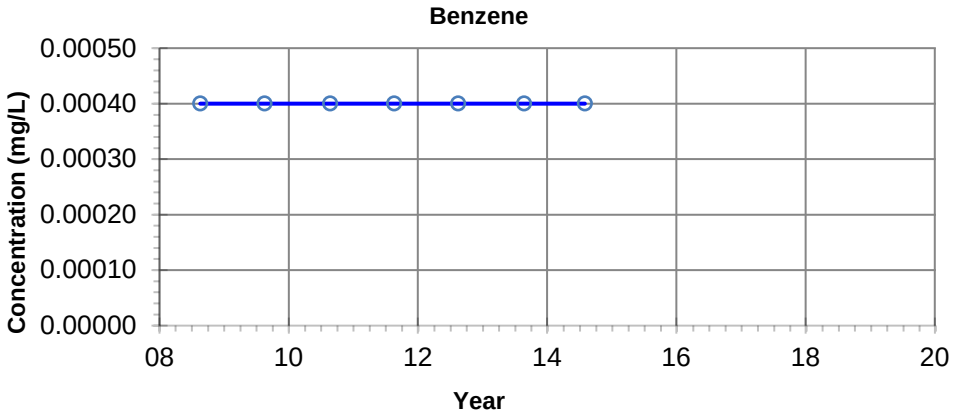

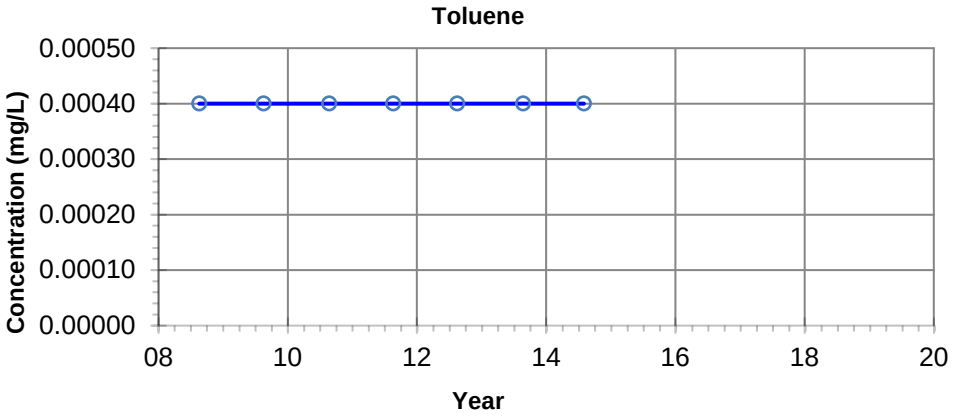

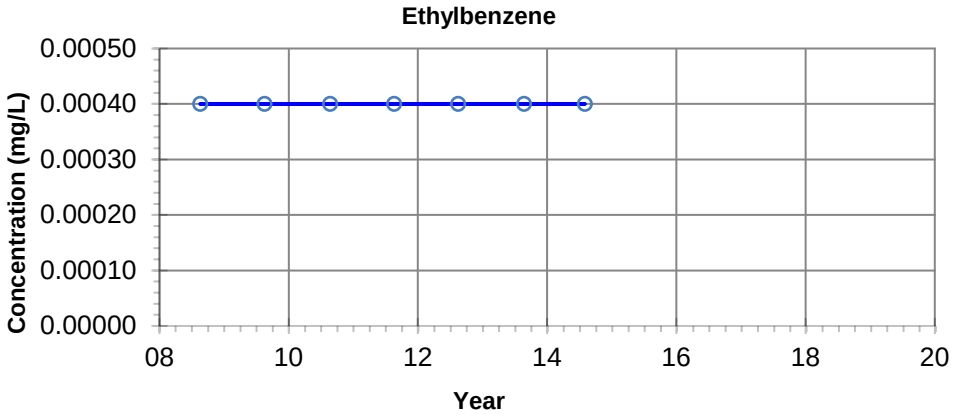

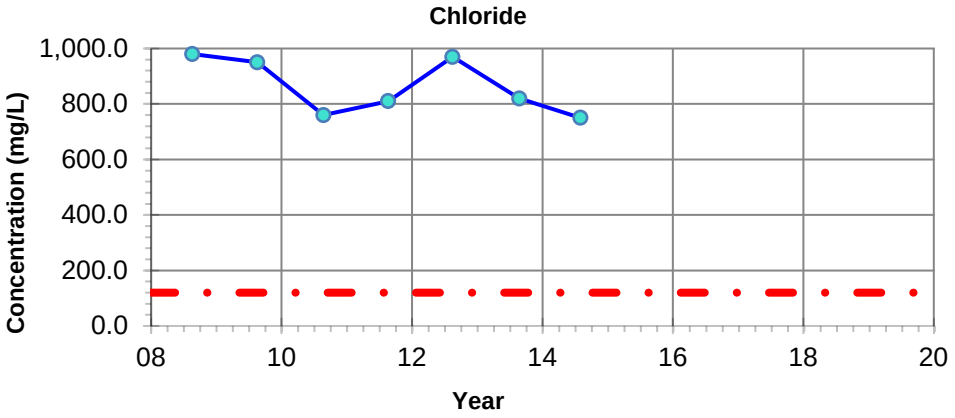

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI 08-3-2

27-Mar-2020 date	NA edited by	JC drawn by	NA app by

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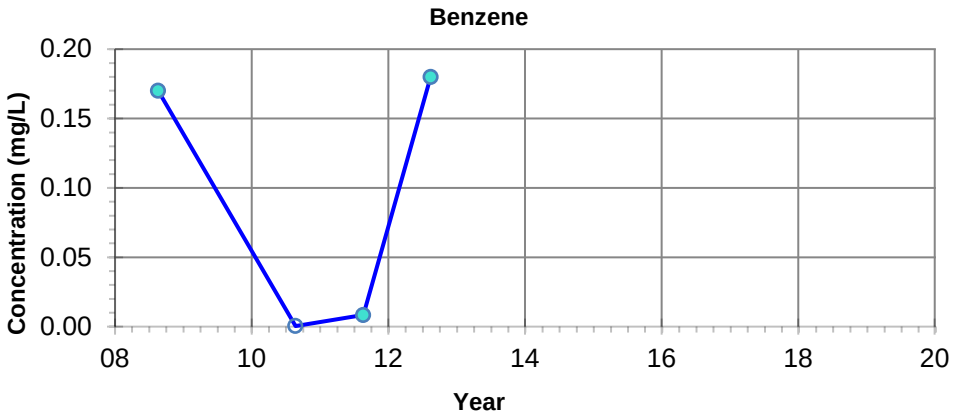

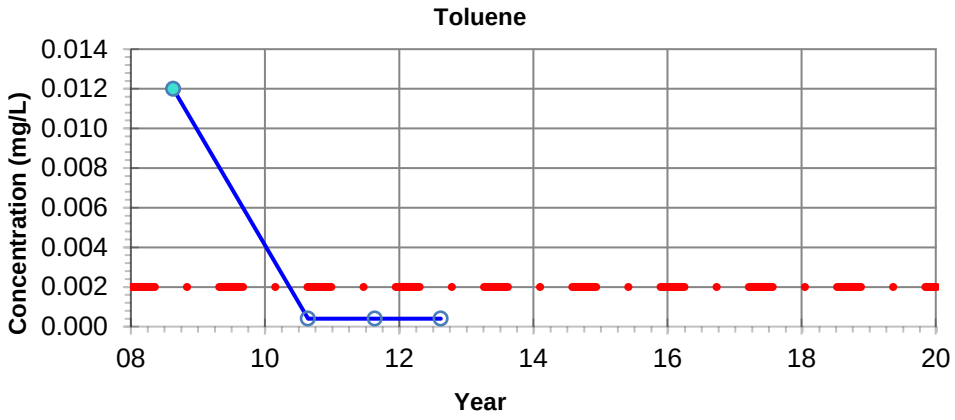

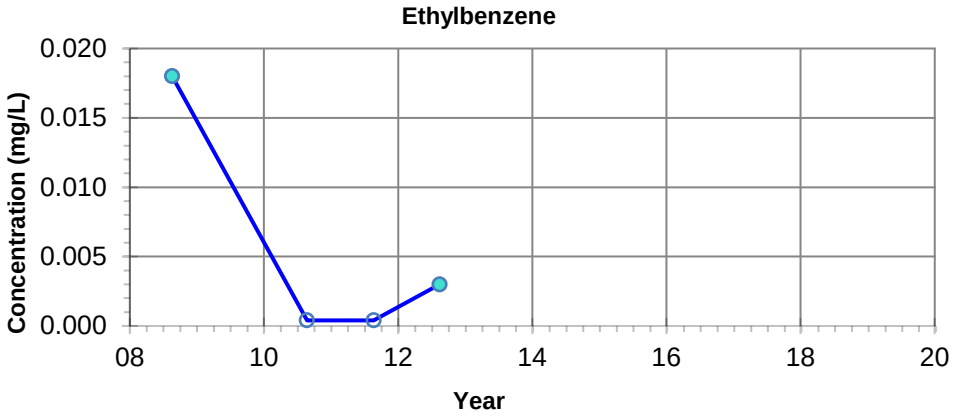

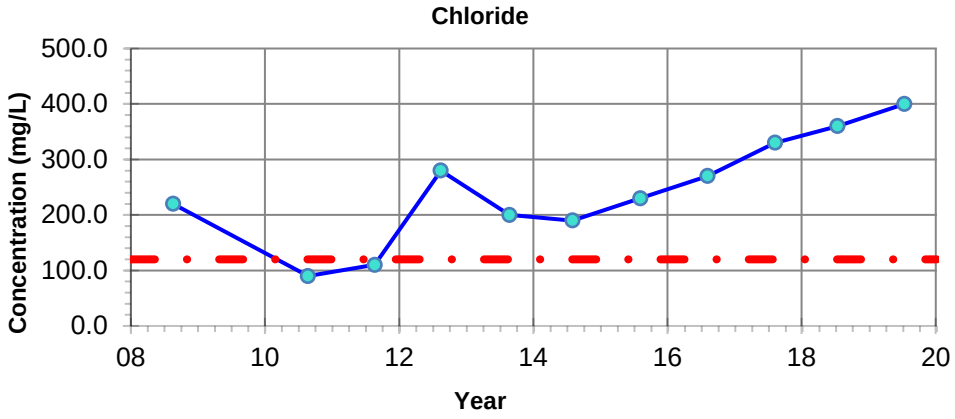

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI 08-6-4

27-Mar-2020 date	NA edited by	JC drawn by	NA app by

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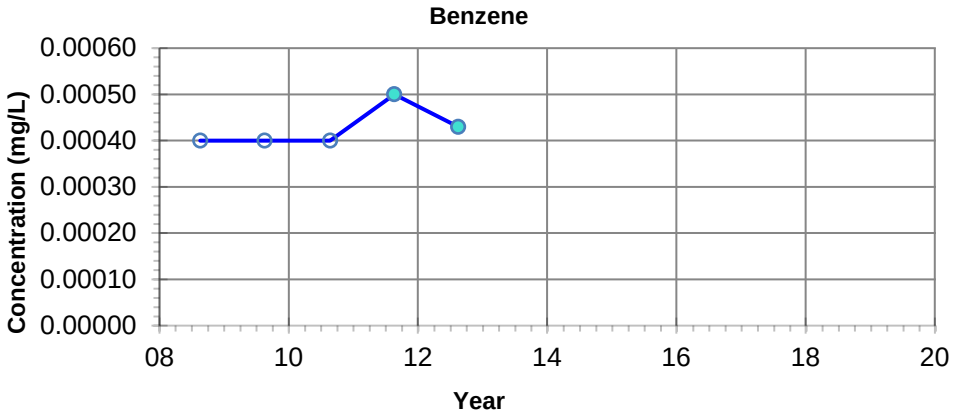

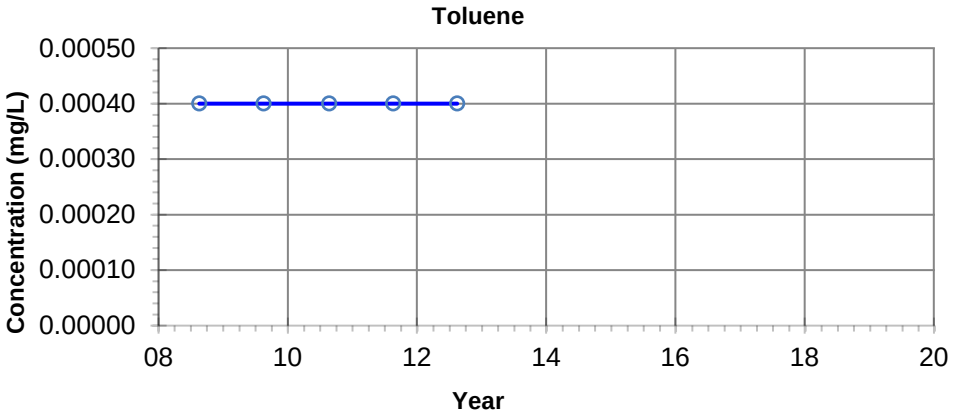

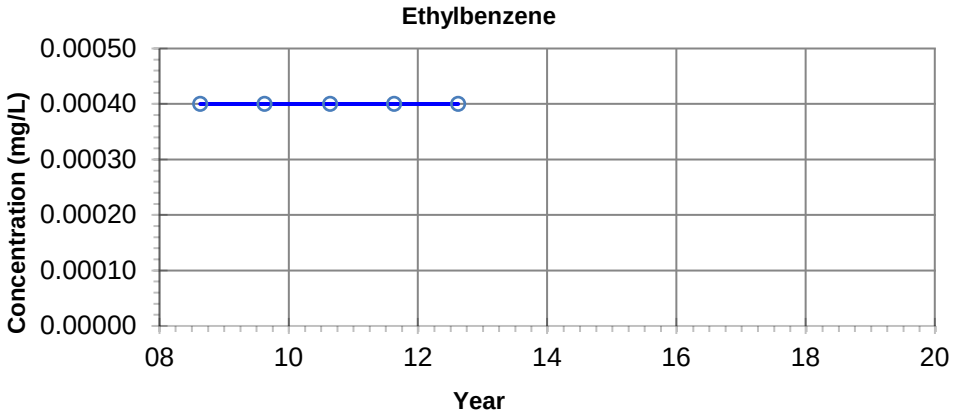

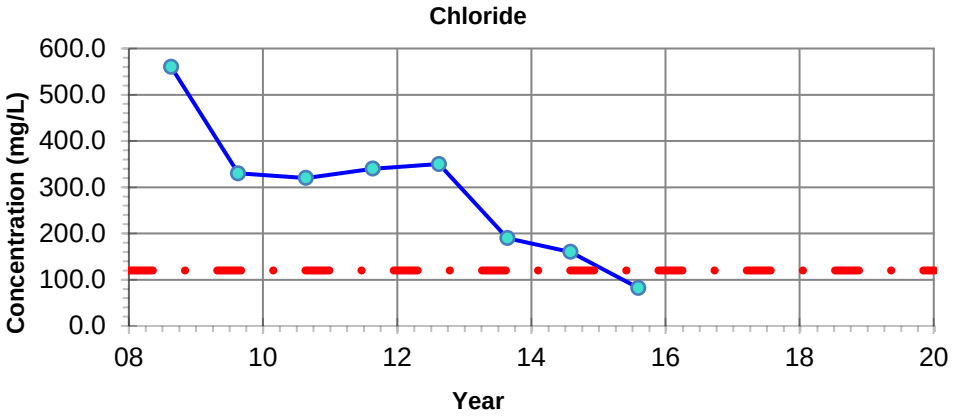

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI 08-7-2

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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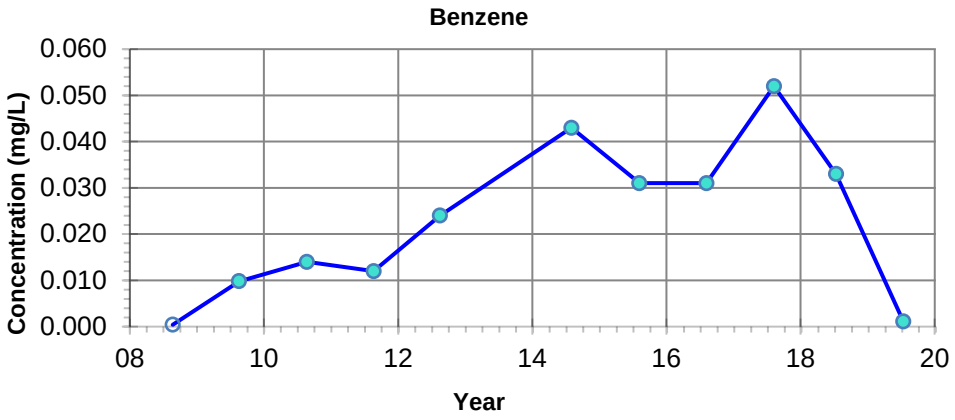

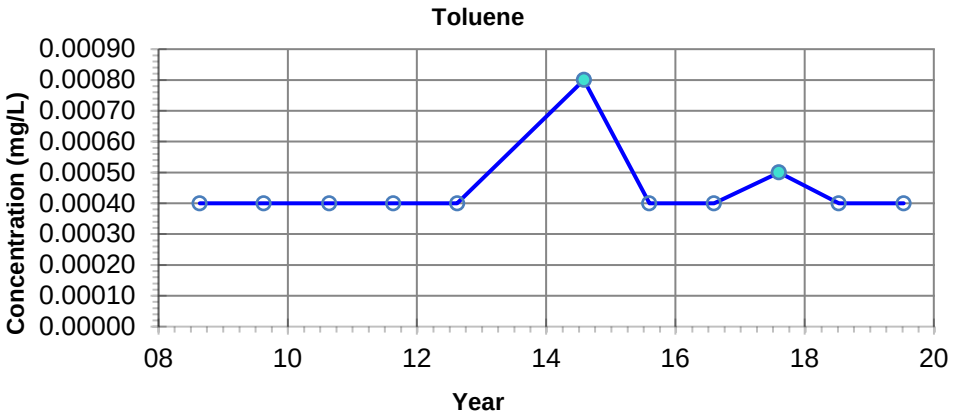

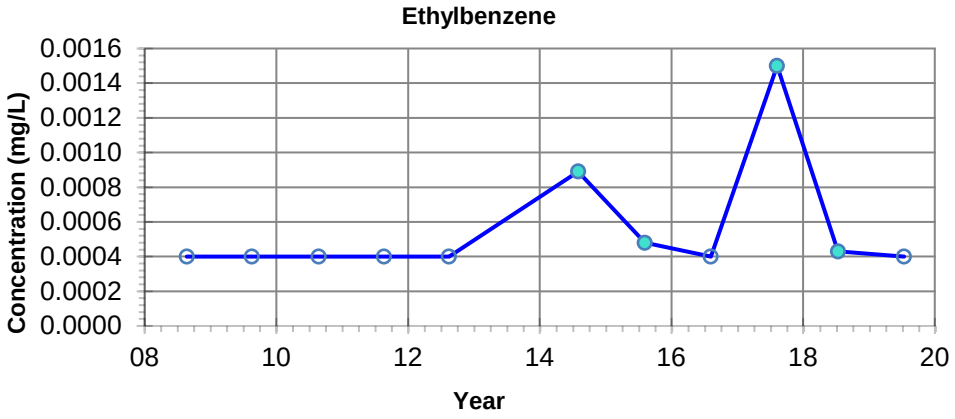

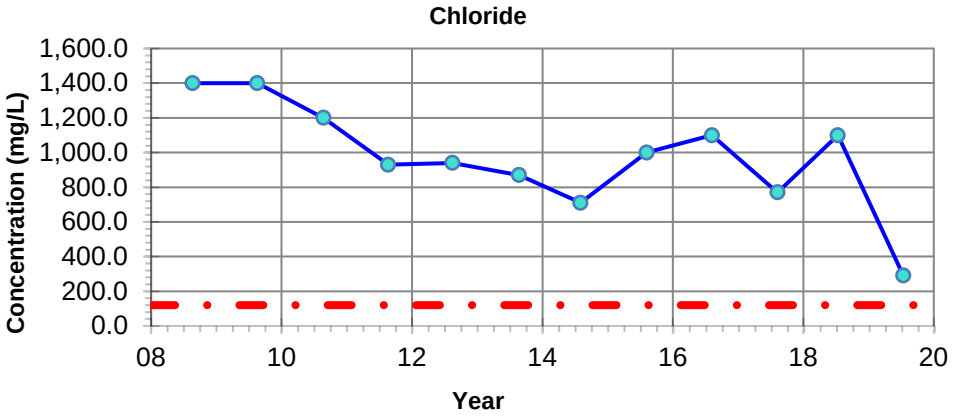

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI 08-8-4

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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PROJECT NUMBER:
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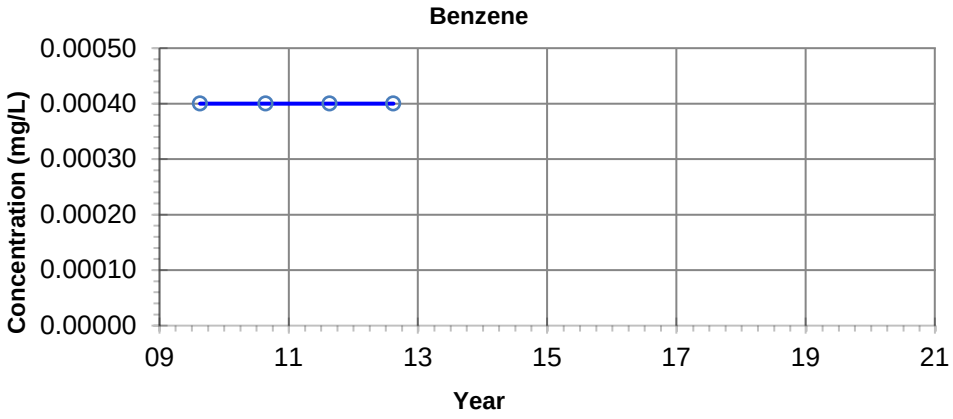

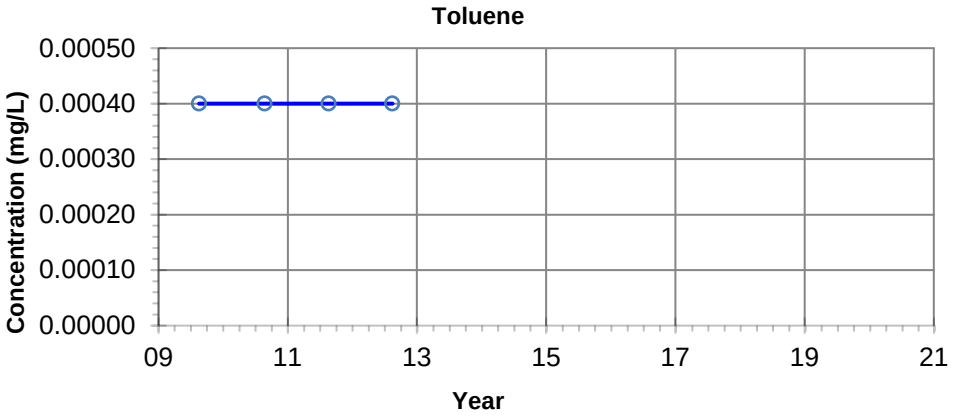

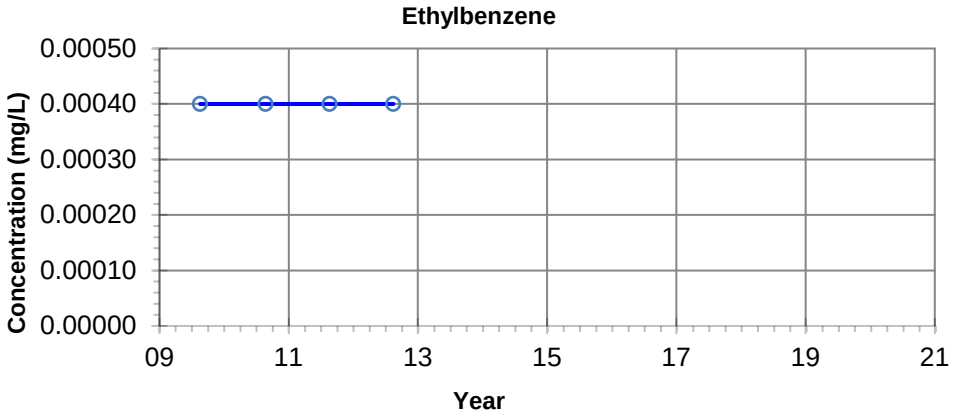

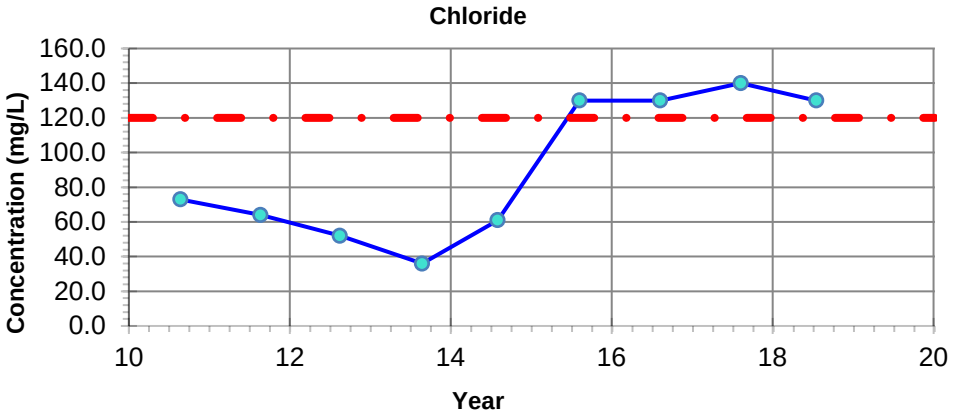

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI DP 08-5

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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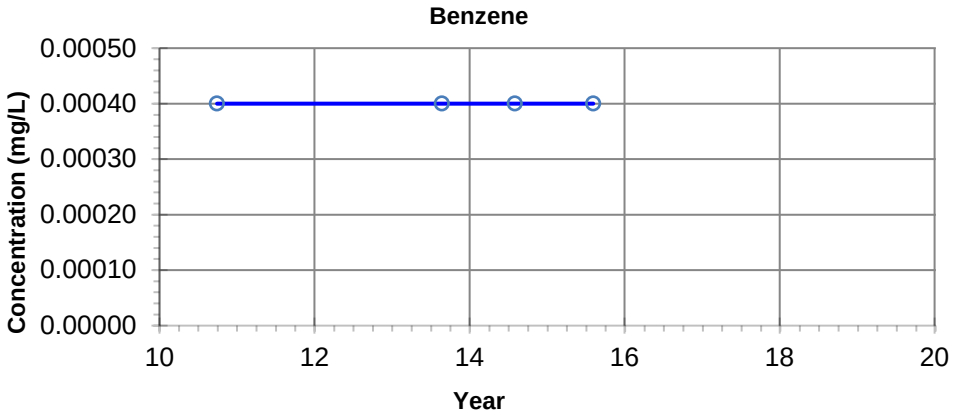

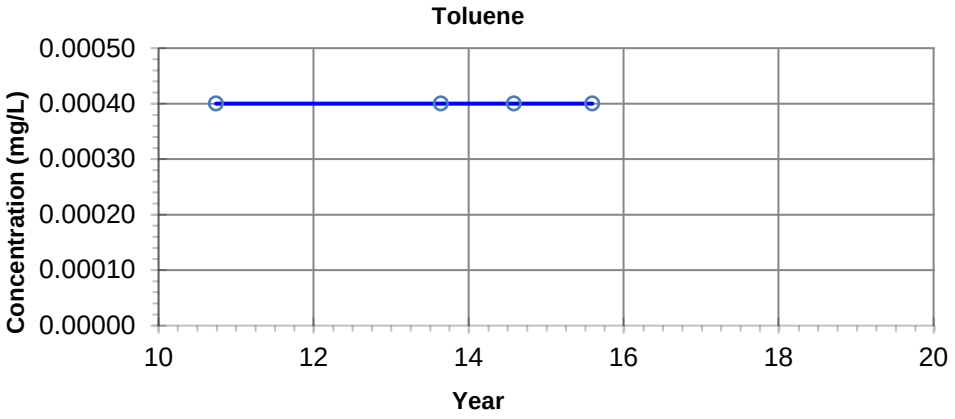

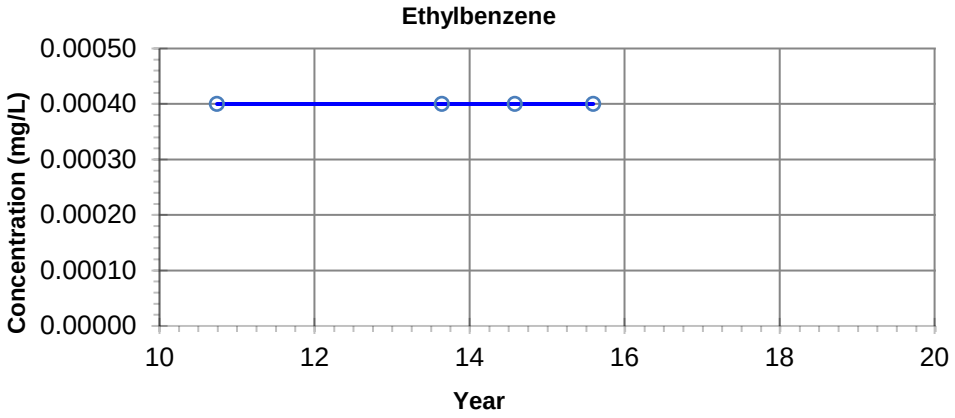

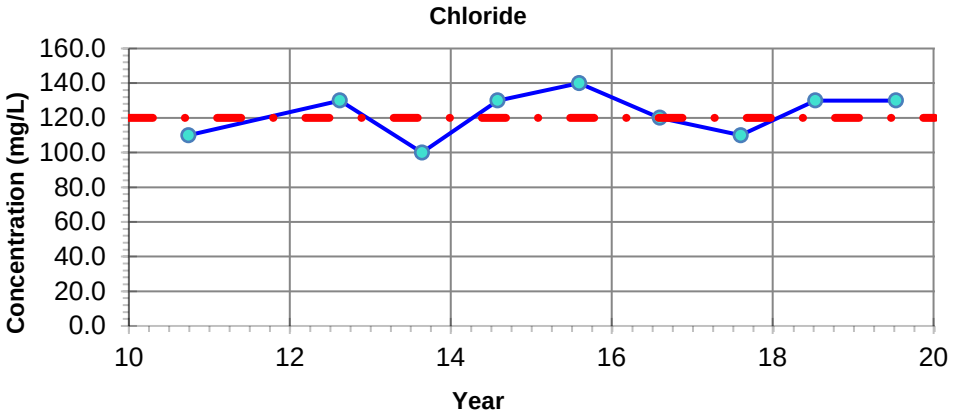

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIS-10-3-DP

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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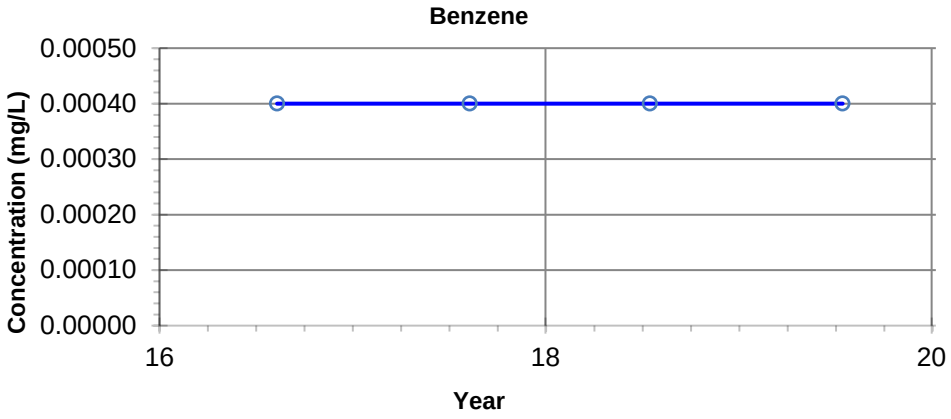

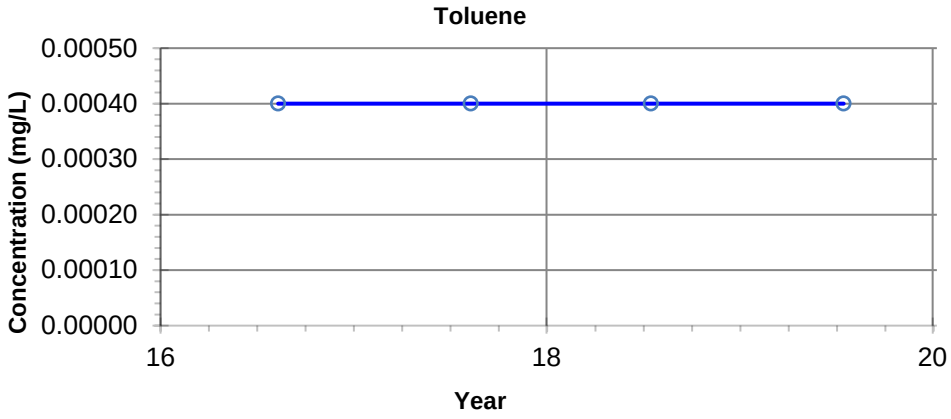

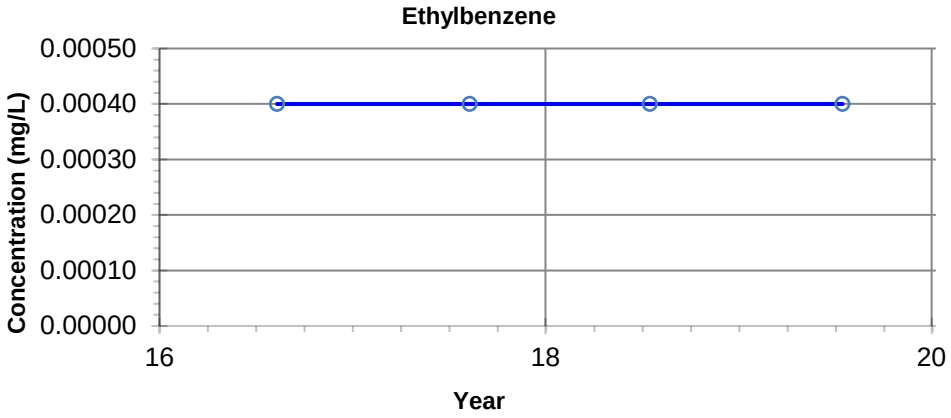

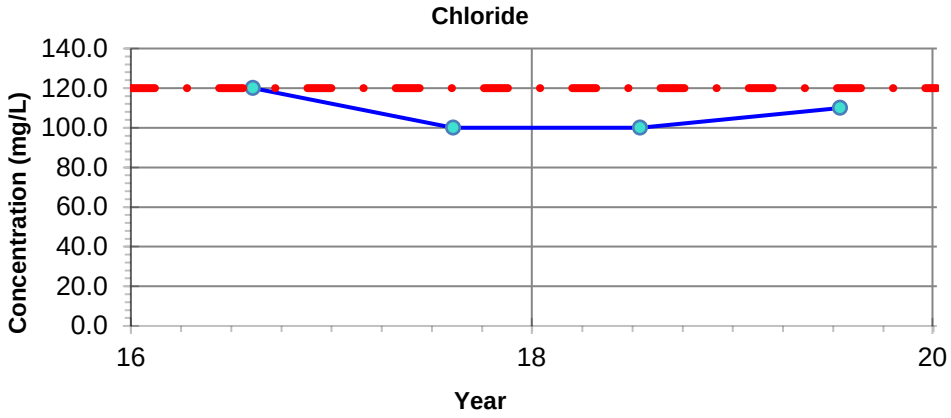

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIS-16-1-3

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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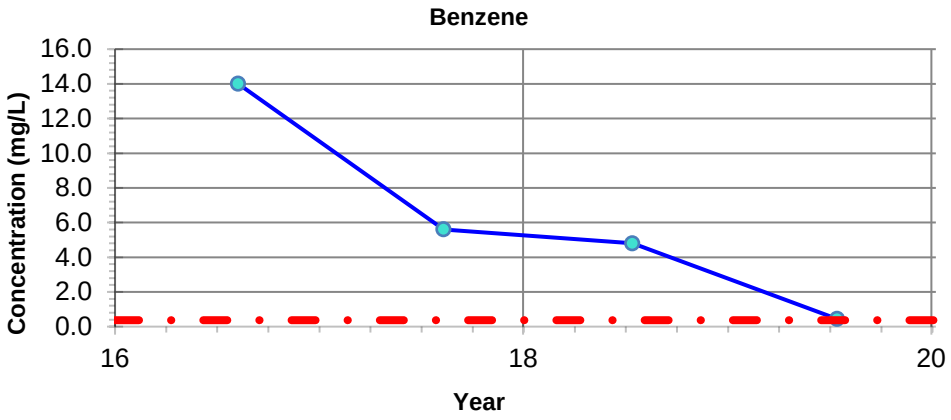

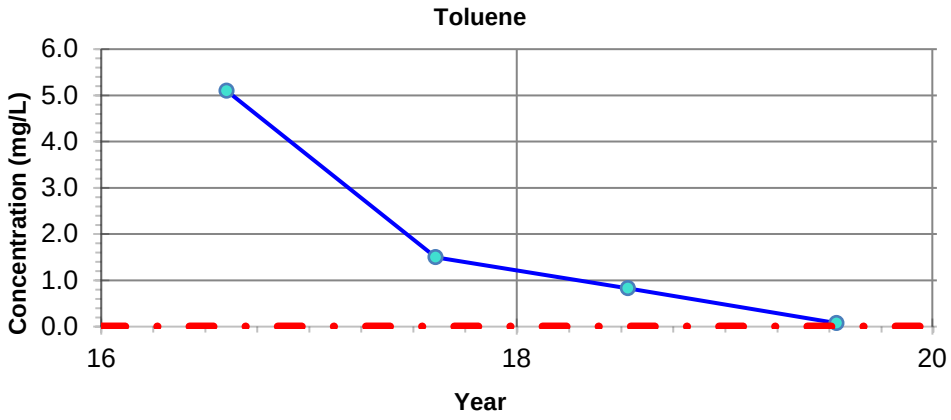

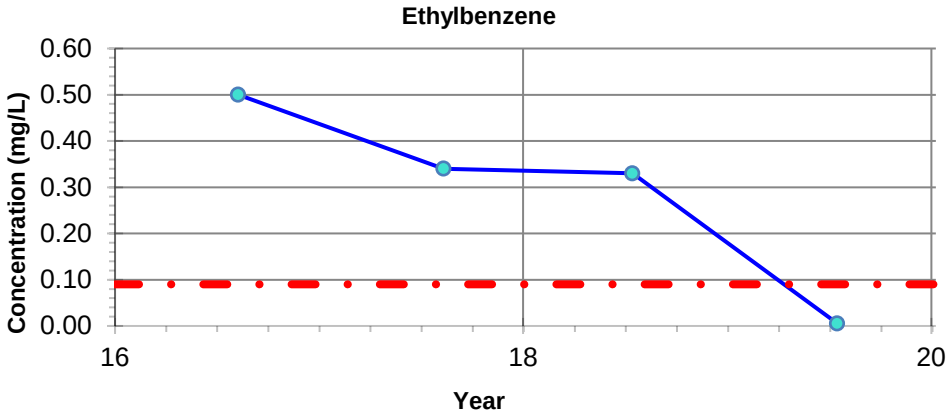

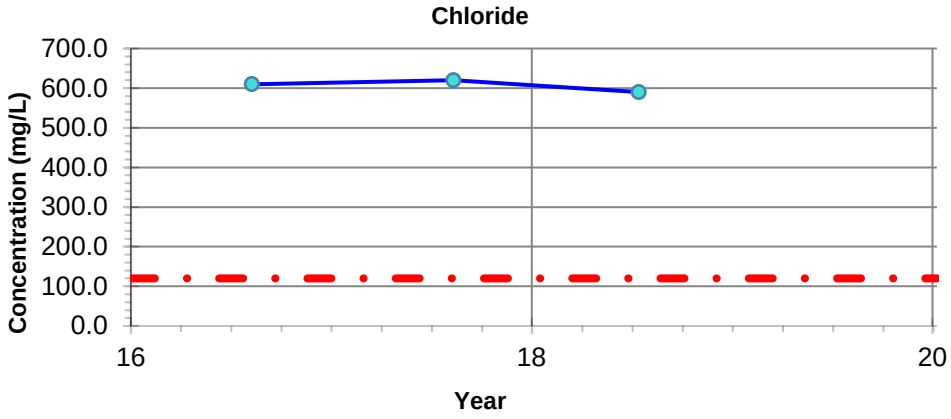

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIS-16-7-5

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

Advisian
Worley Group

PROJECT NUMBER:
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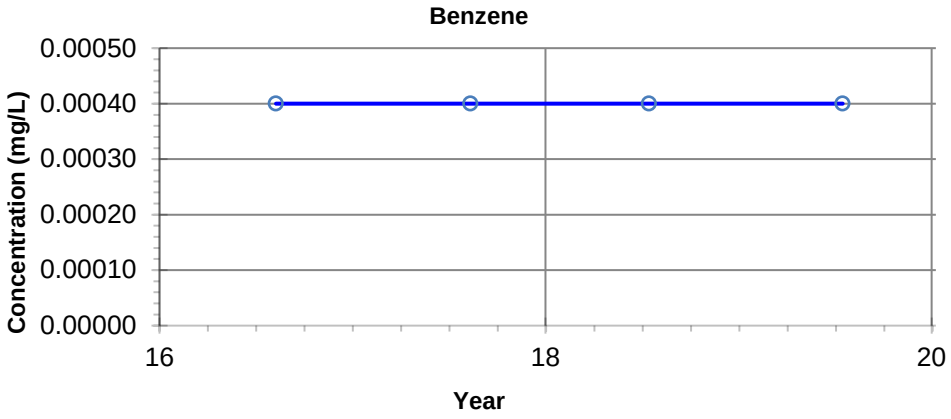

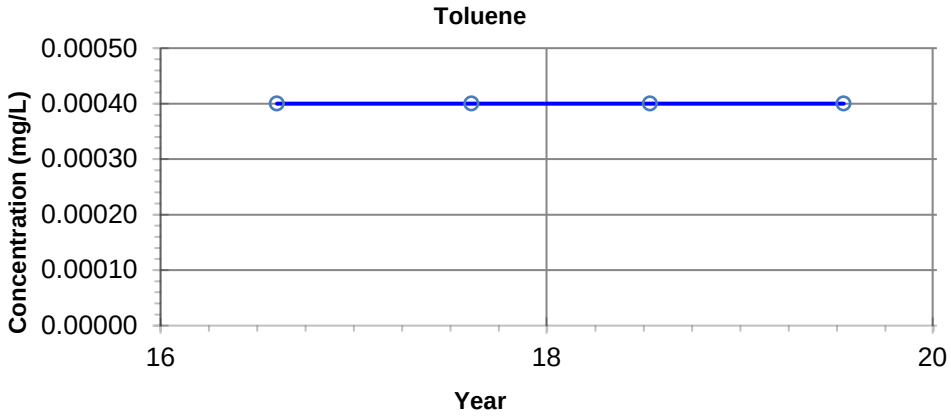

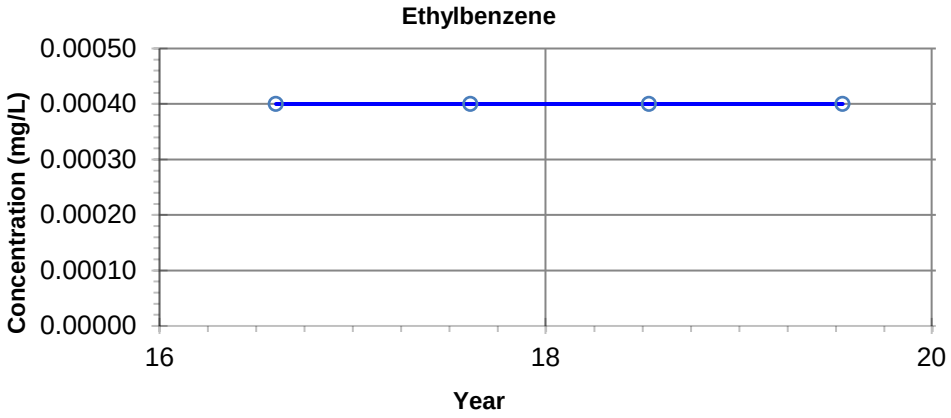

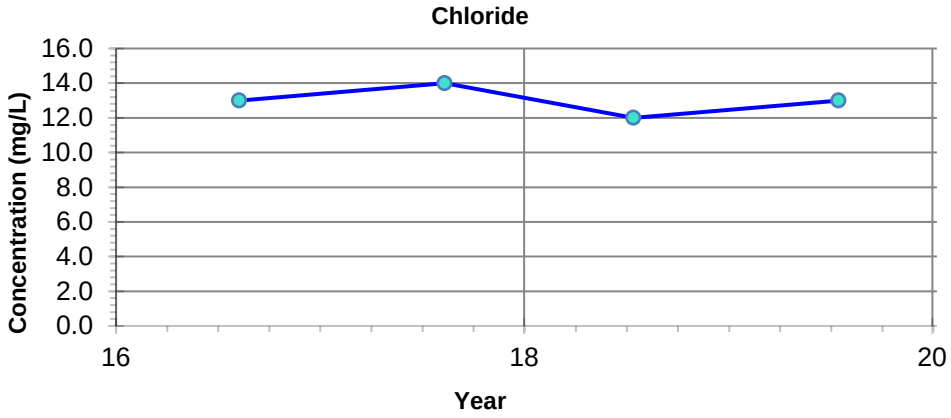

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIS-16-8-3

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

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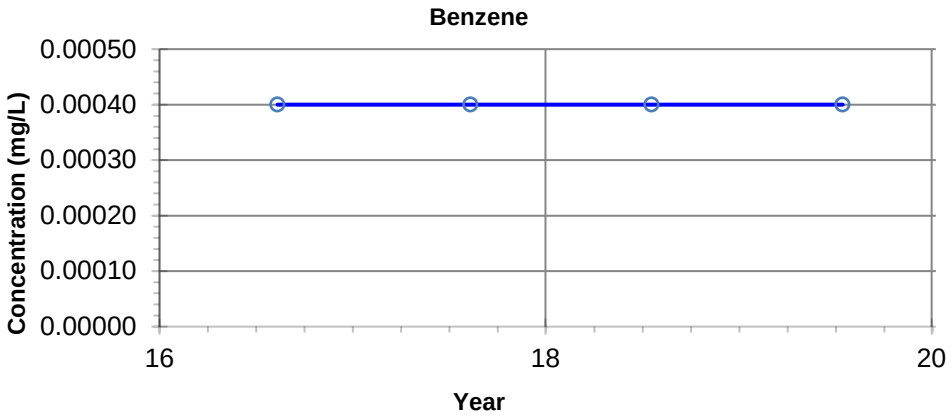

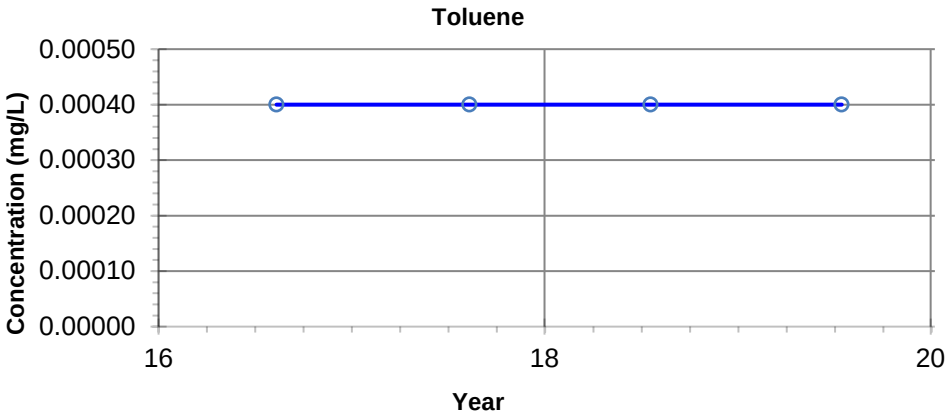

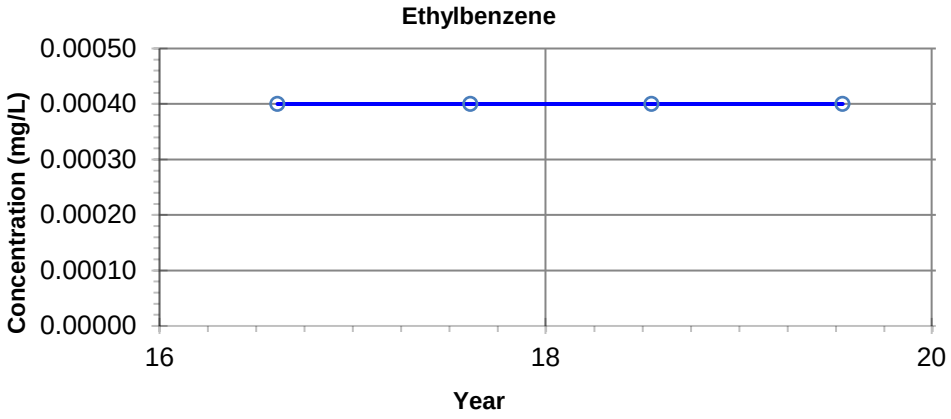

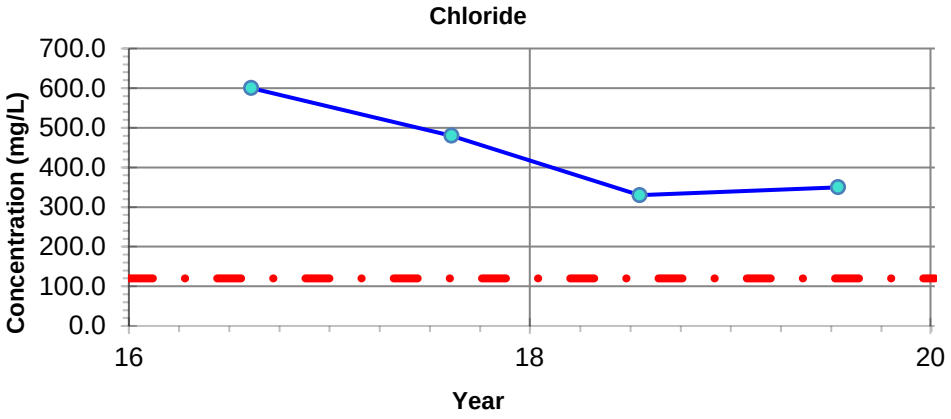

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIS-16-10-4

27-Mar-2020 date	NA edited by	JC drawn by	NA app by

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Worley Group

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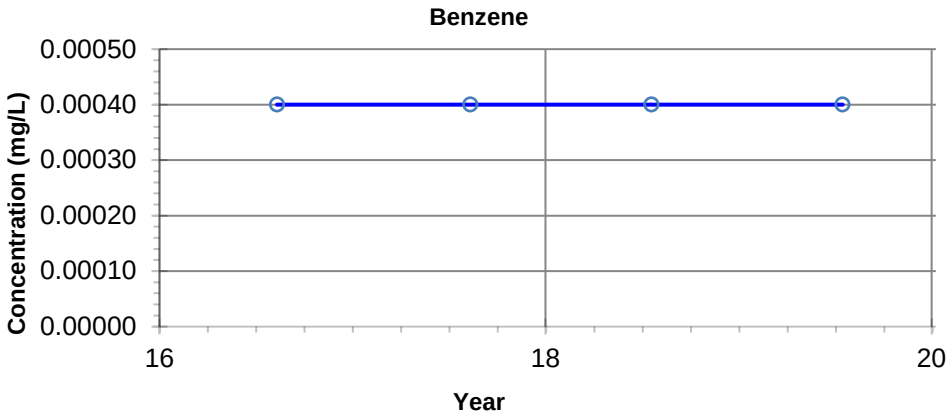

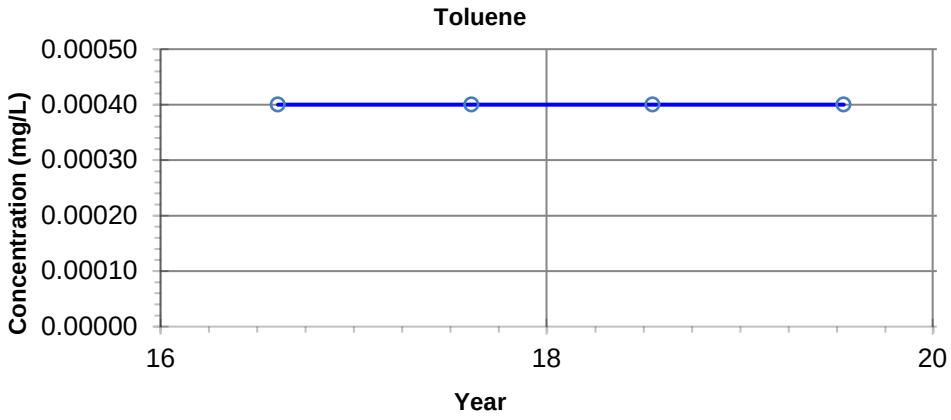

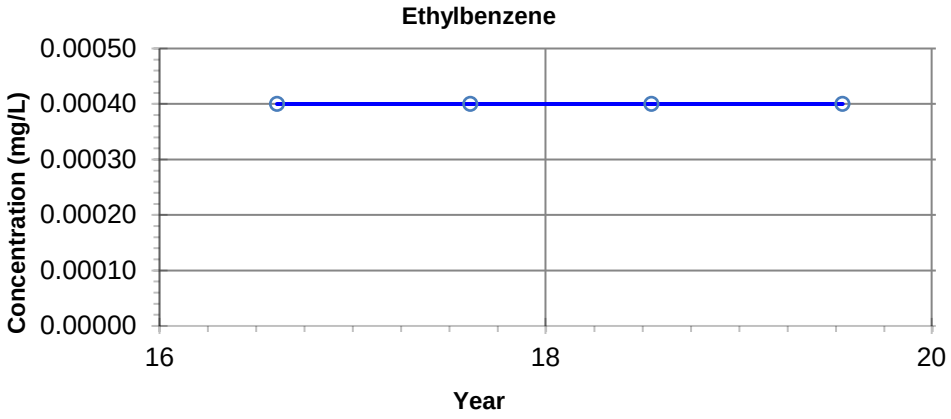

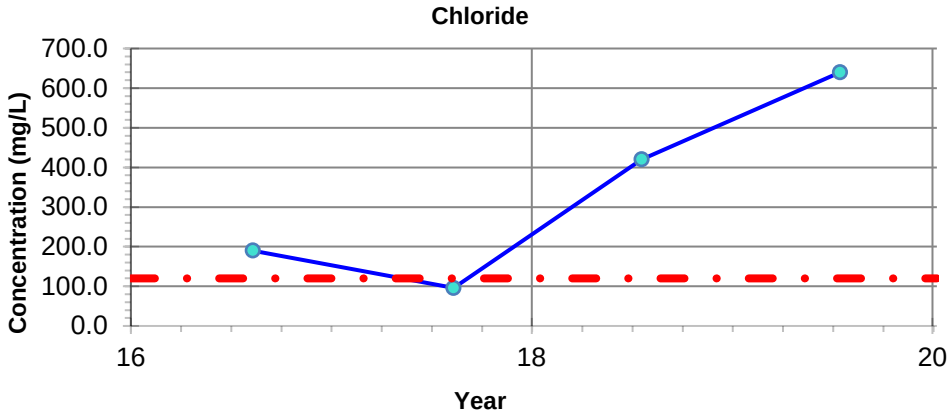

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIS-16-11-4

27-Mar-2020 date	NA edited by	JC drawn by	NA app by

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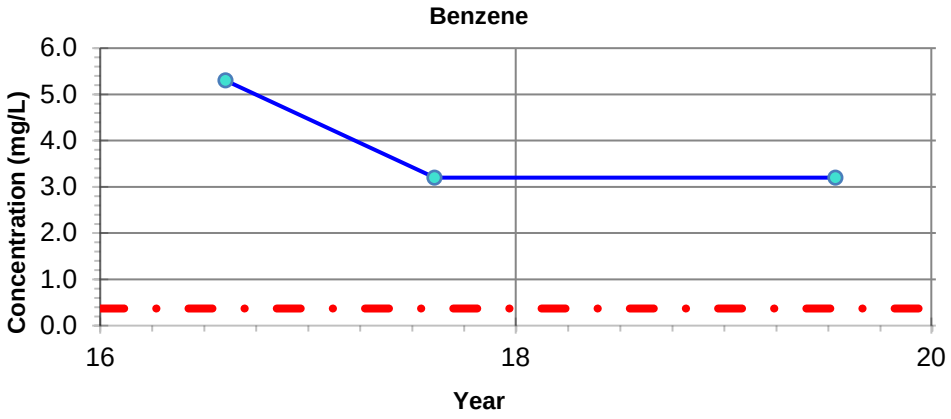

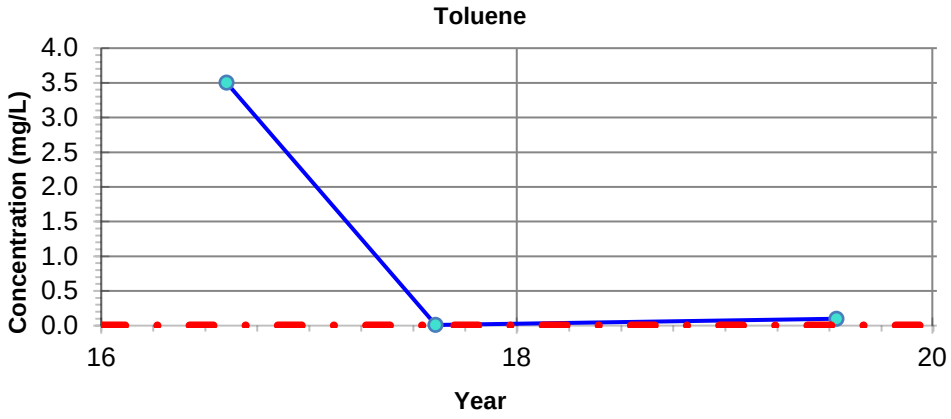

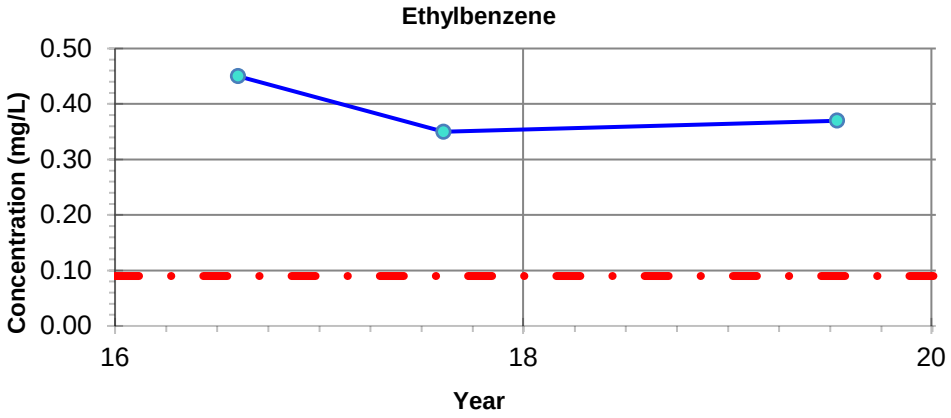

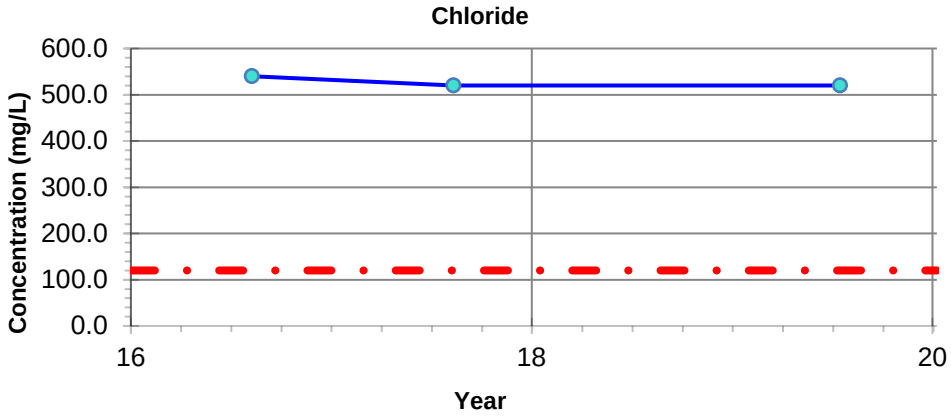

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIS-16-12-5

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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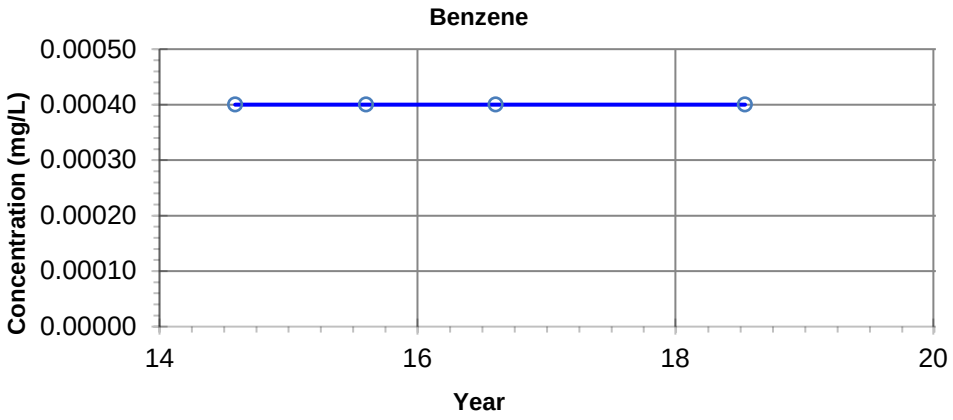

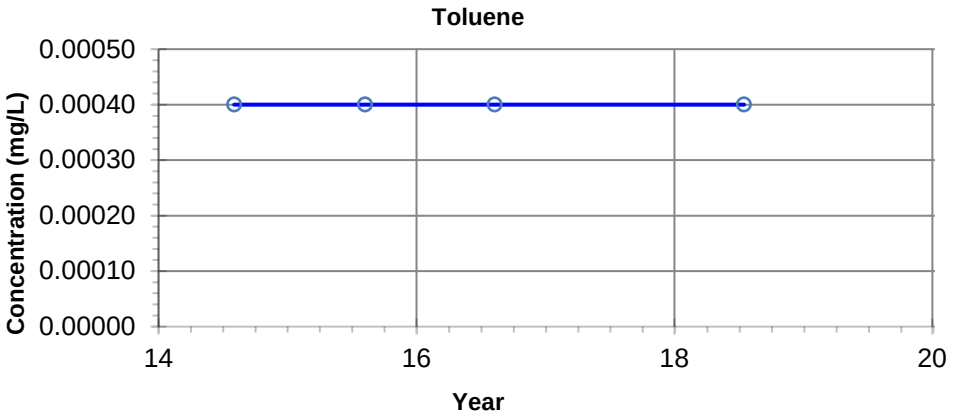

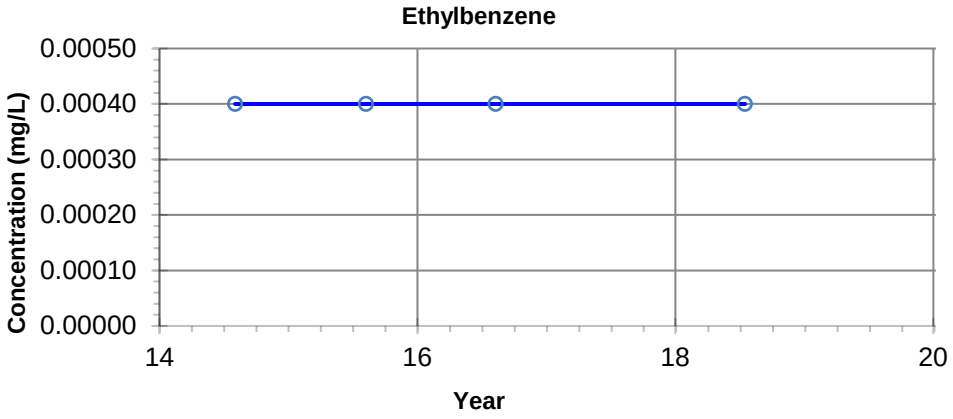

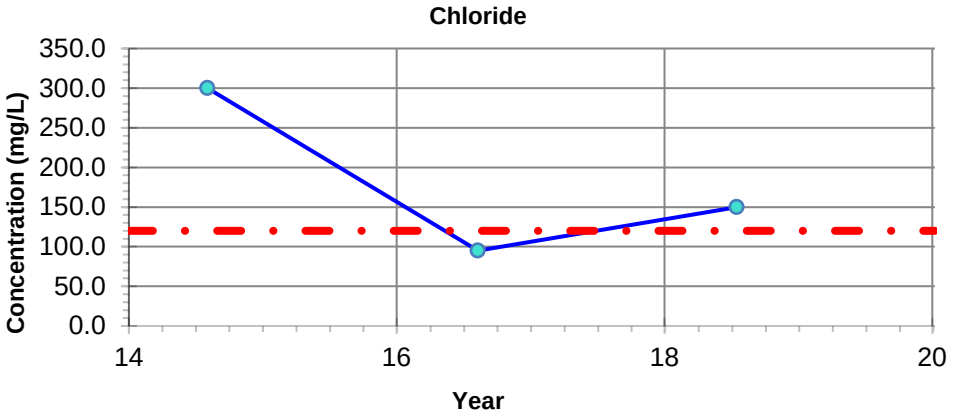

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI-13-5-2

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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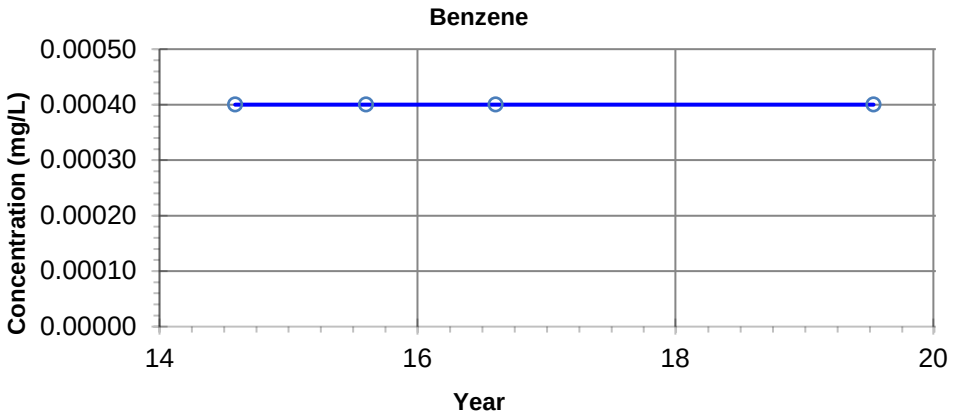

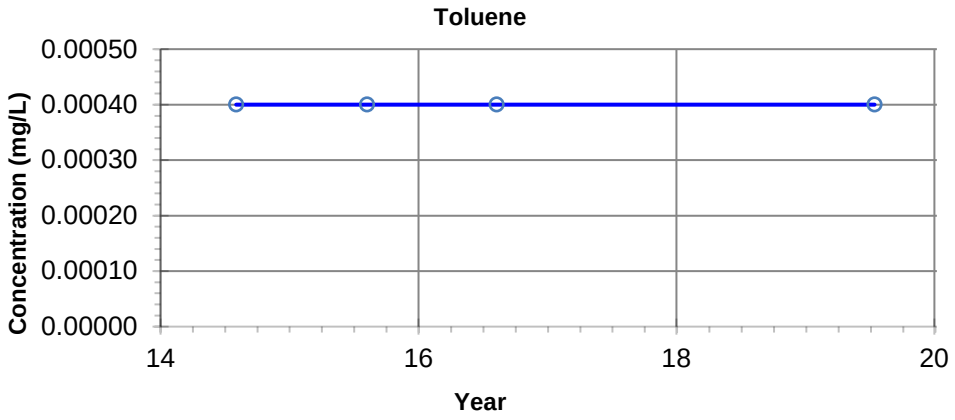

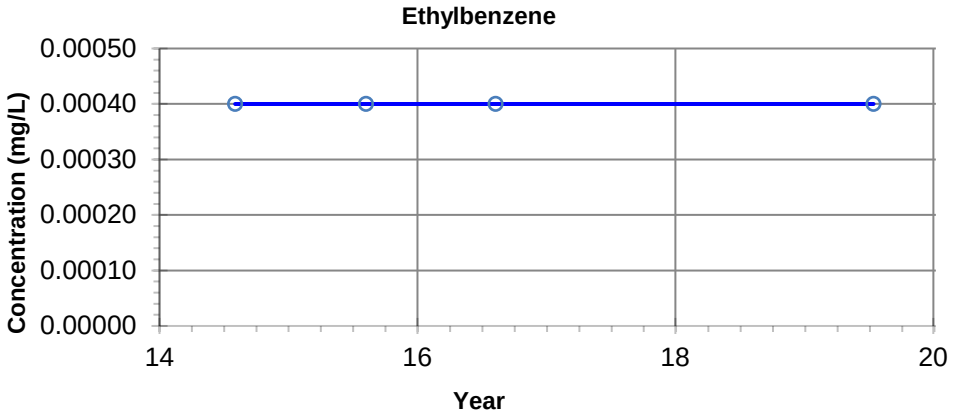

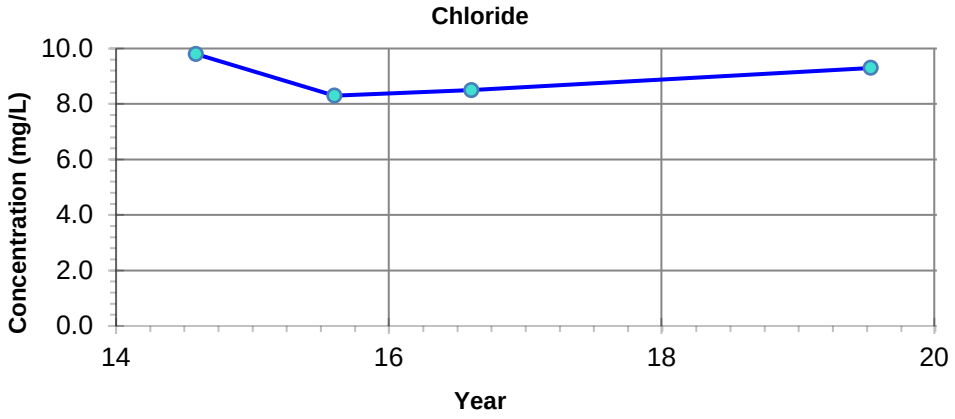

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Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI-13-6-2

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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PROJECT NUMBER:
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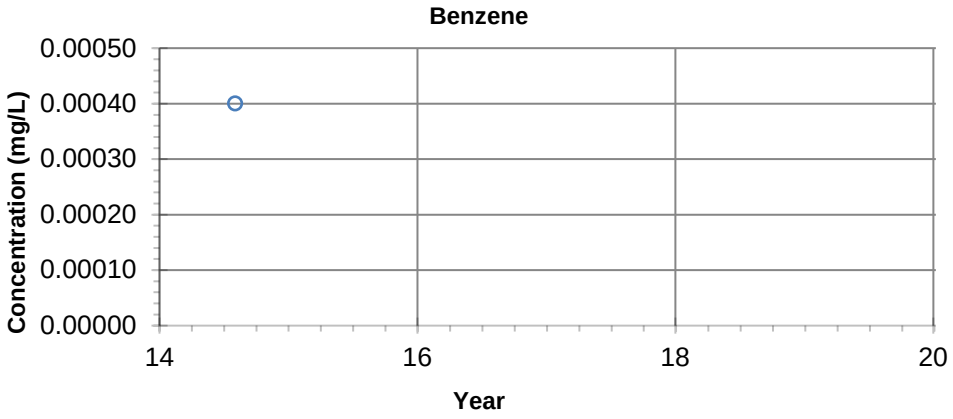

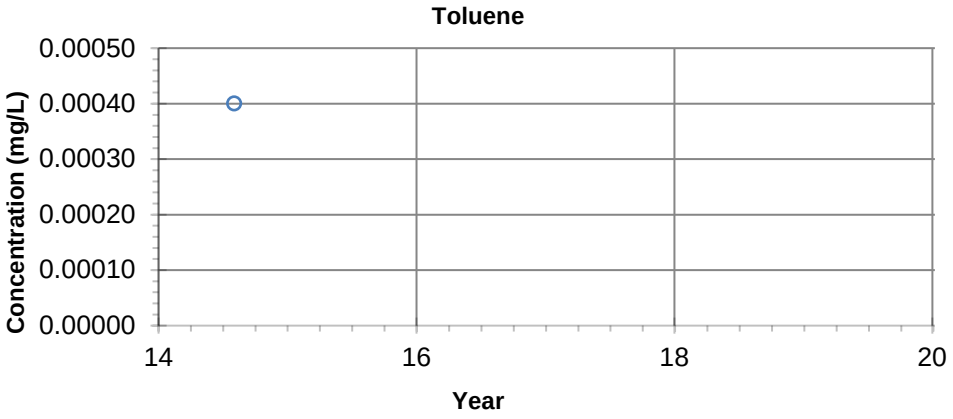

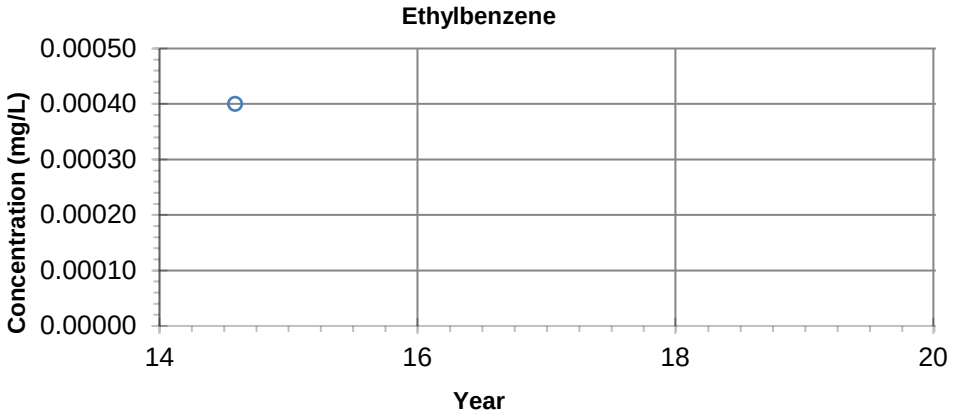

***** No Chloride Data *****

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI-13-18-3

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

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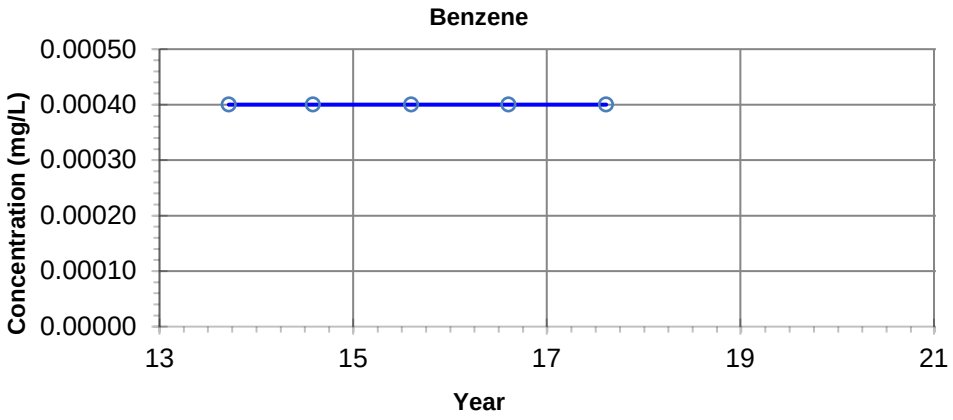

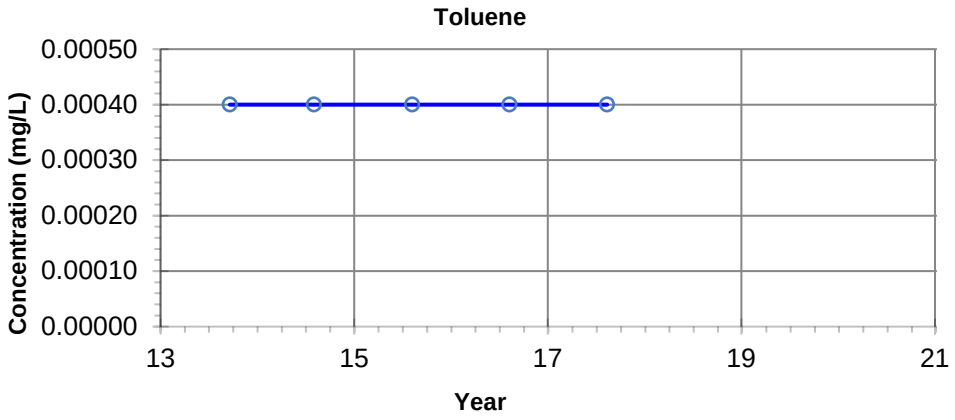

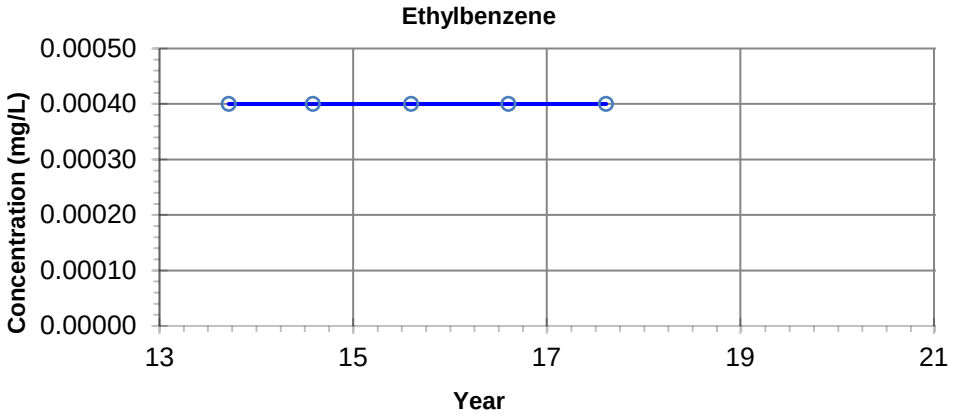

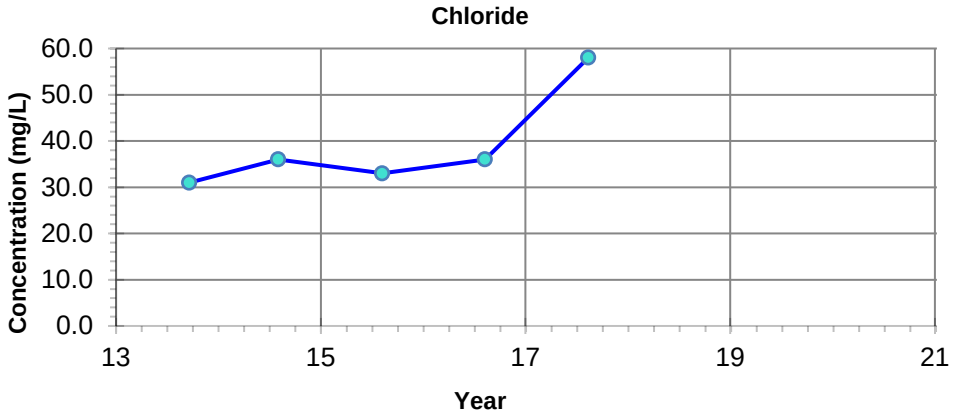

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI-13-11

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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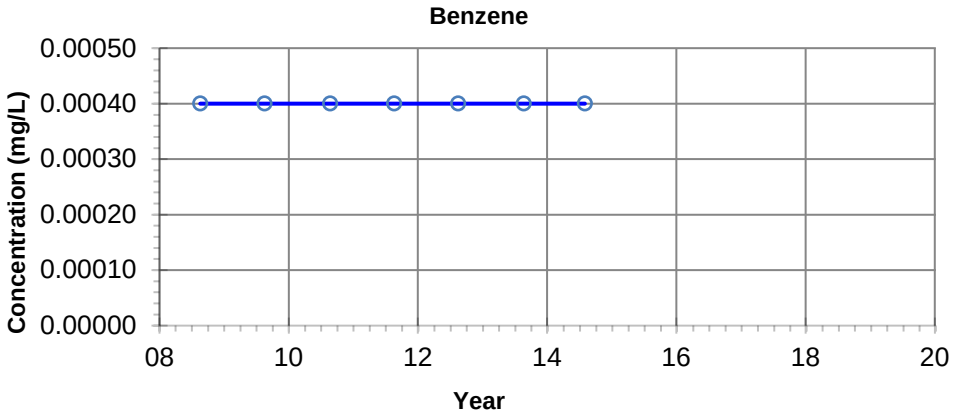

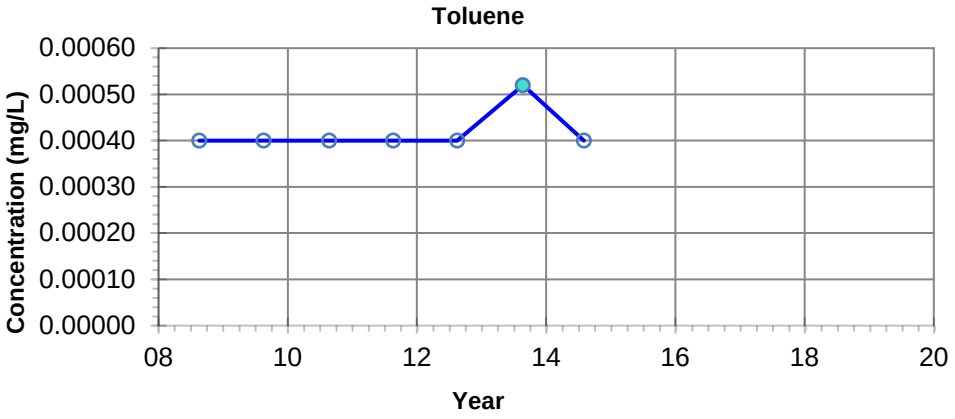

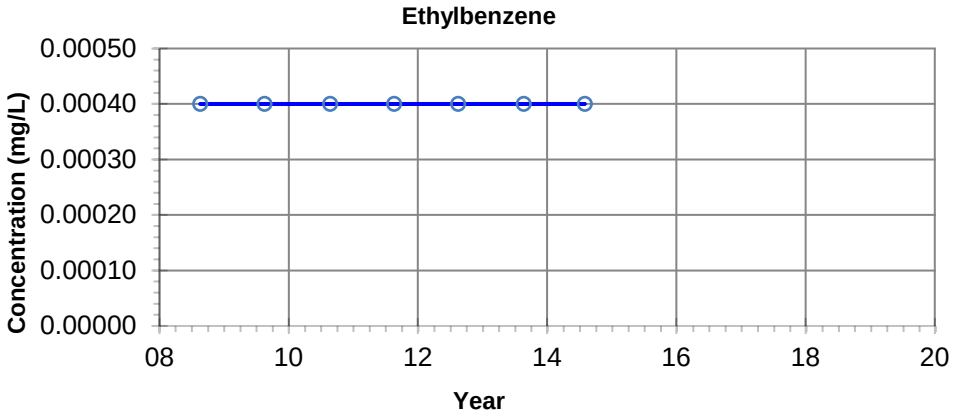

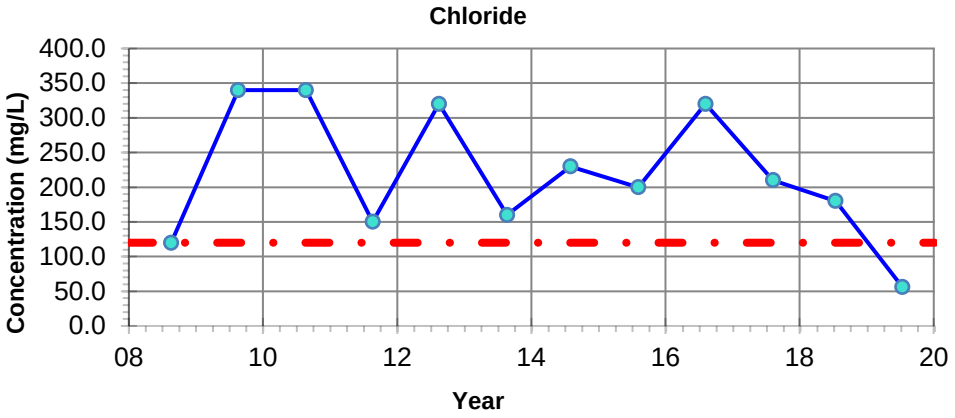

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Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI SW01

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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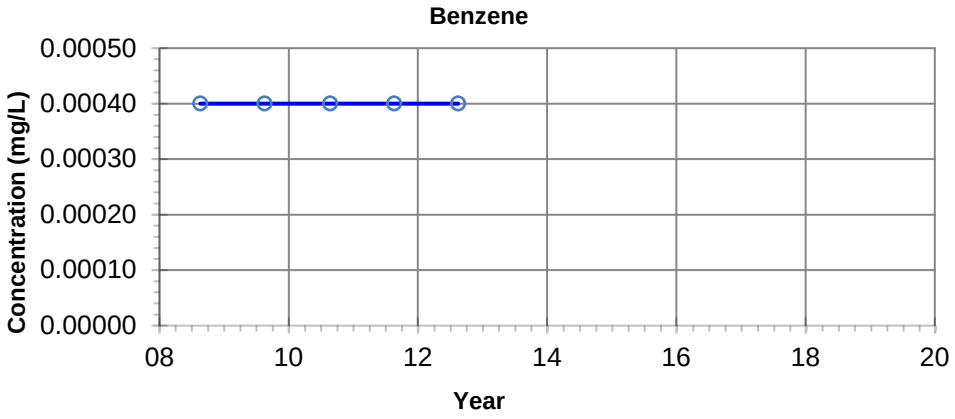

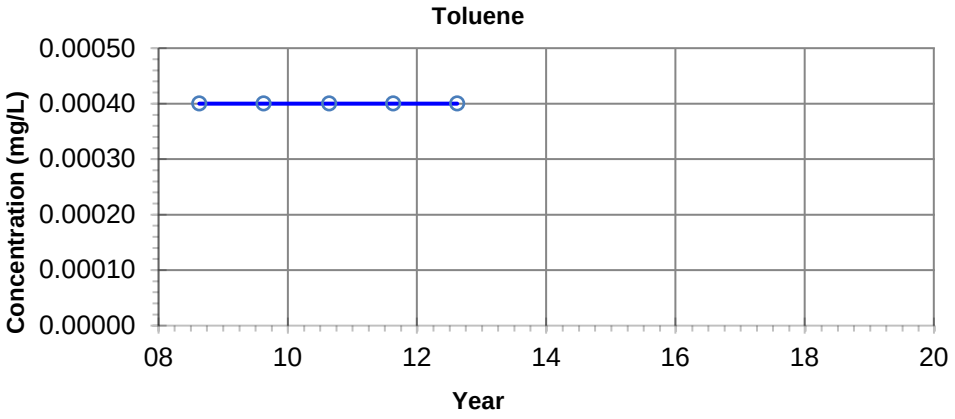

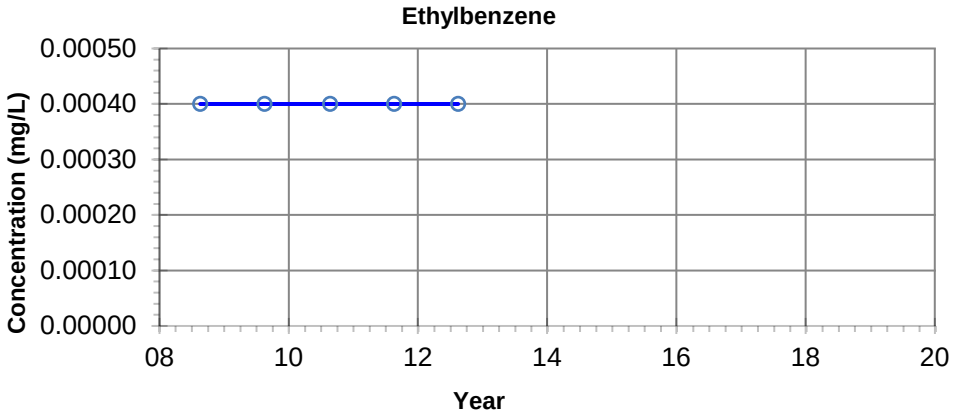

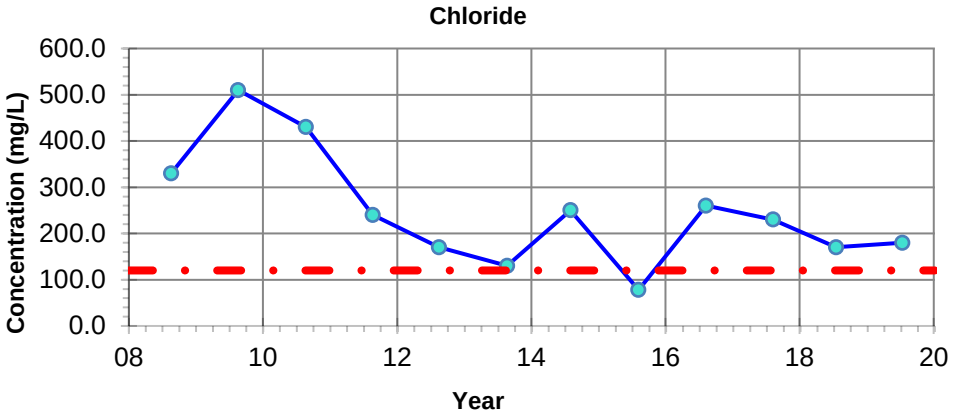

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI SW03

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

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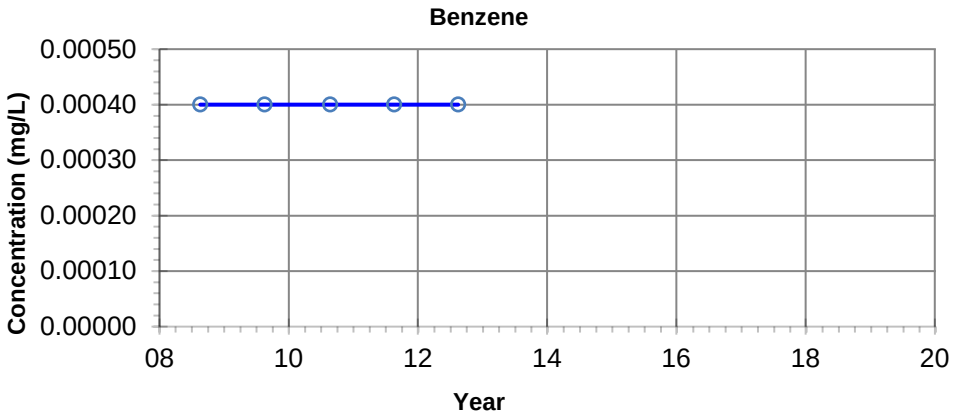

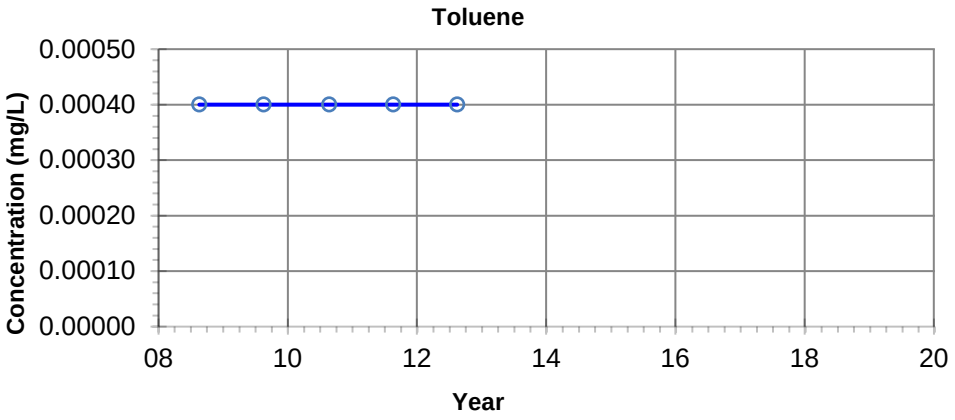

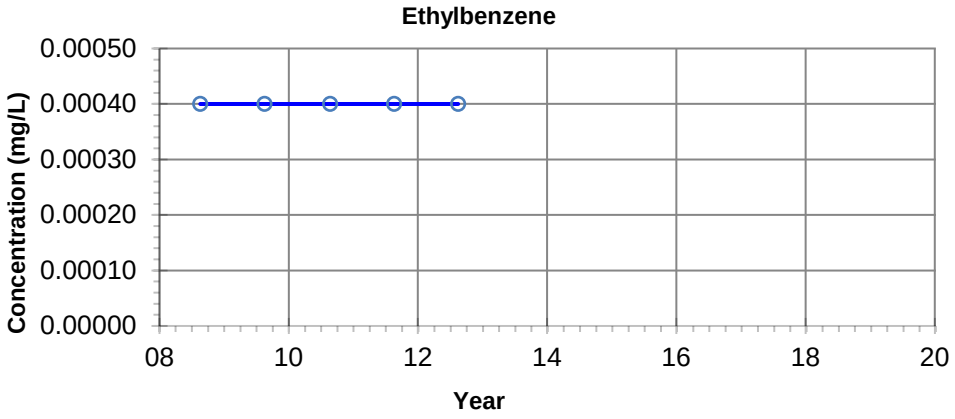

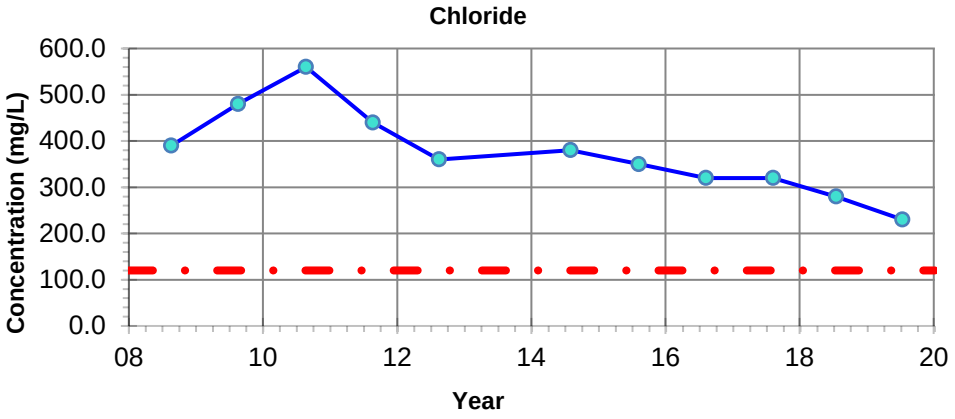

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI SW04

27-Mar-2020 date	NA edited by	JC drawn by	NA app by

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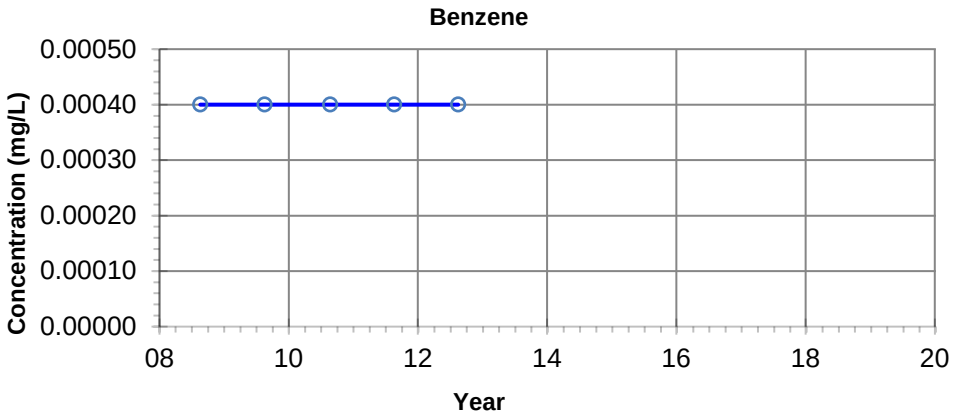

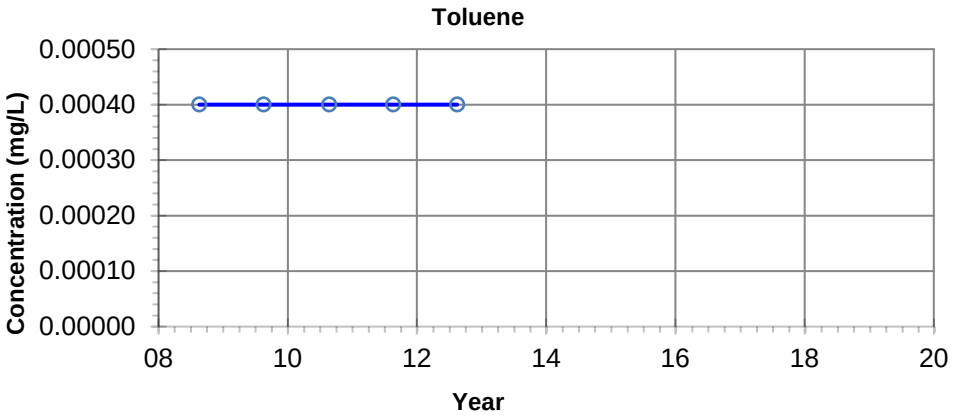

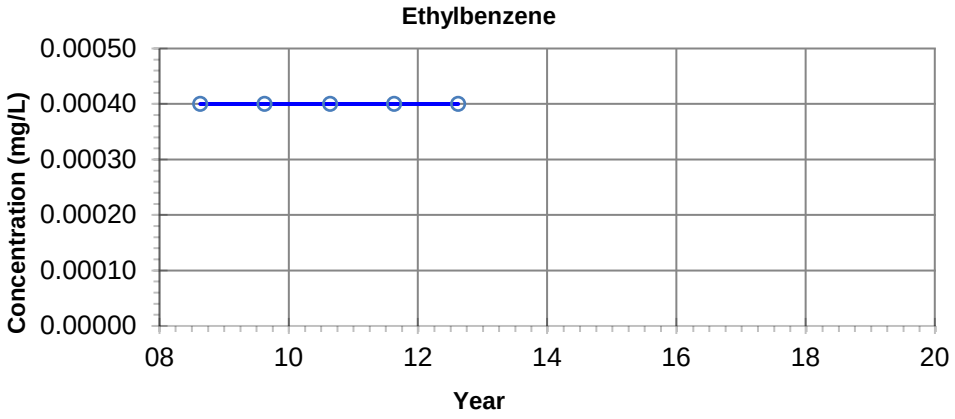

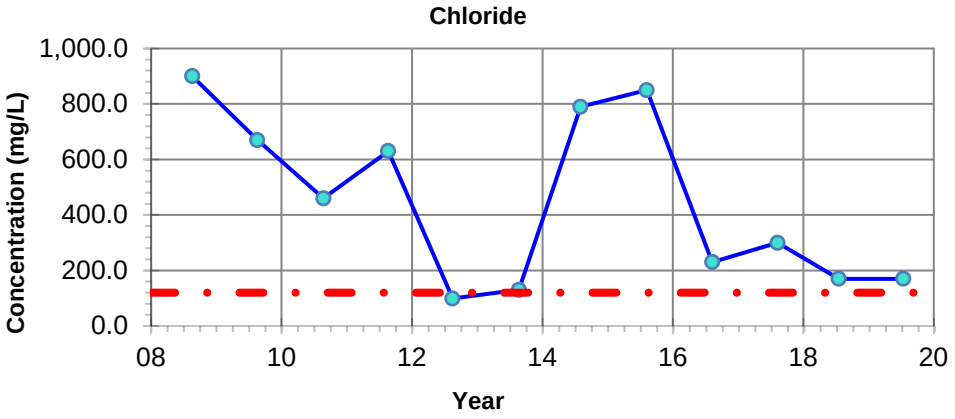

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– · – **GUIDELINE:**
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Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI SW05

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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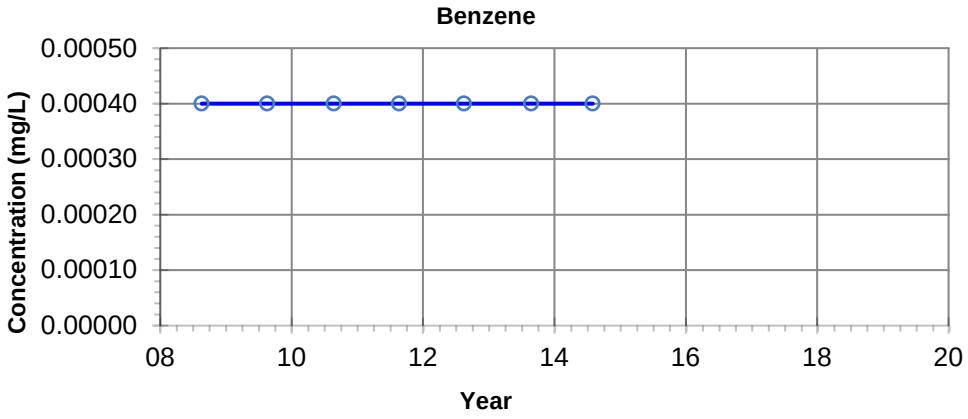

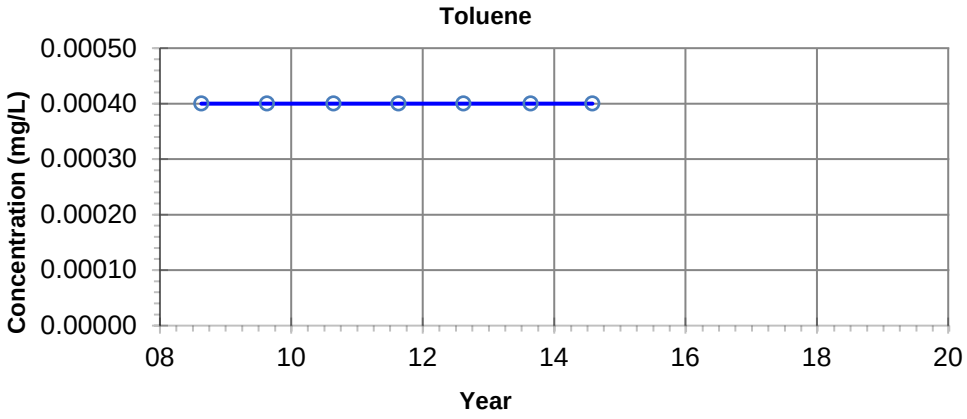

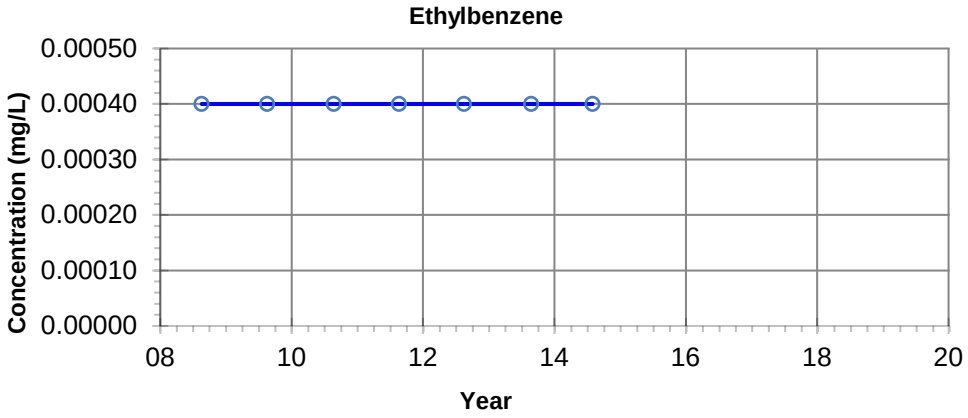

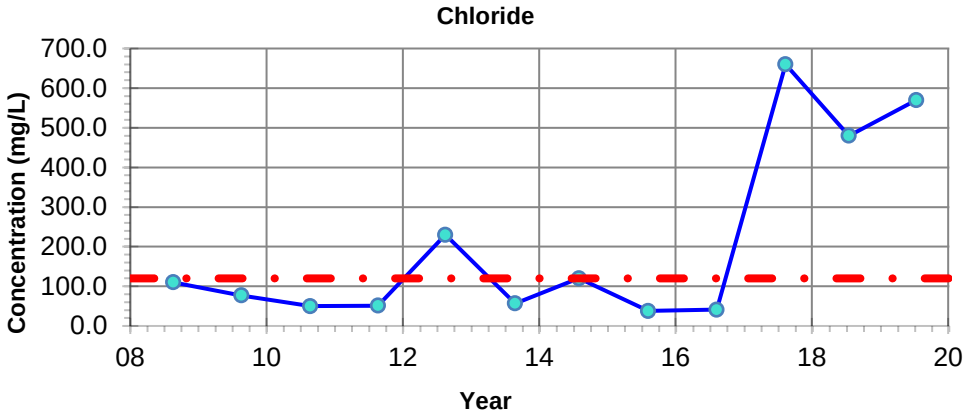

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Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI SW06

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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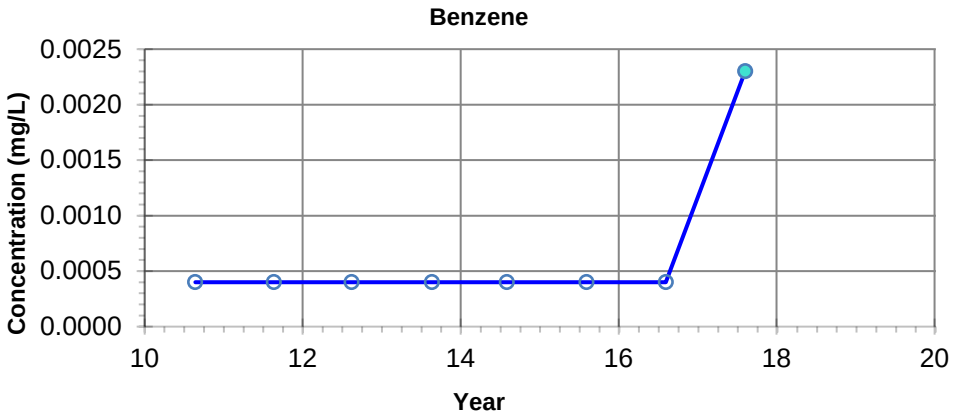

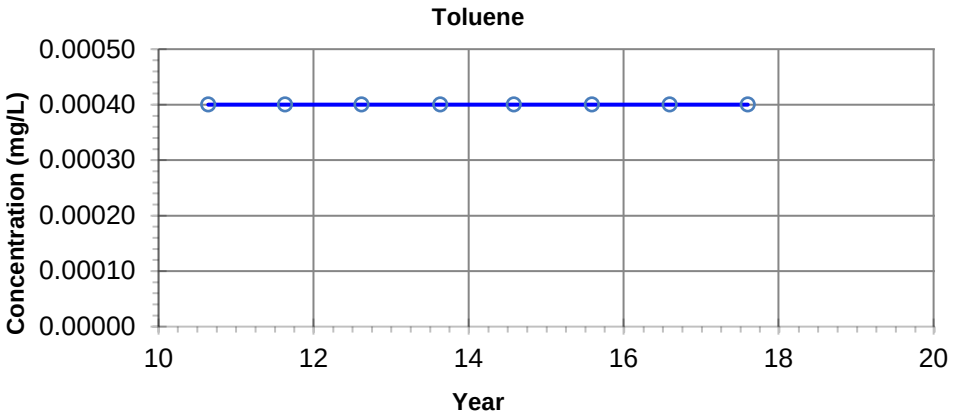

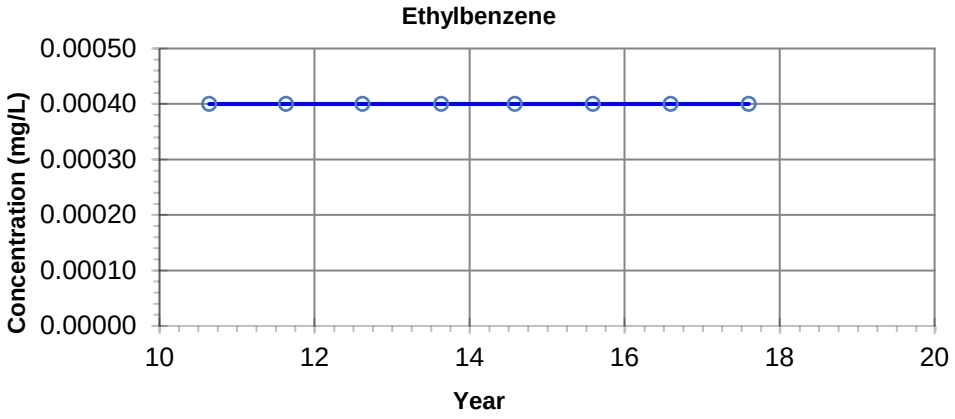

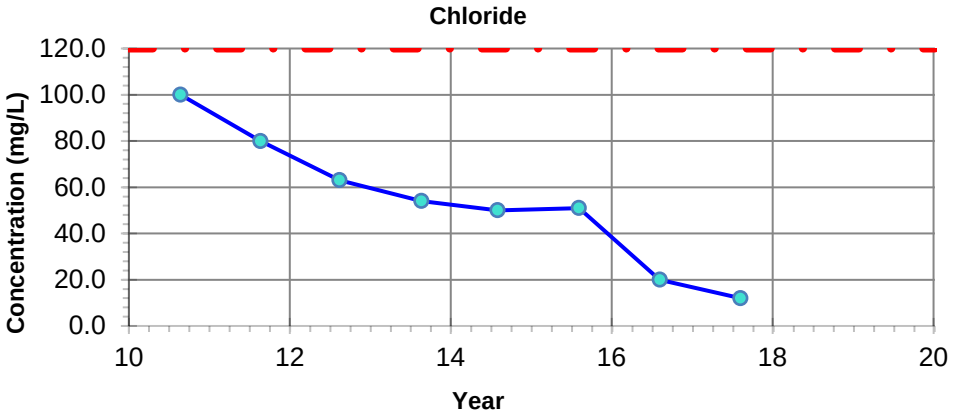

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI BT1 09-1-4

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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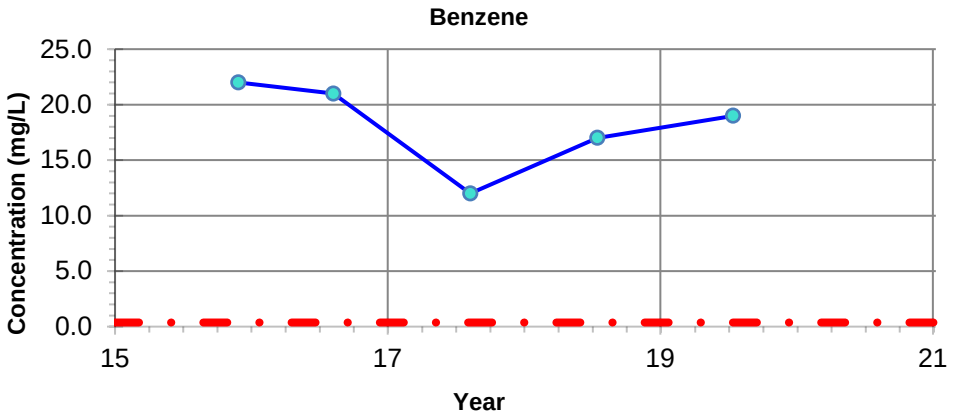

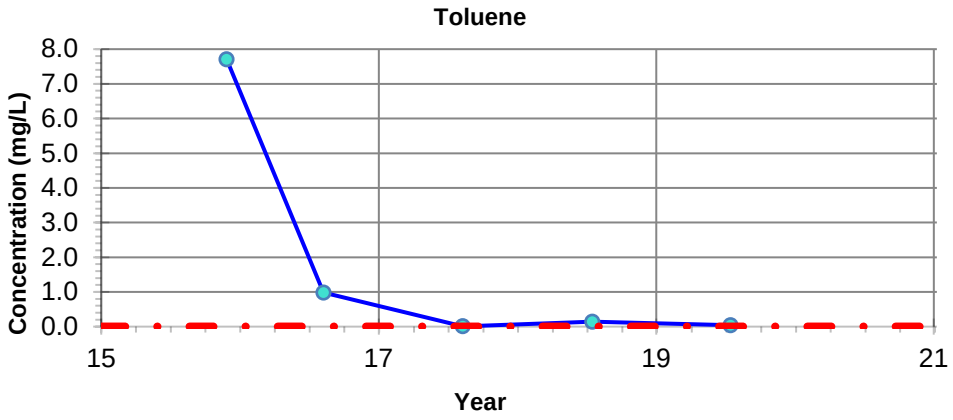

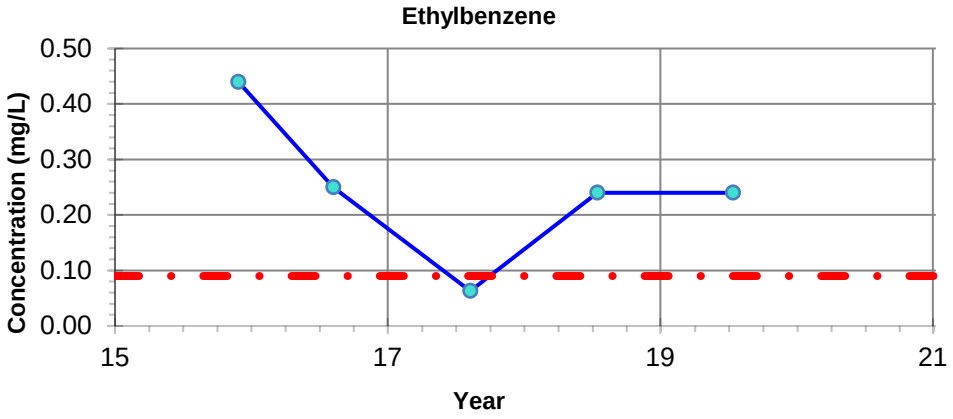

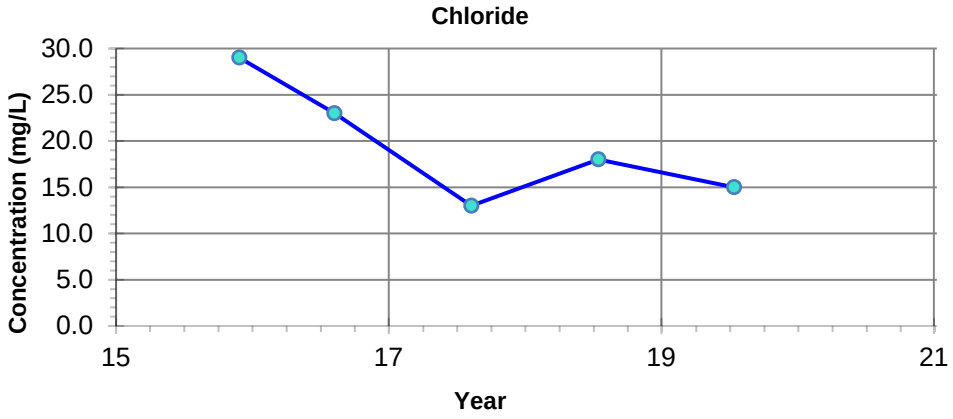

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIBT1-15-1-3.5

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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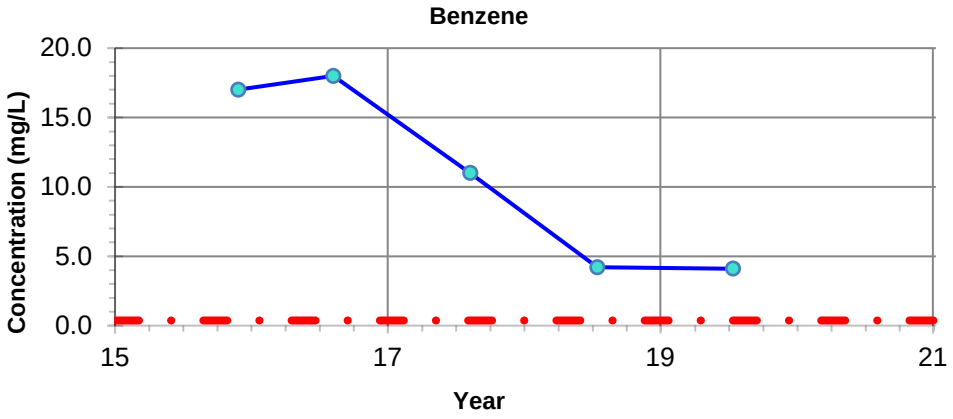

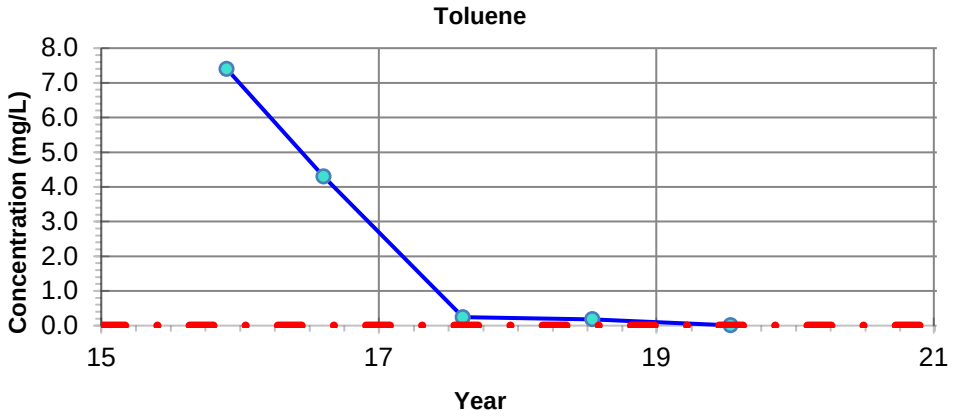

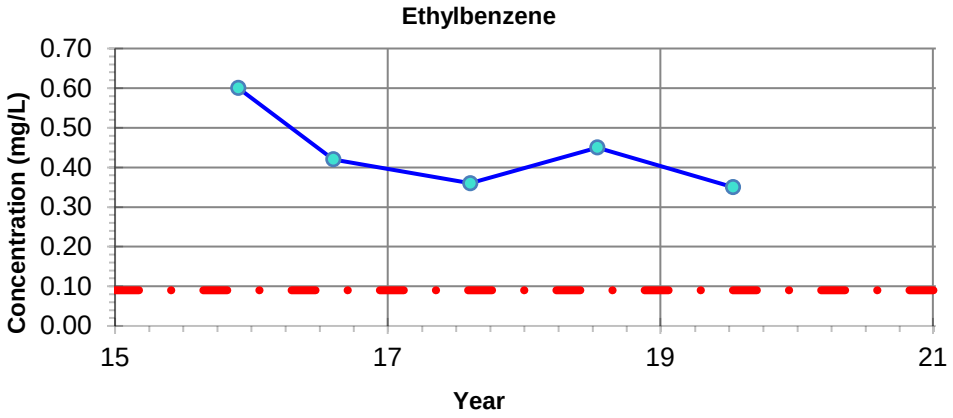

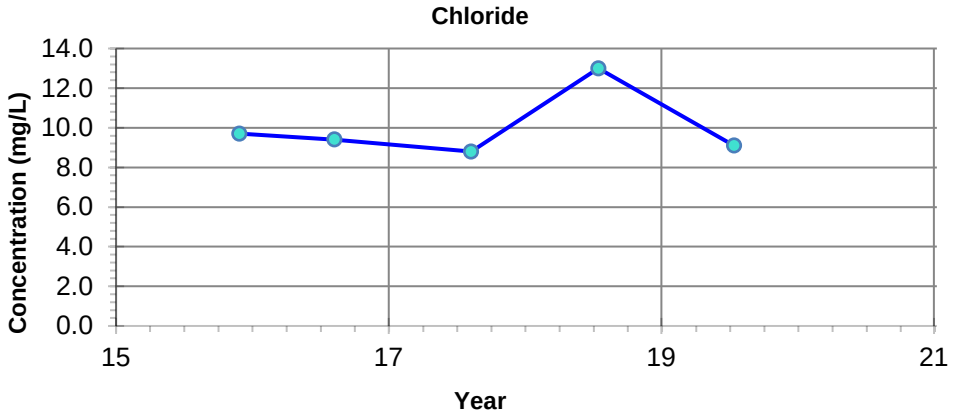

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIBT1-15-2-4

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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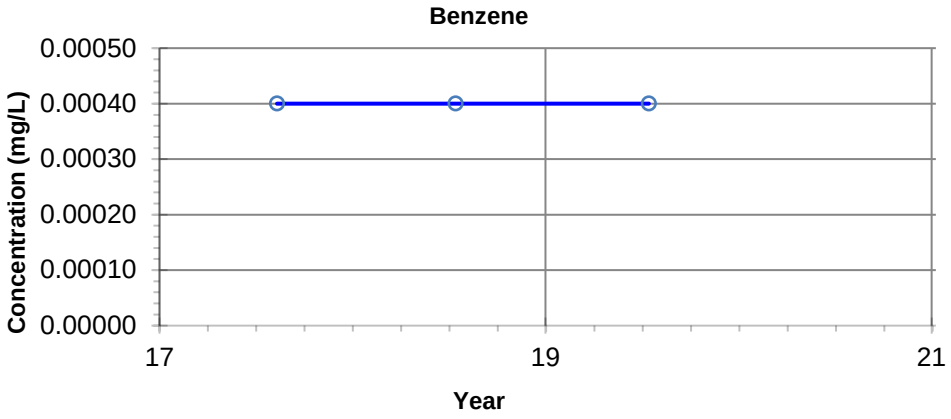

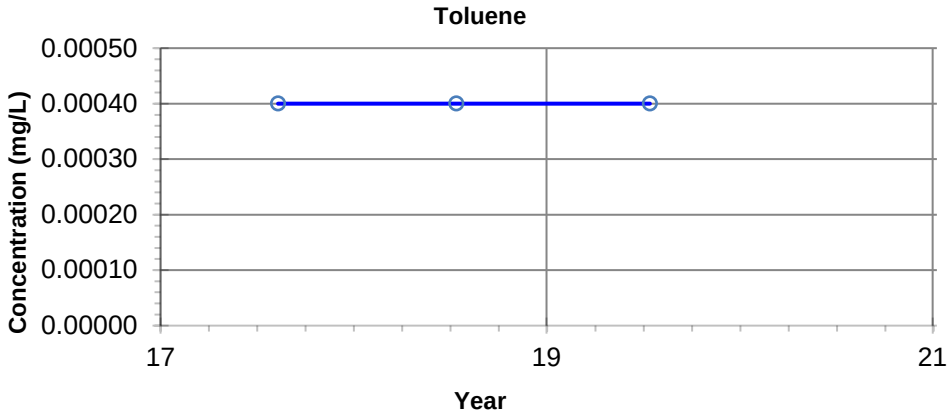

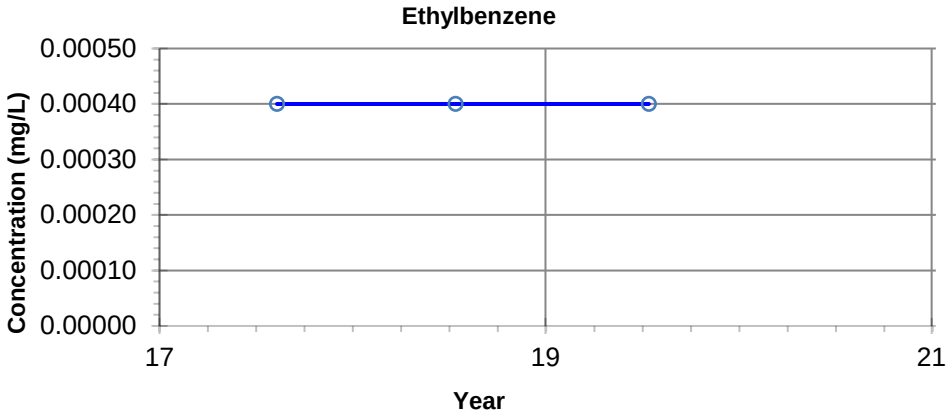

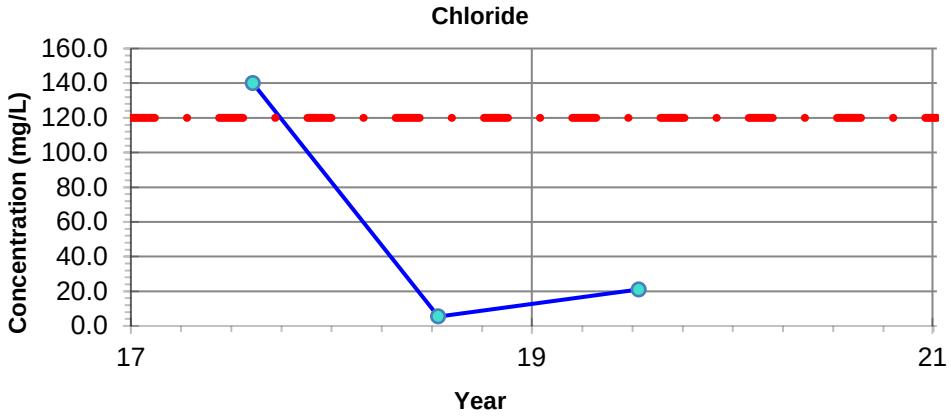

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Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIBT1-15-4-4

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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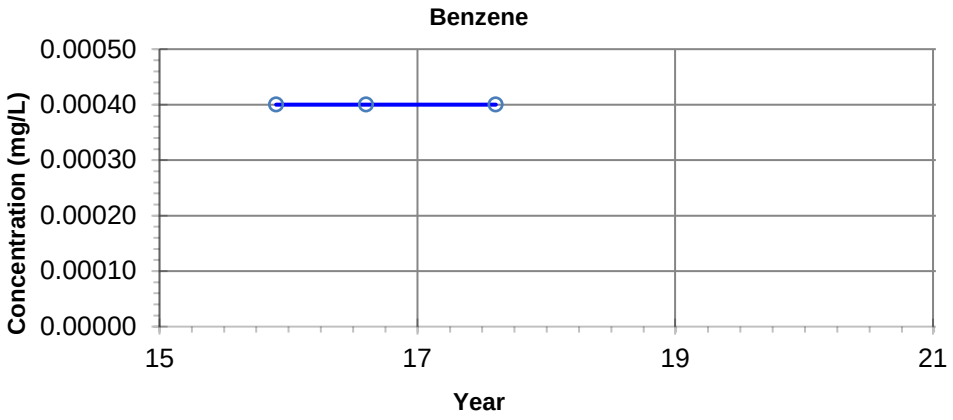

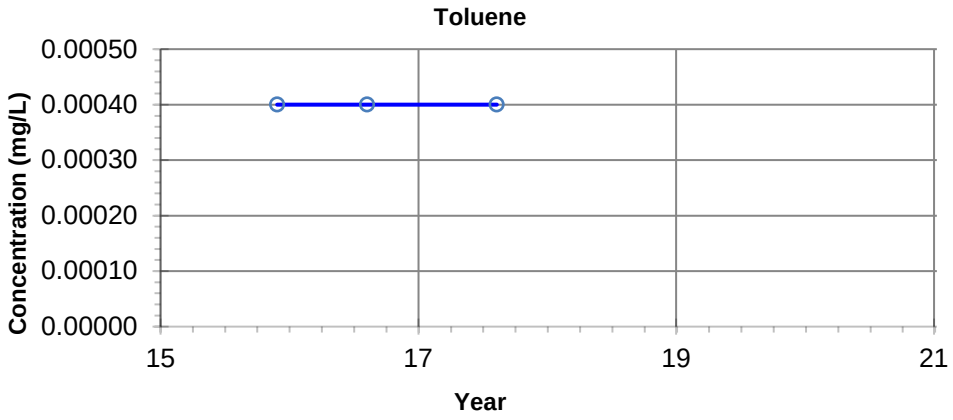

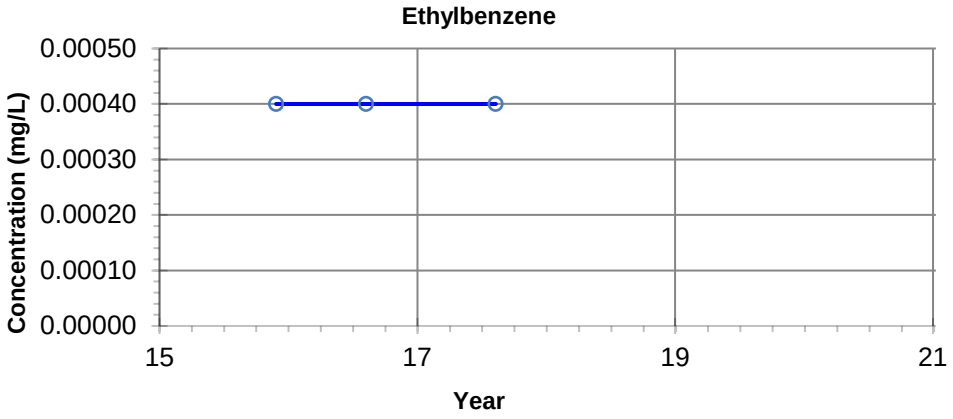

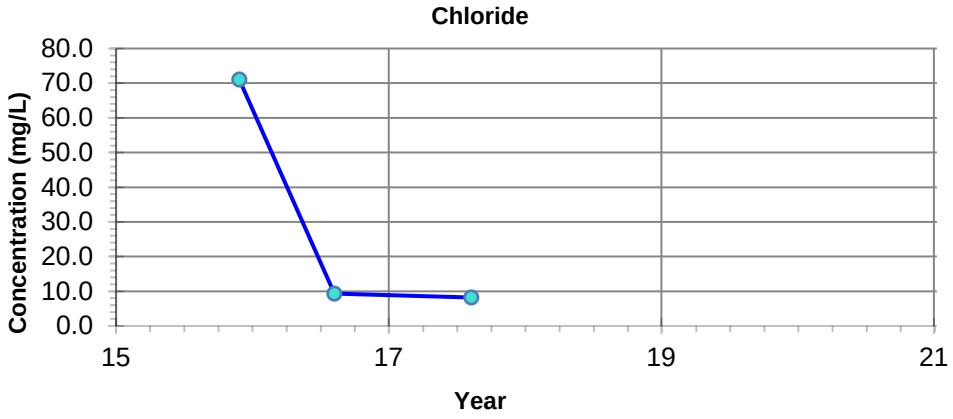

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Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIBT1-15-5-3

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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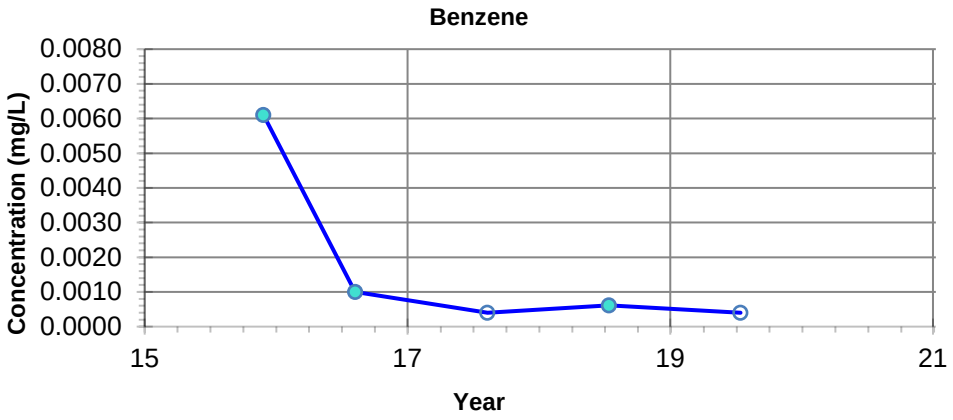

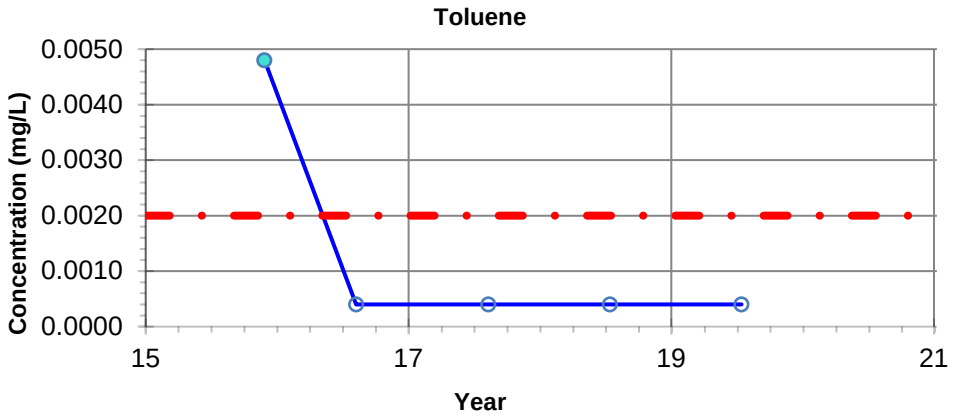

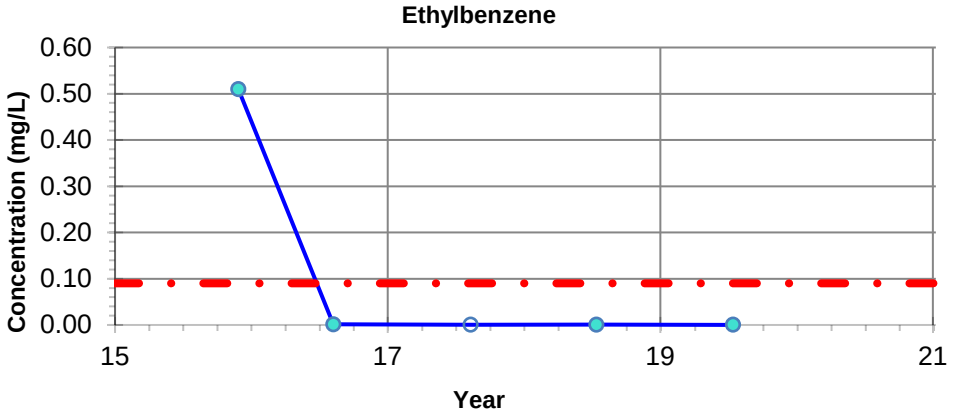

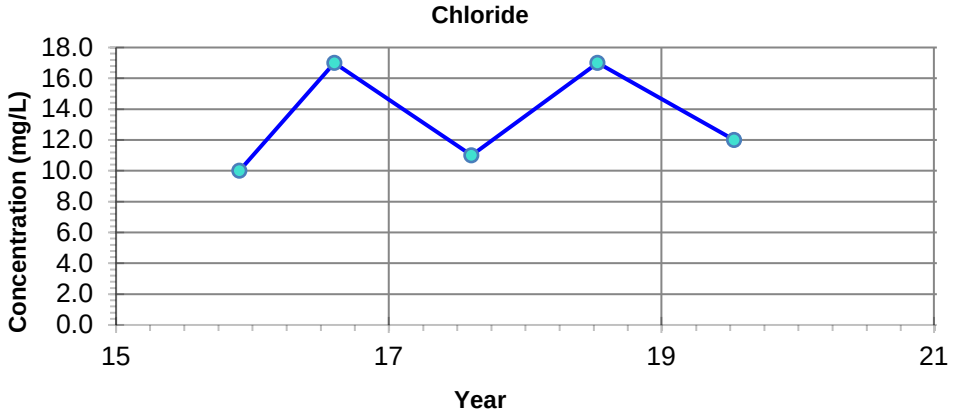

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2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIBT1-15-7-4

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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Worley Group

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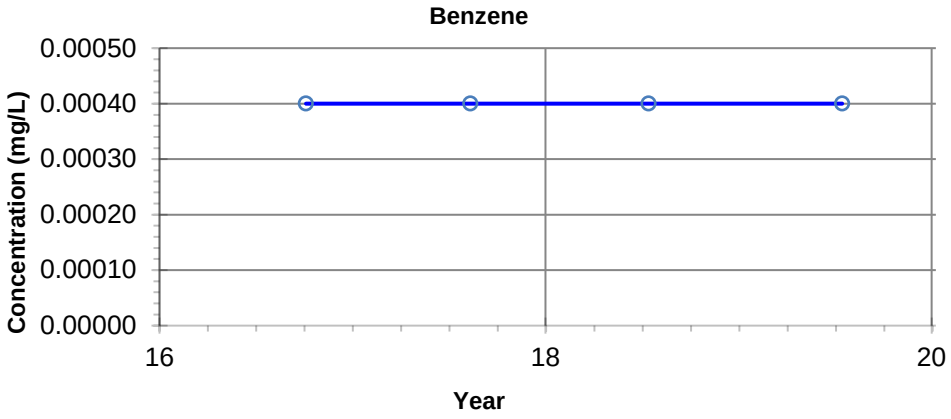

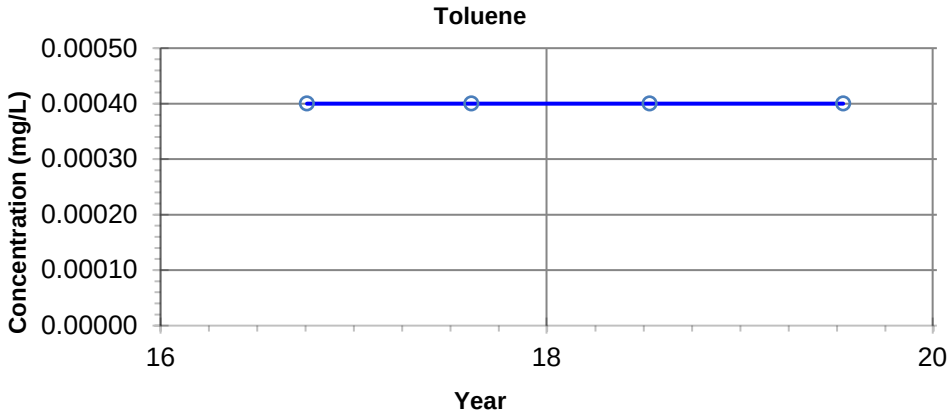

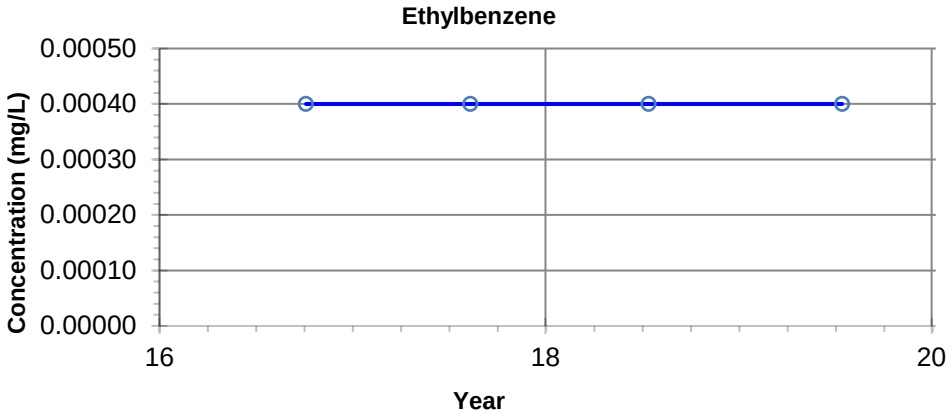

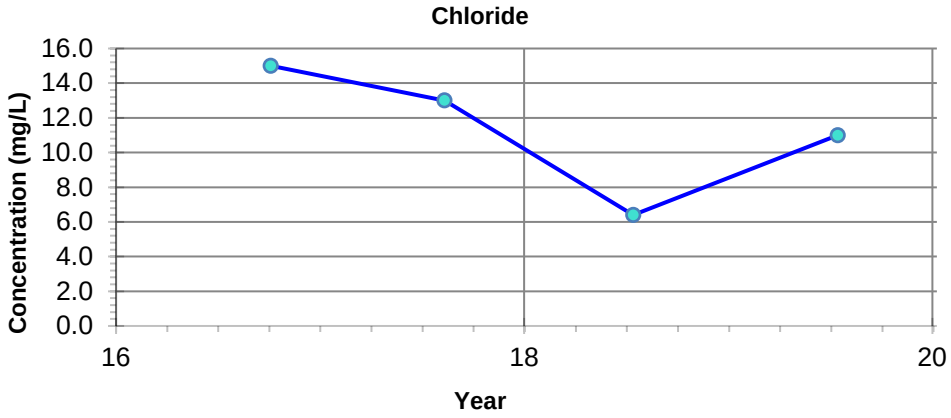

NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIBT1-16-1-3

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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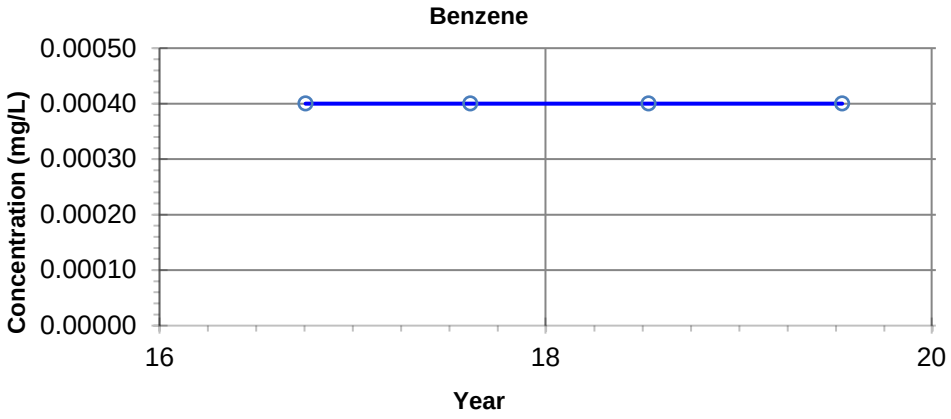

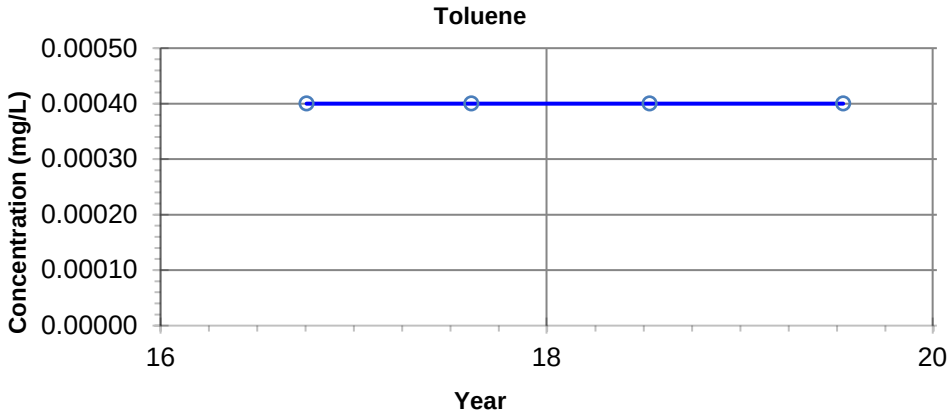

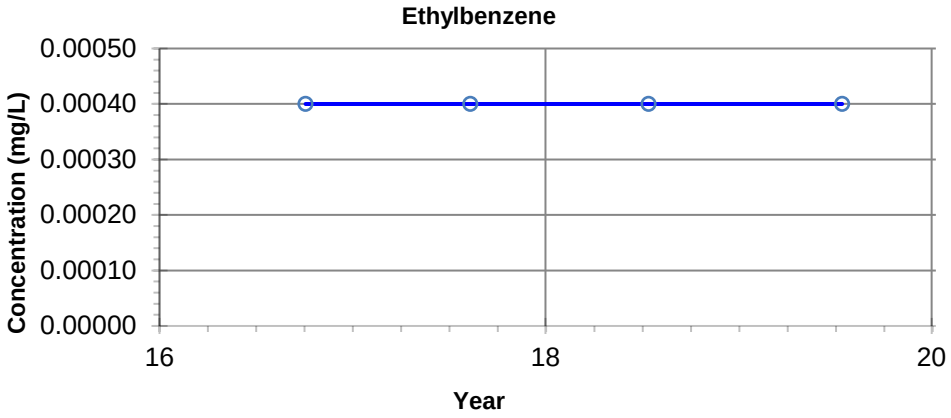

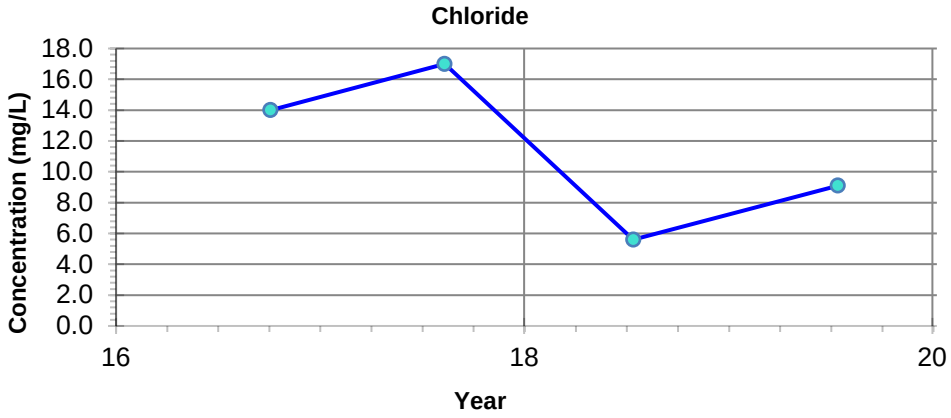

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIBT1-16-2-3

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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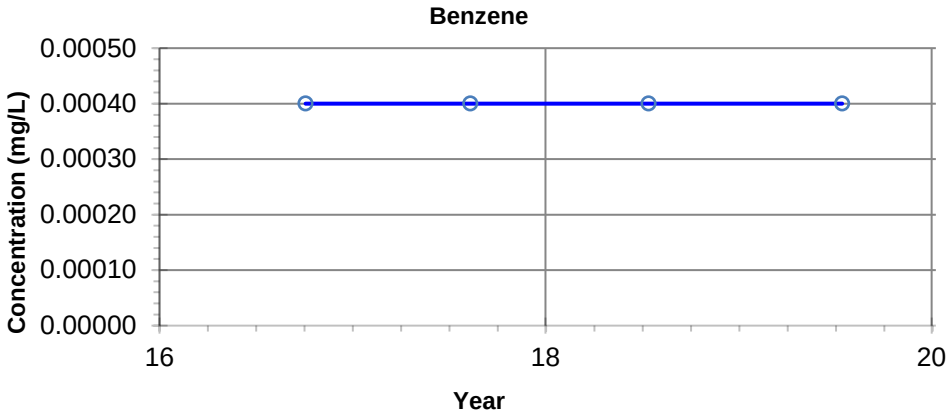

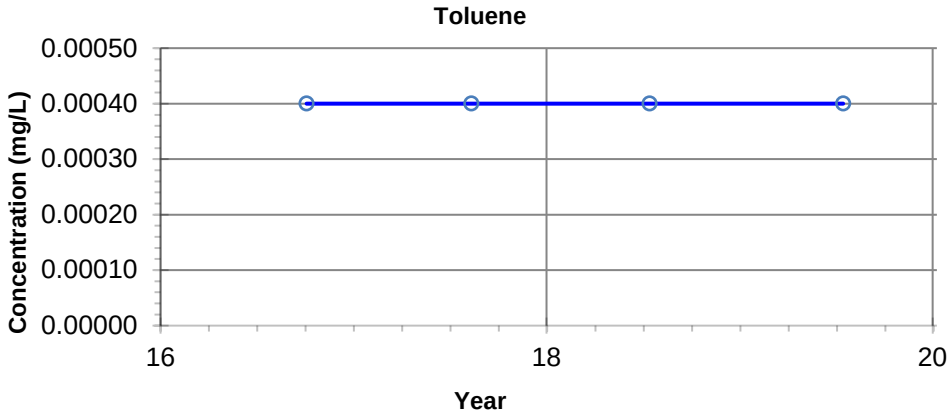

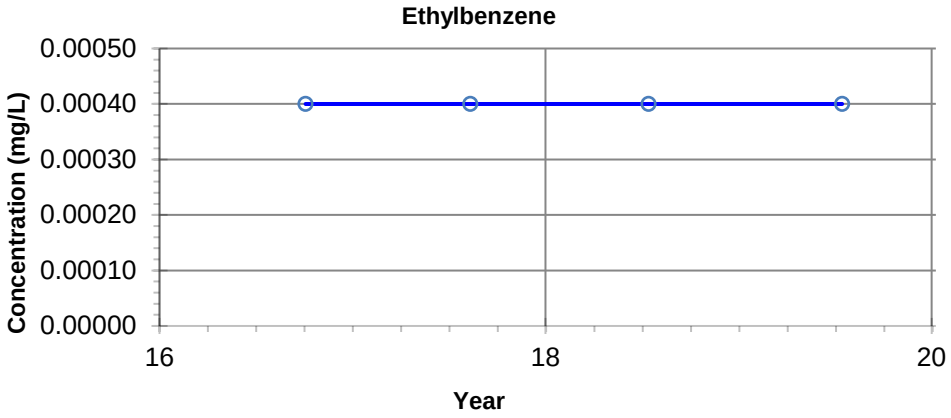

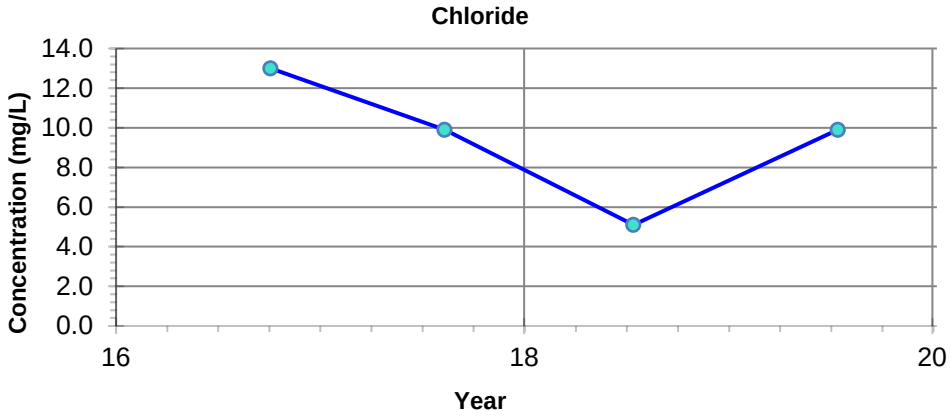

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIBT1-16-3-3

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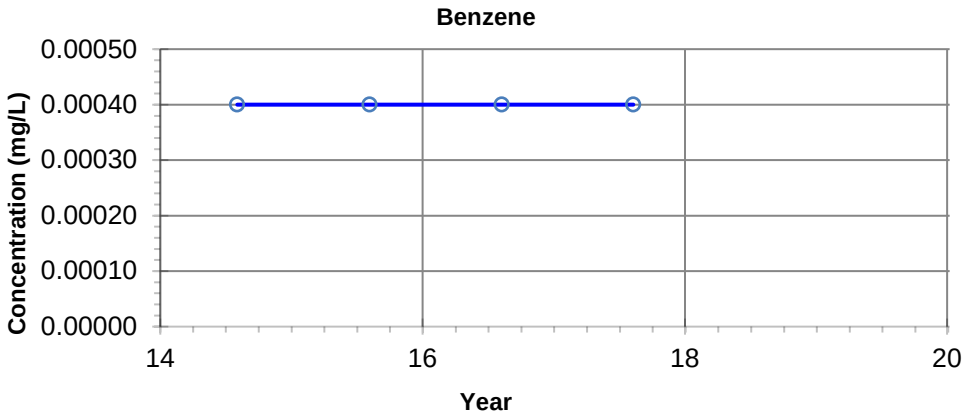

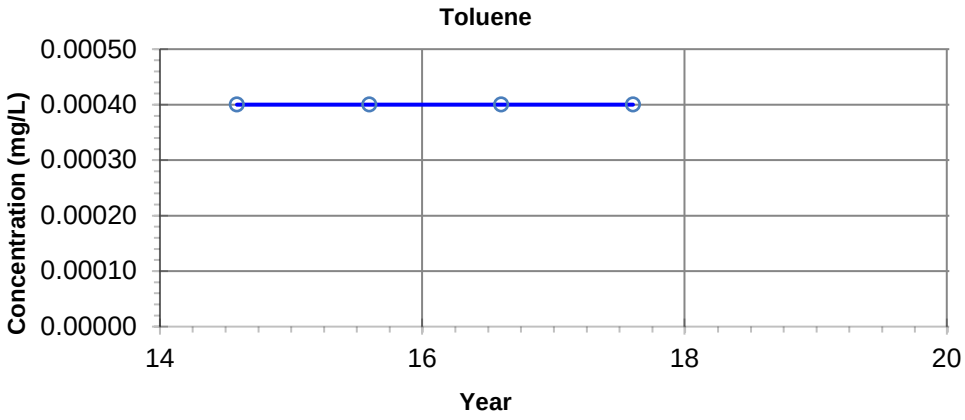

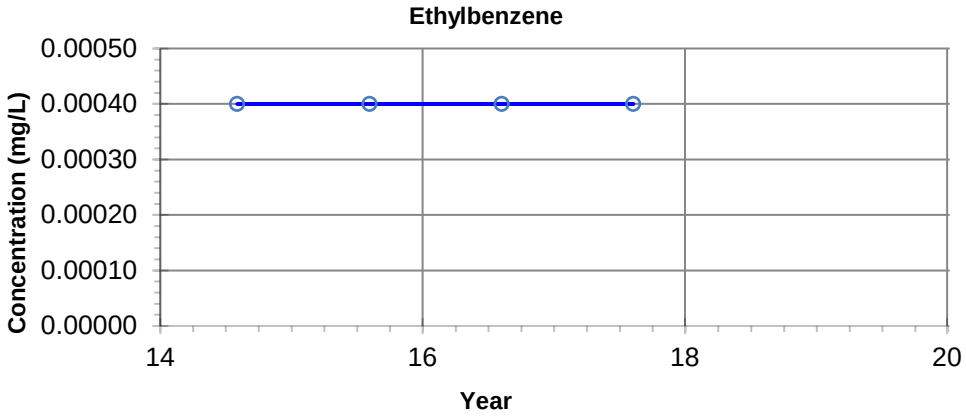

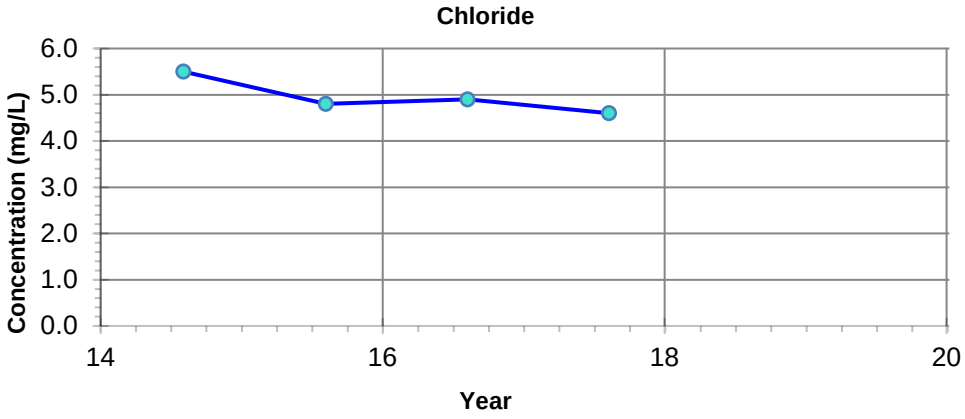

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI-14-13-3

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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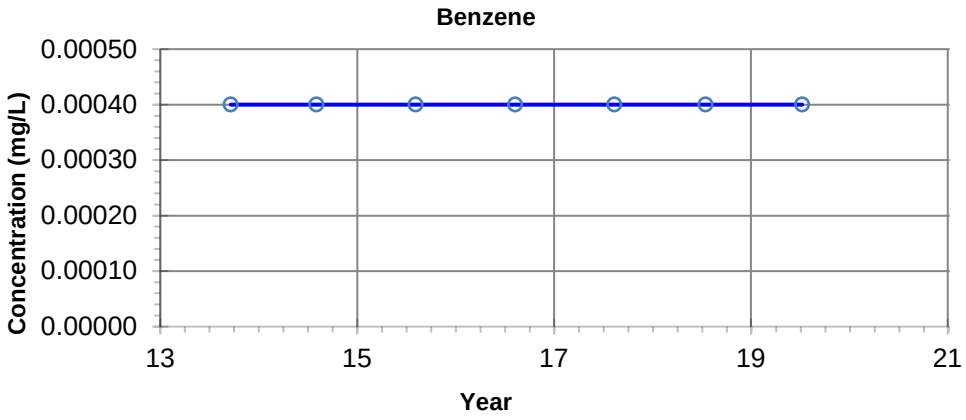

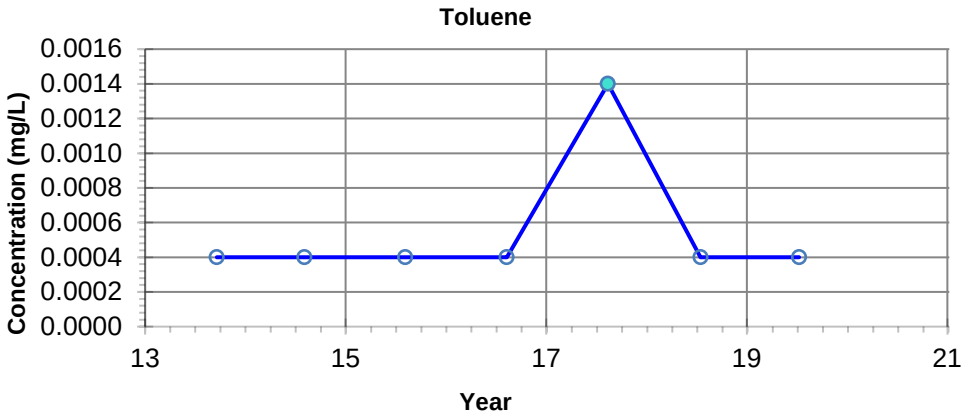

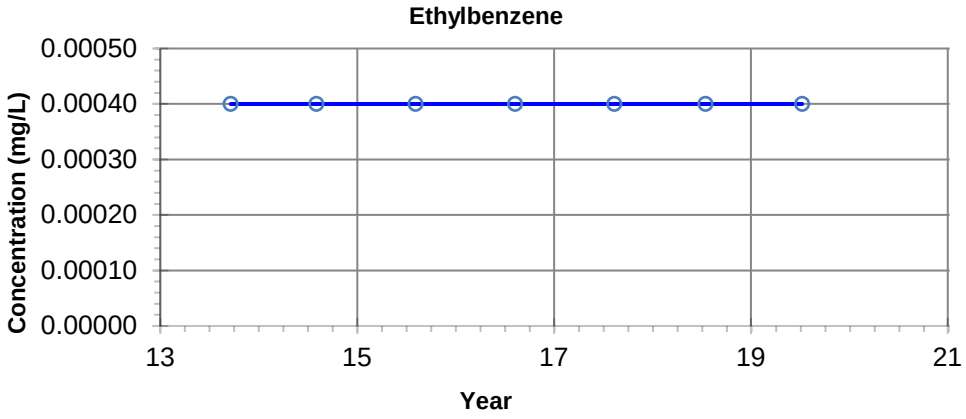

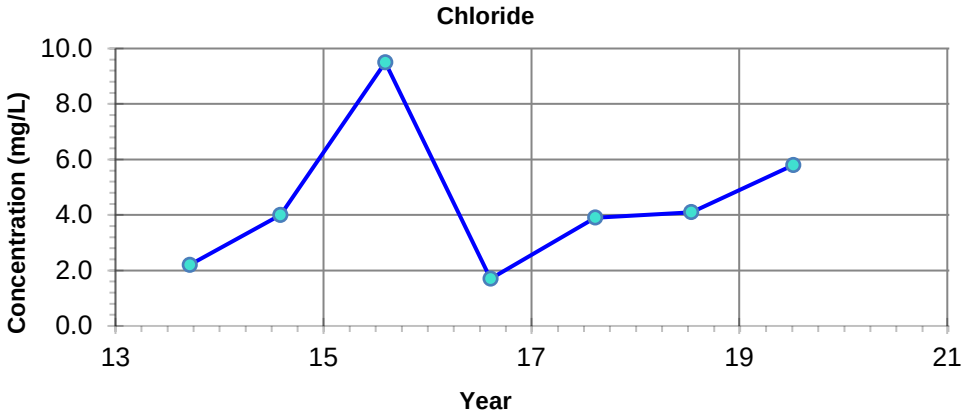

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI SW-13-1

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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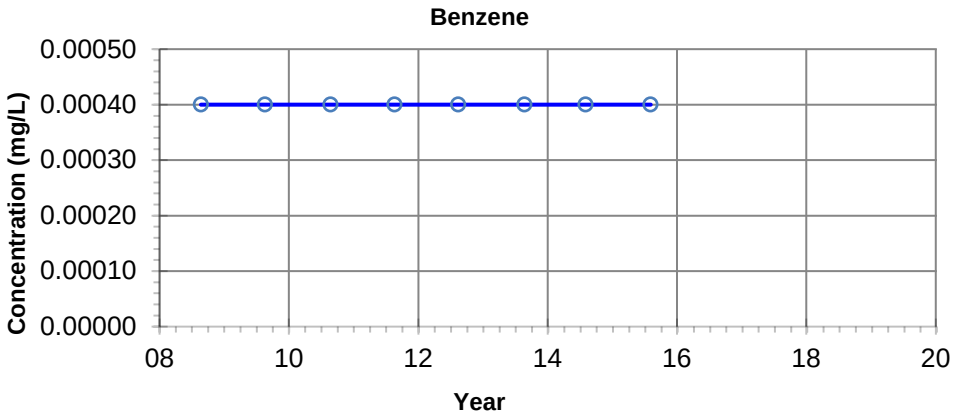

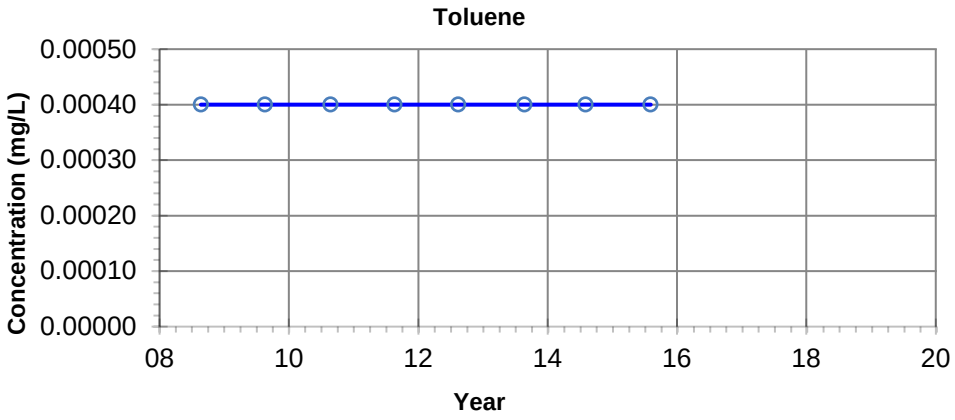

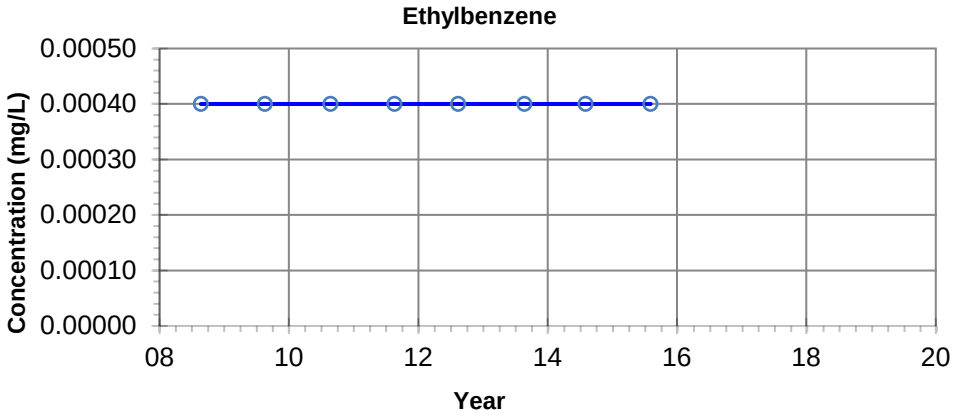

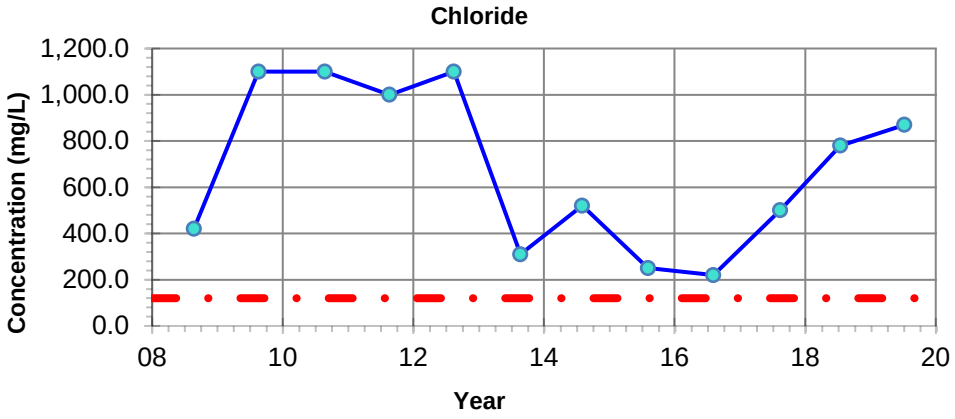

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI 08-2-3

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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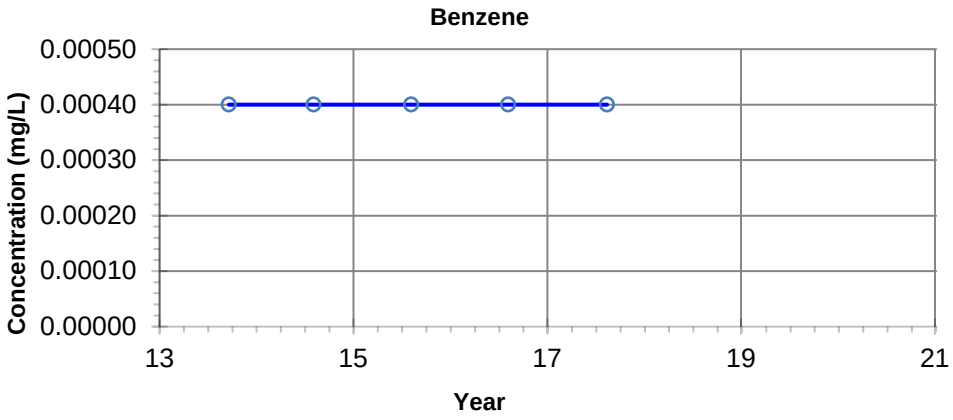

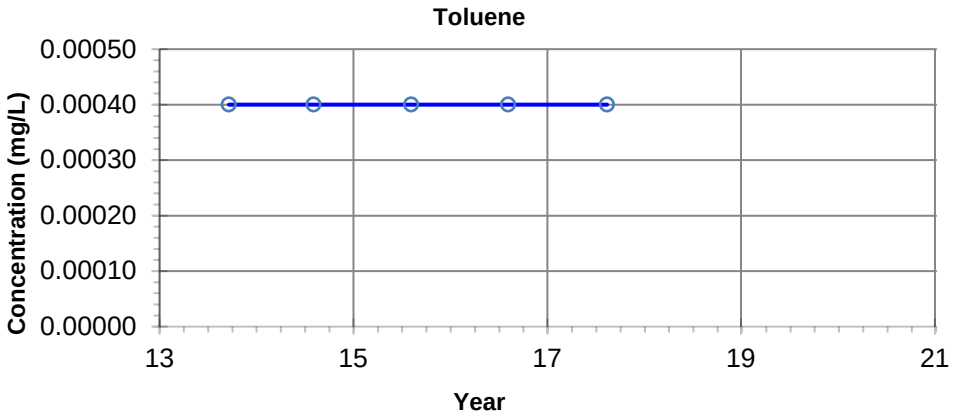

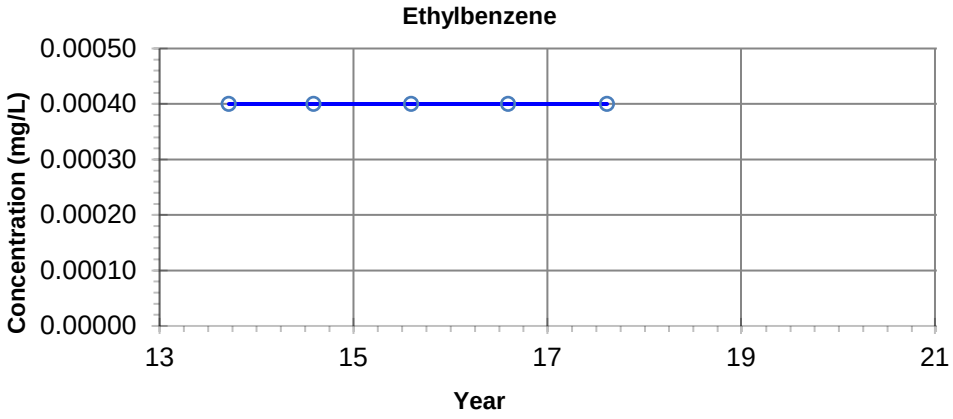

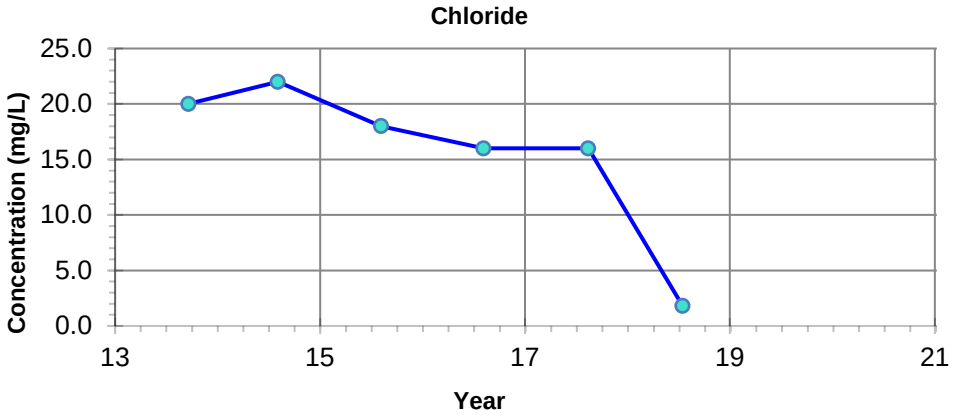

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI-13-2-4.5

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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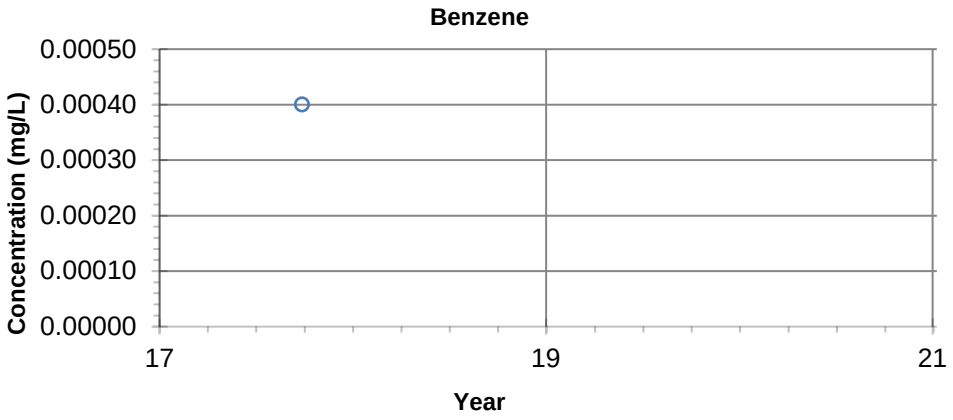

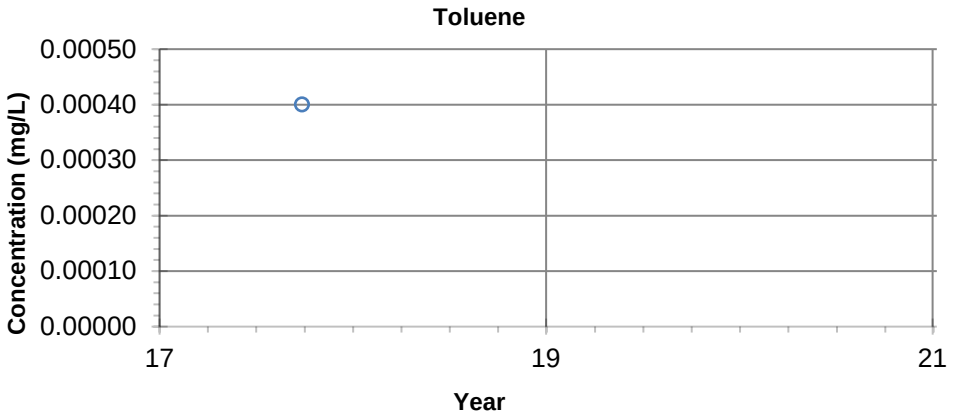

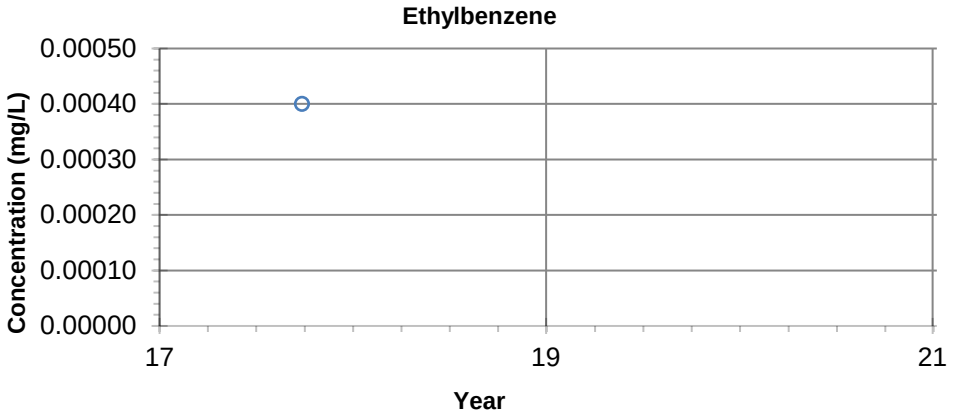

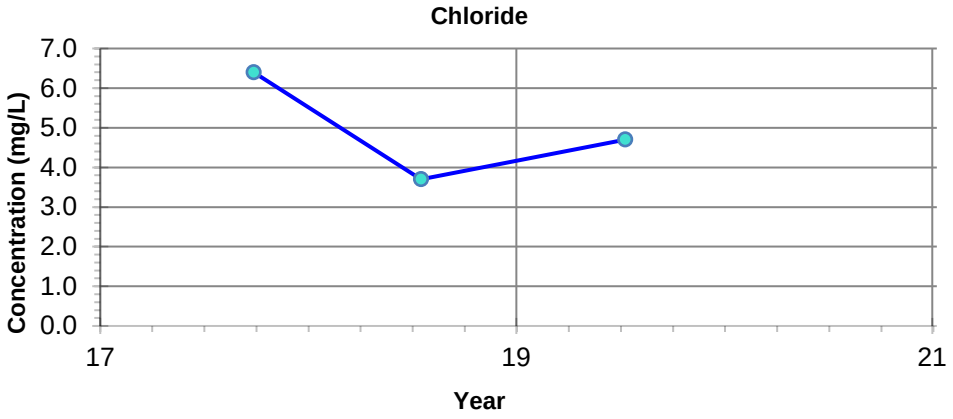

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIS6-17-SW01

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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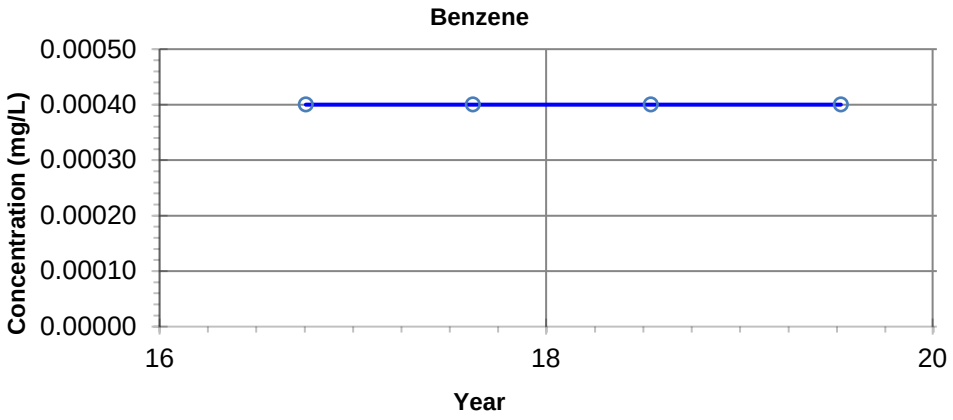

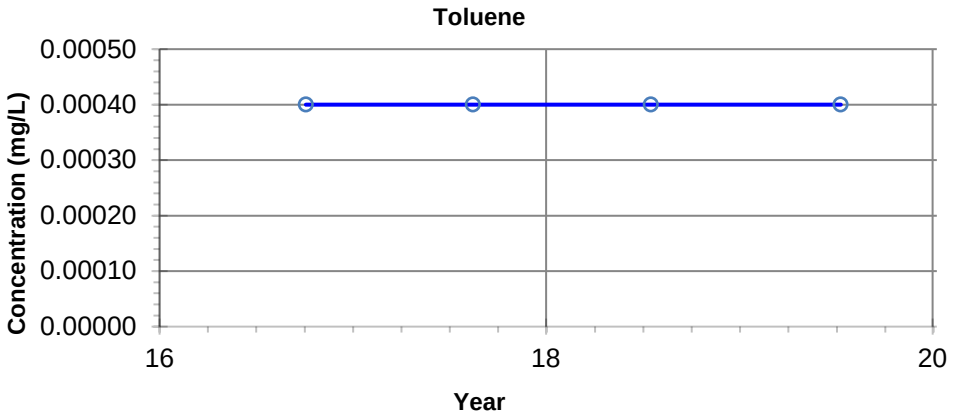

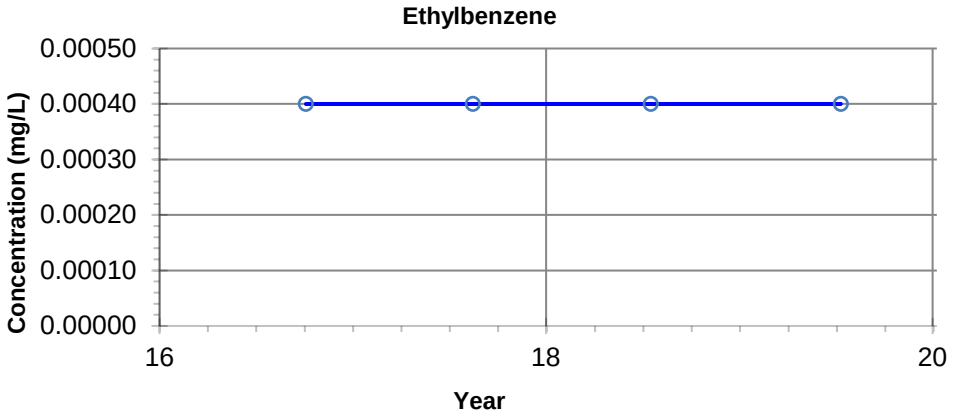

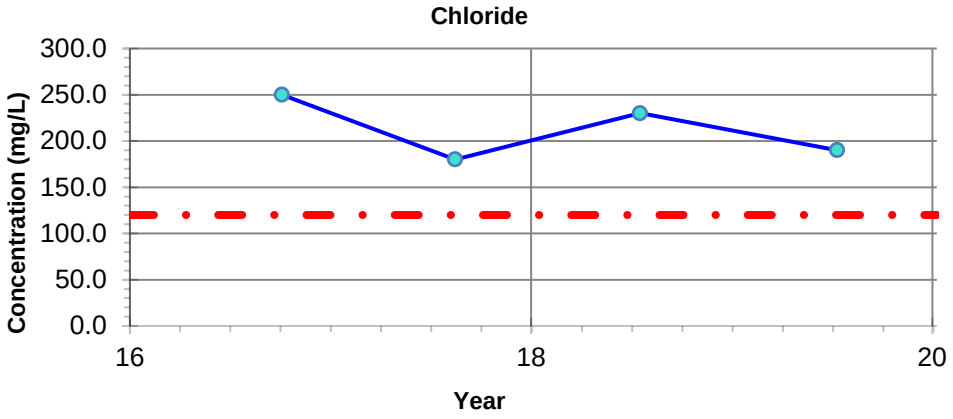

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIWS-16-1-4

27-Mar-2020 date	NA edited by	JC drawn by	NA app by

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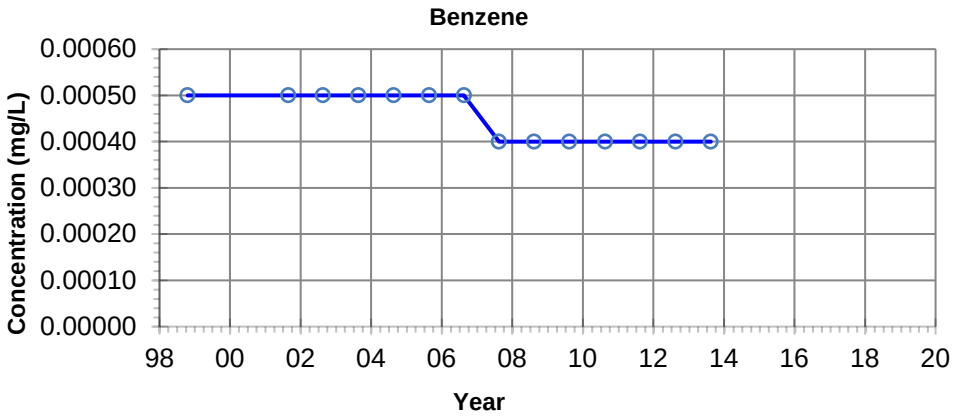

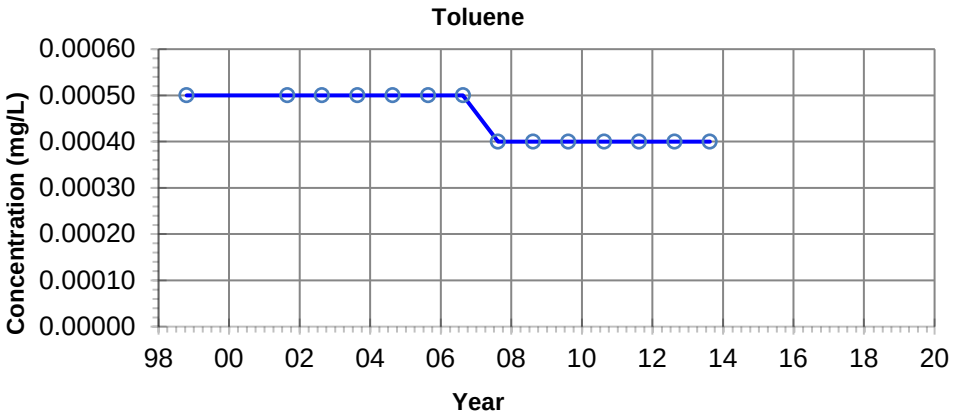

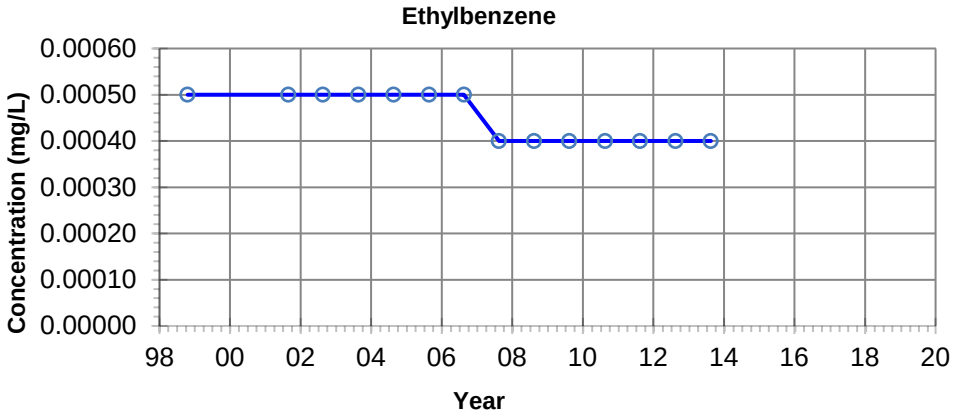

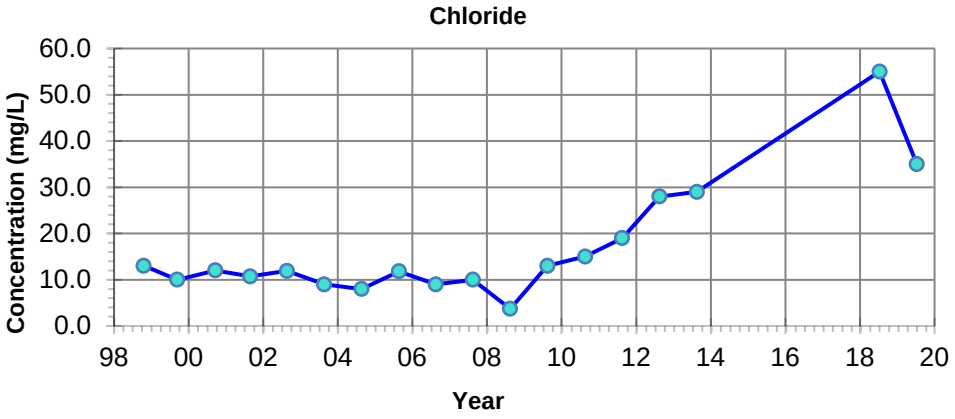

NOTES: - Filled symbols denote Sample Values
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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIB 98-2-5

27-Mar-2020 date	NA edited by	JC drawn by	NA app by

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Worley Group

PROJECT NUMBER:
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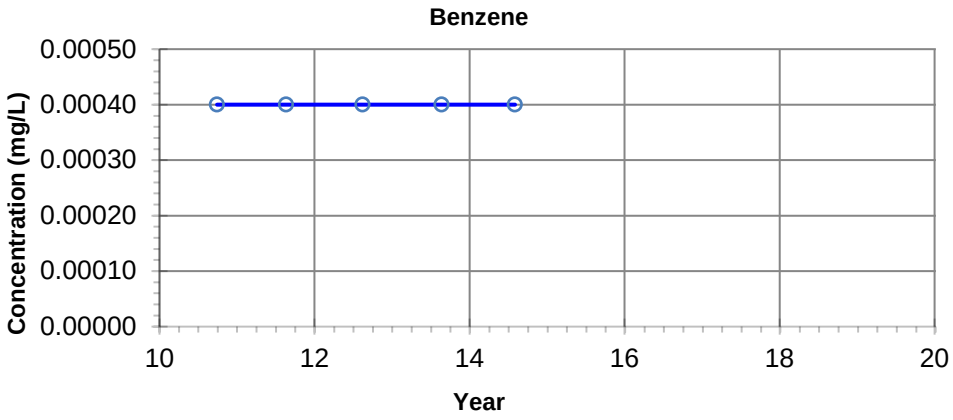

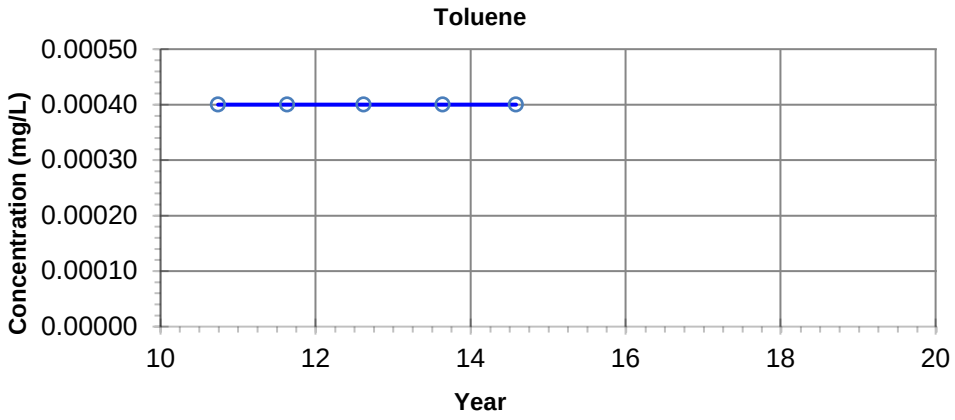

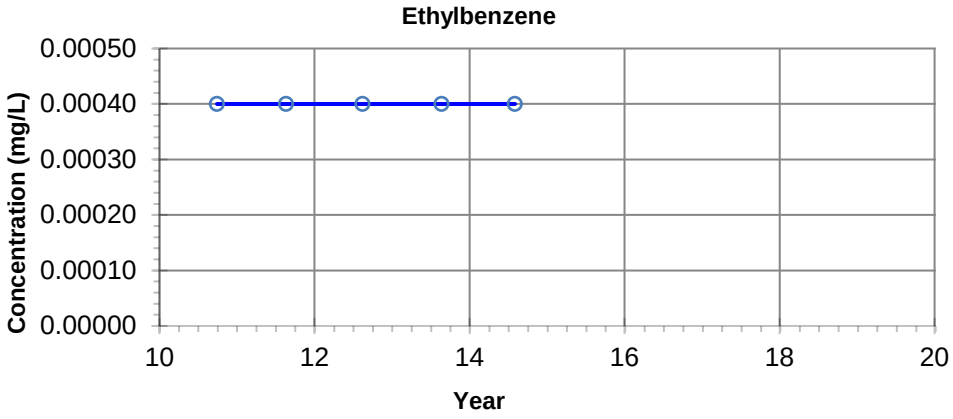

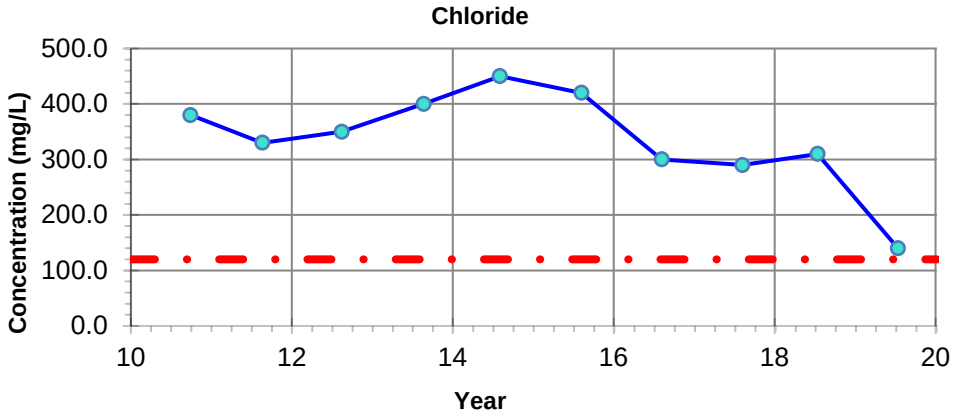

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIN42-10-1-5

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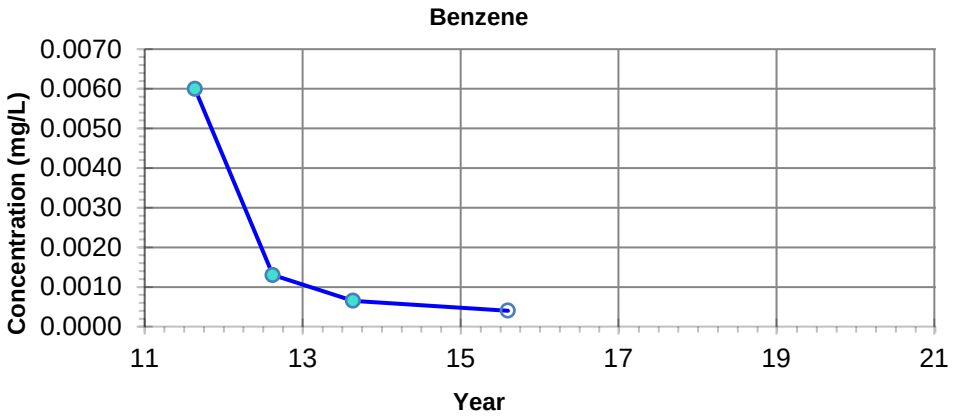

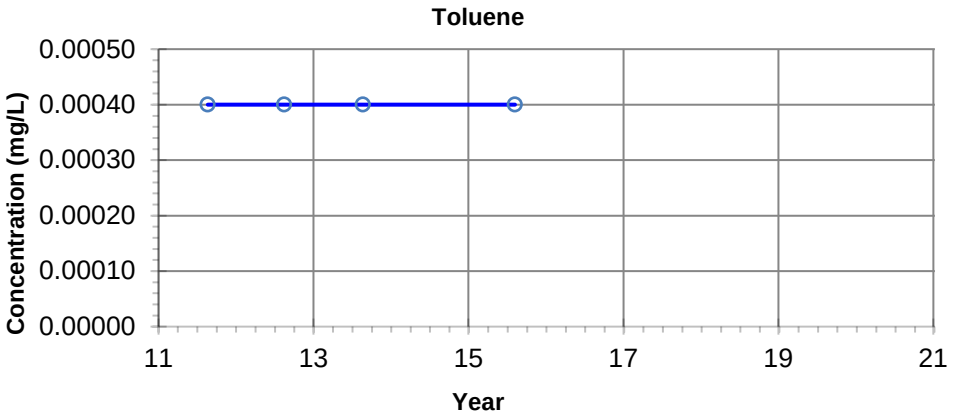

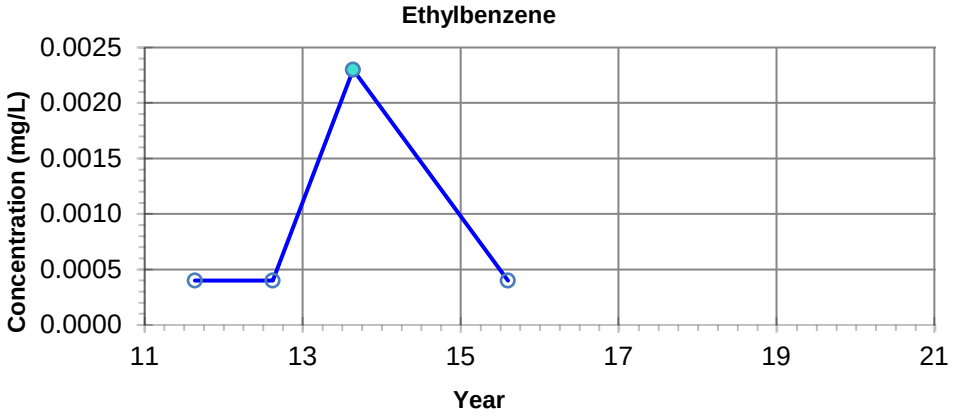

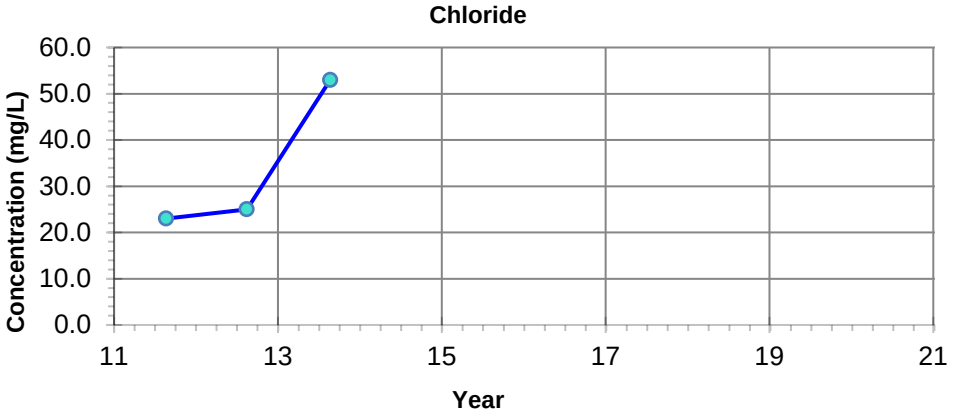

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIN42-10-2-4

27-Mar-2020 date	NA edited by	JC drawn by	NA app by

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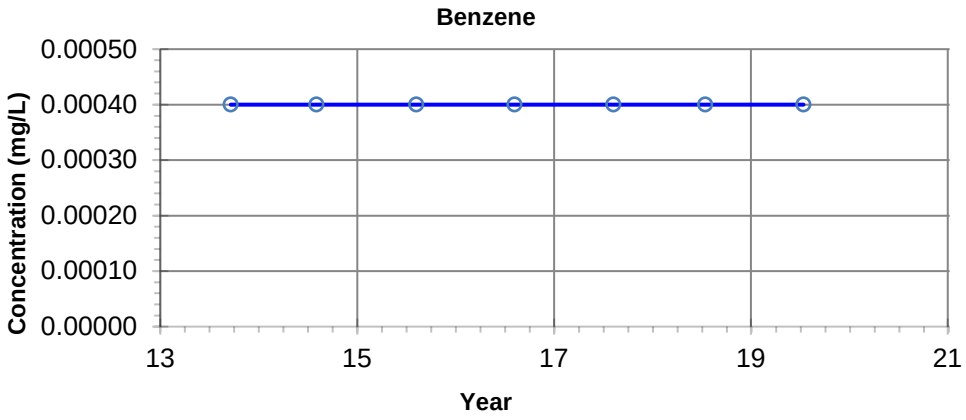

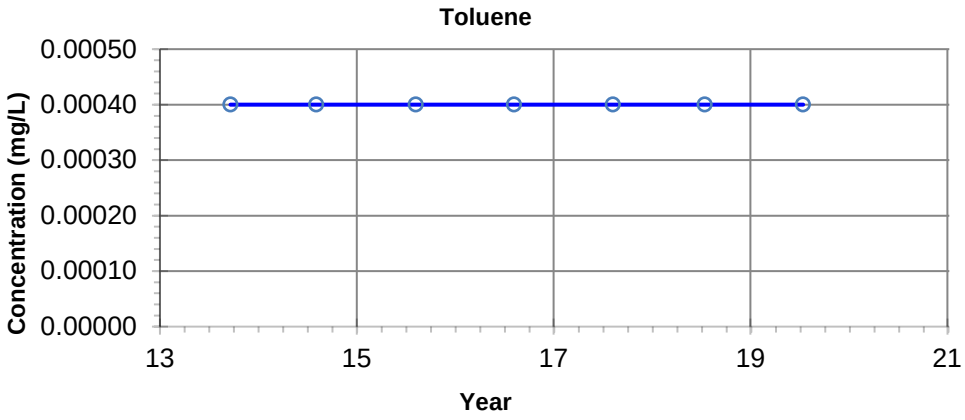

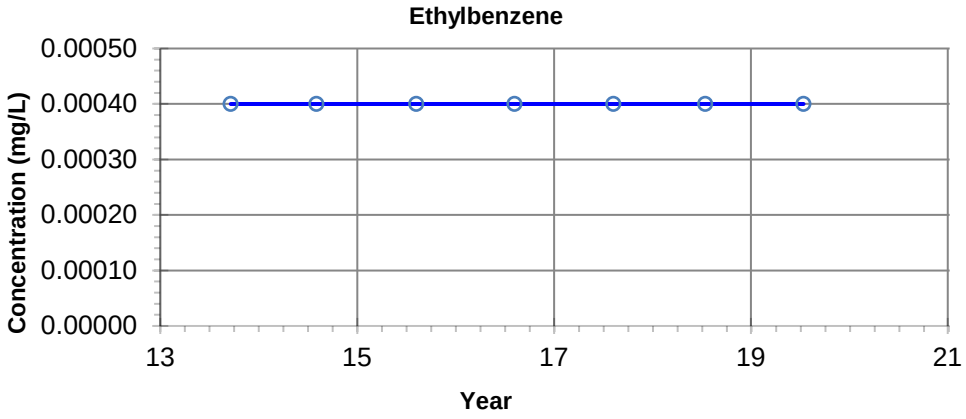

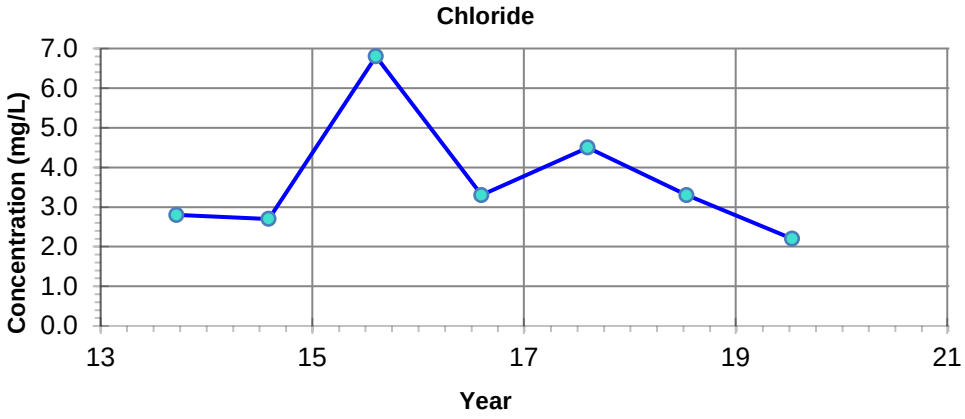

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIN42 SW01

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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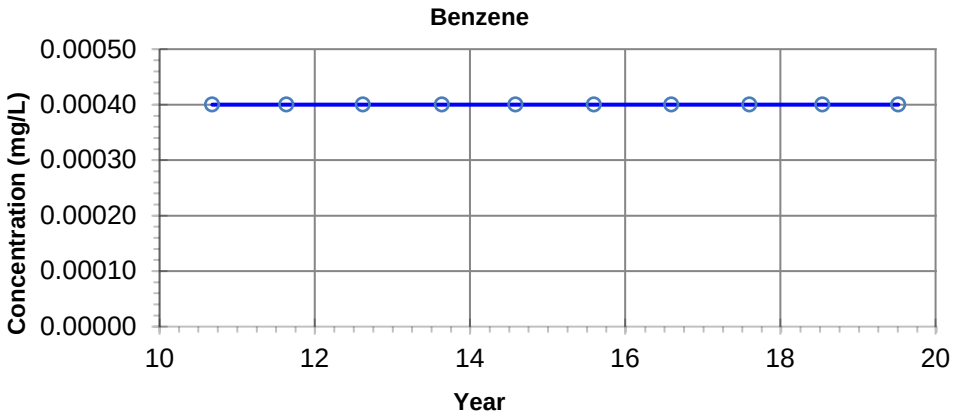

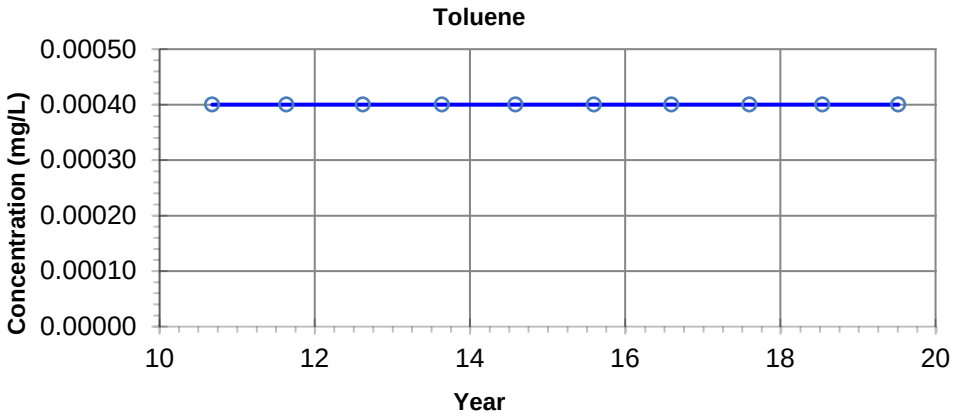

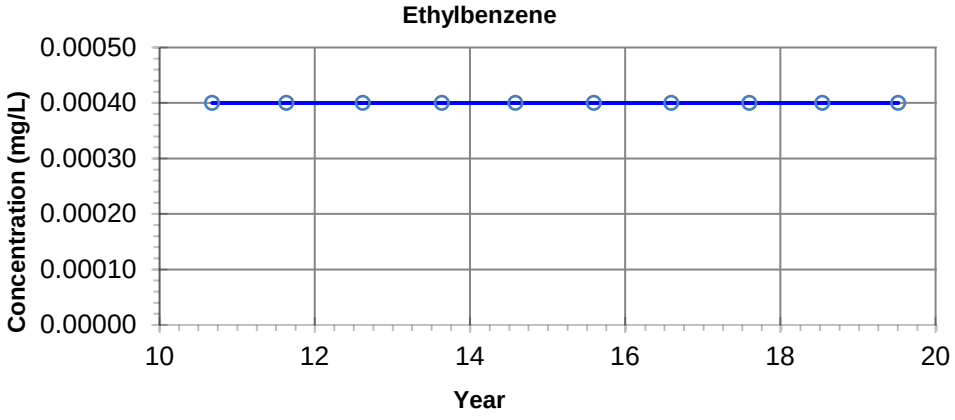

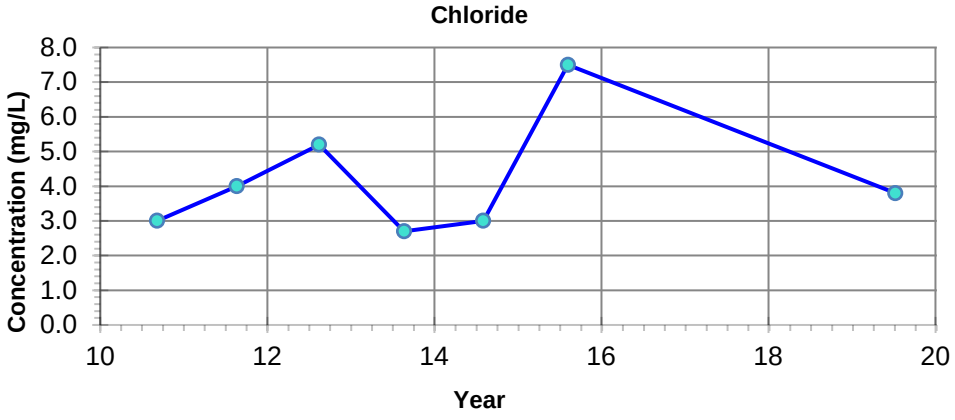

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BI SW09

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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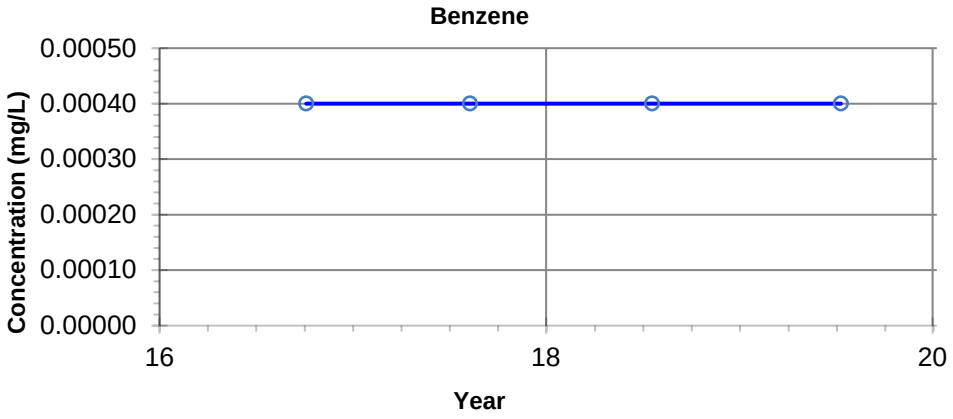

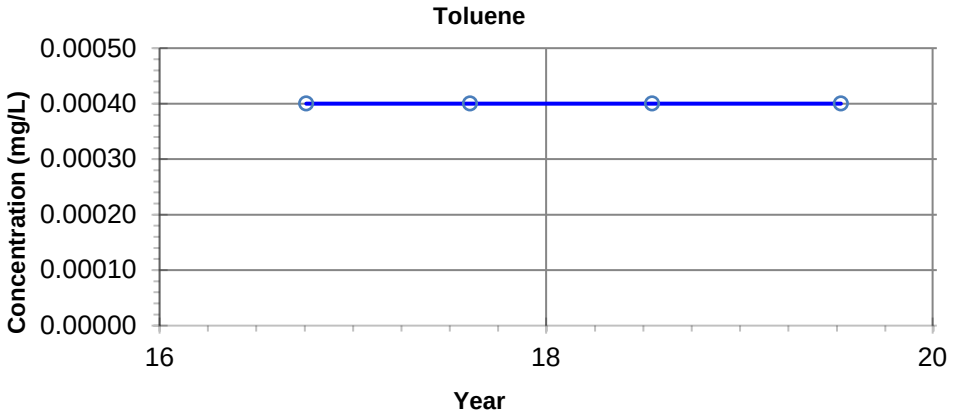

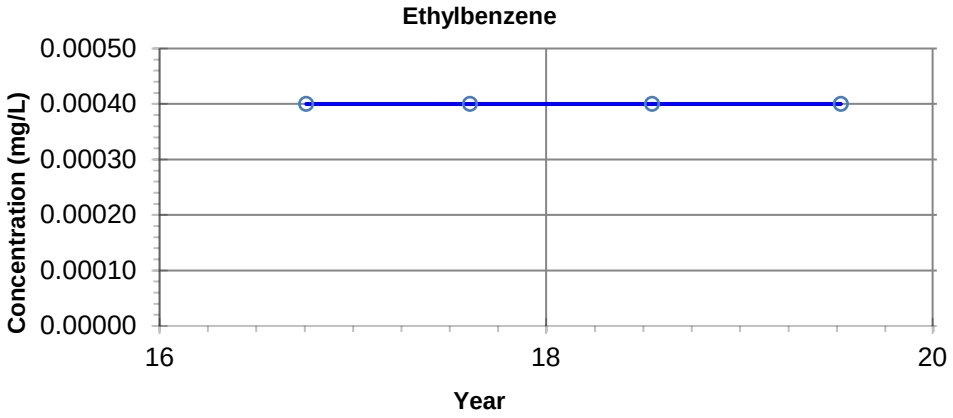

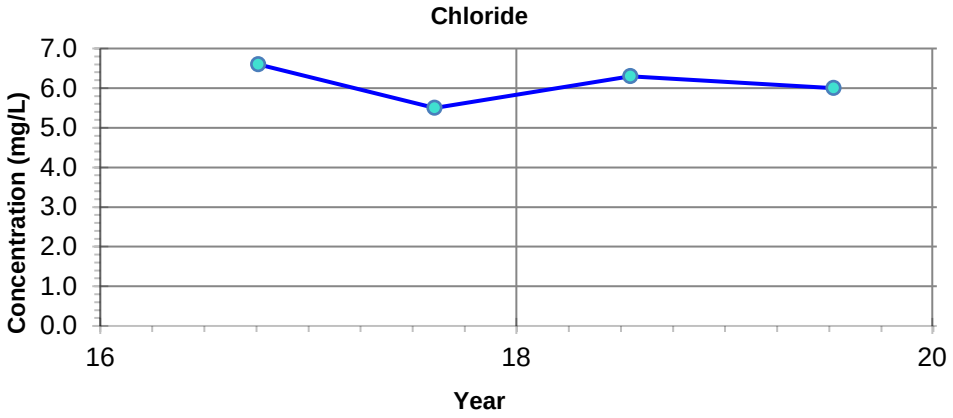

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Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIFP-16-1-3

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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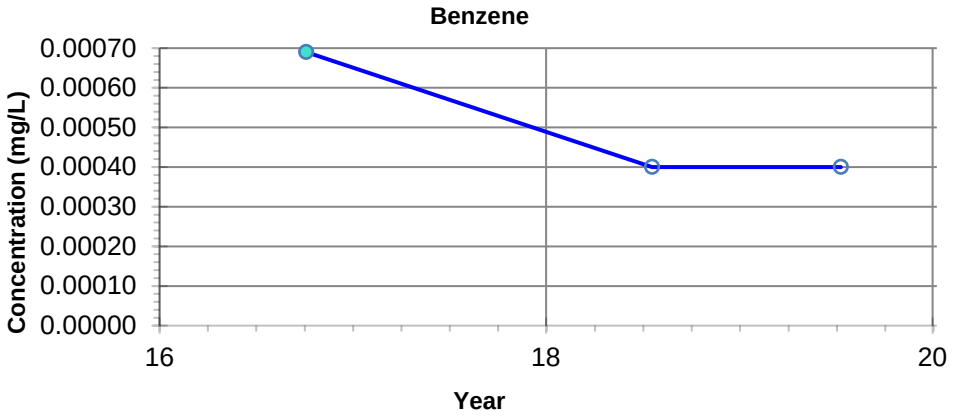

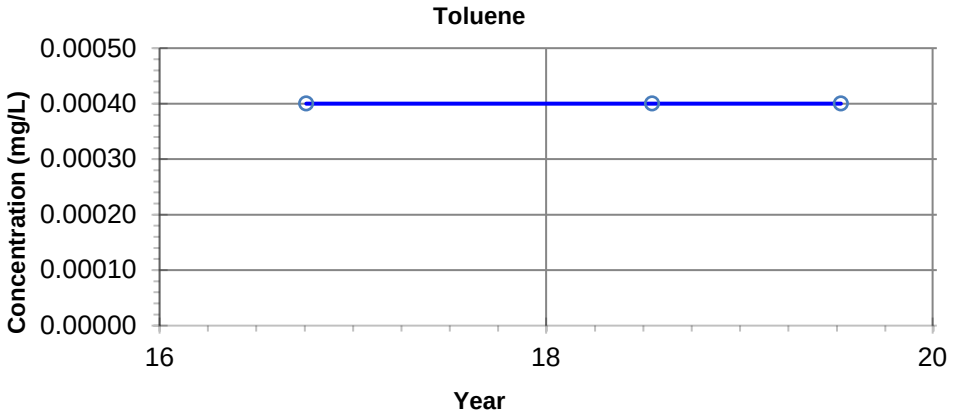

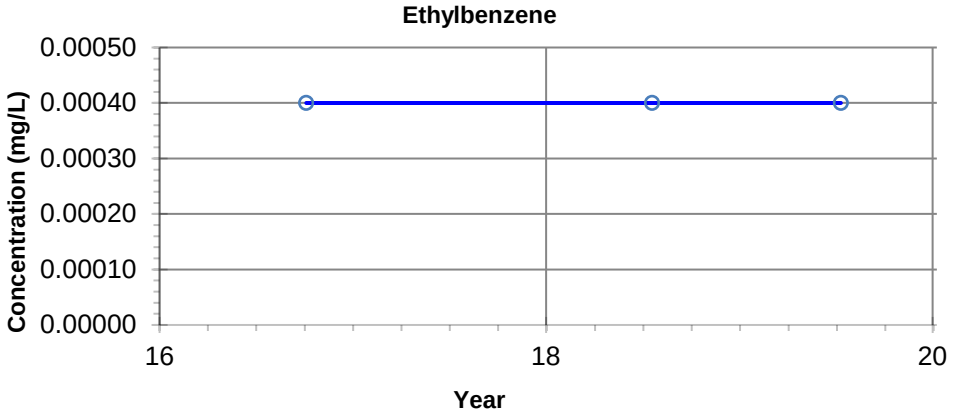

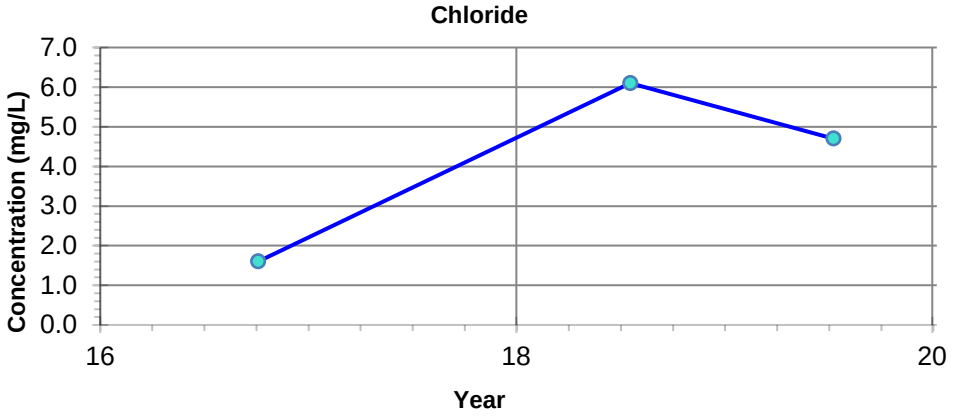

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIFP-16-2-3

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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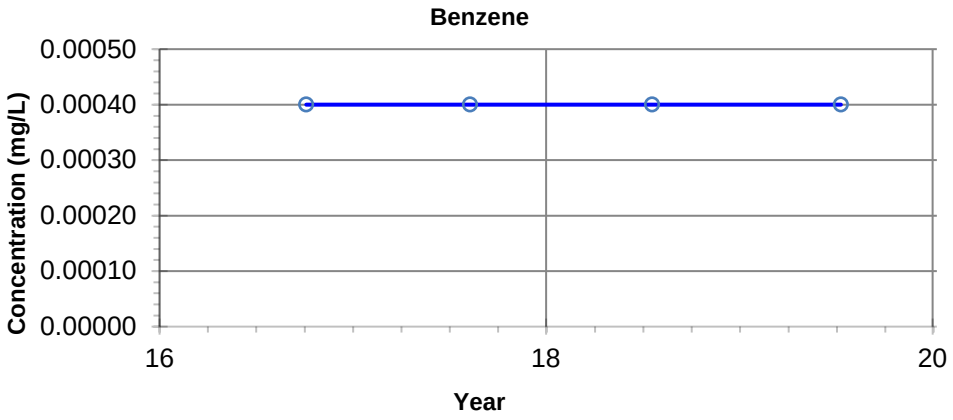

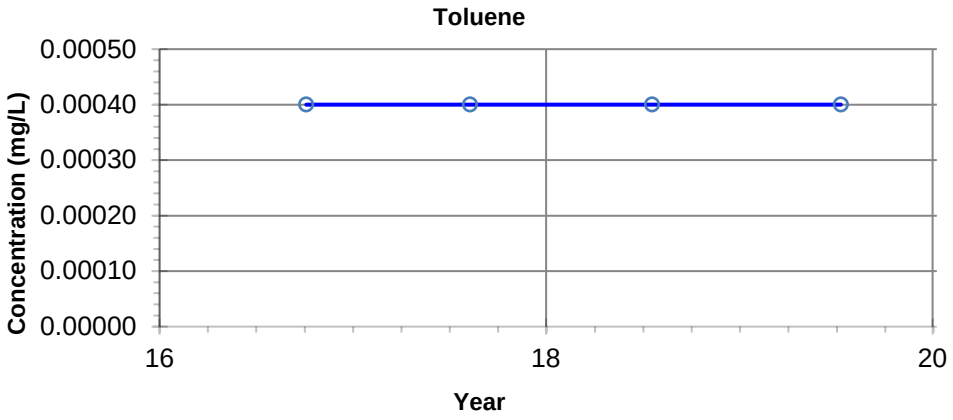

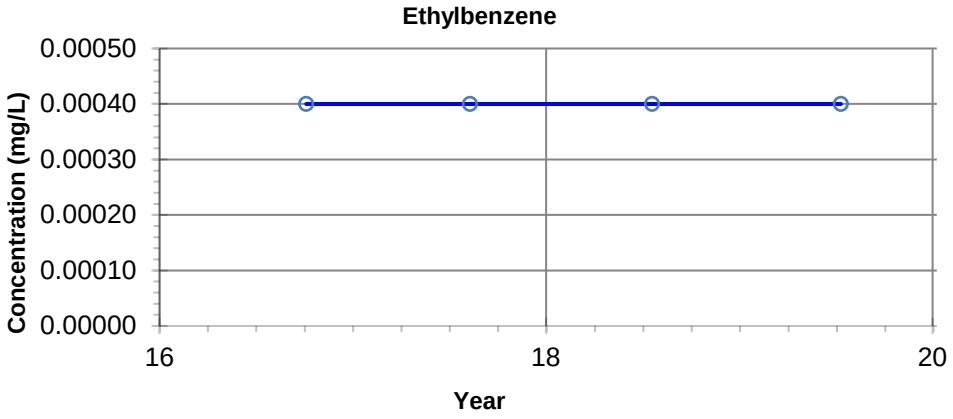

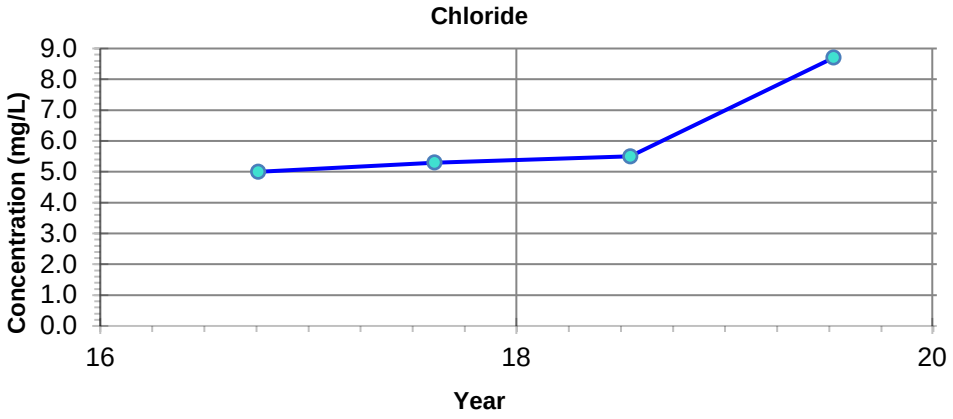

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIFP-16-3-3

27-Mar-2020 date	NA edited by	JC drawn by	NA app by

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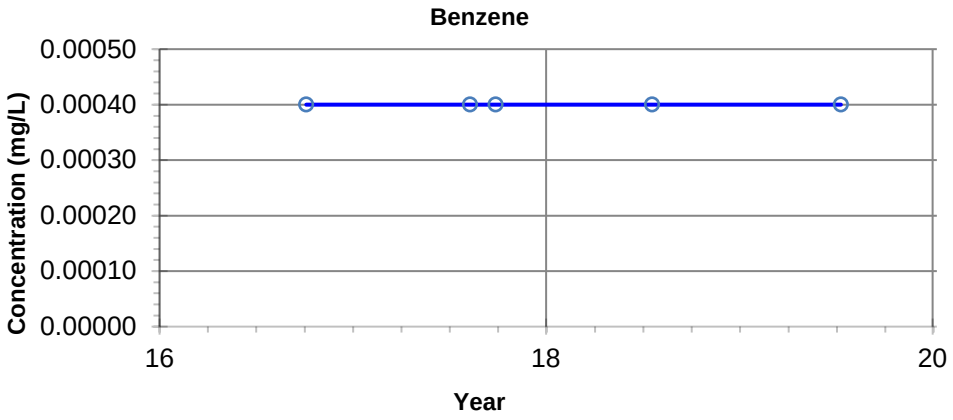

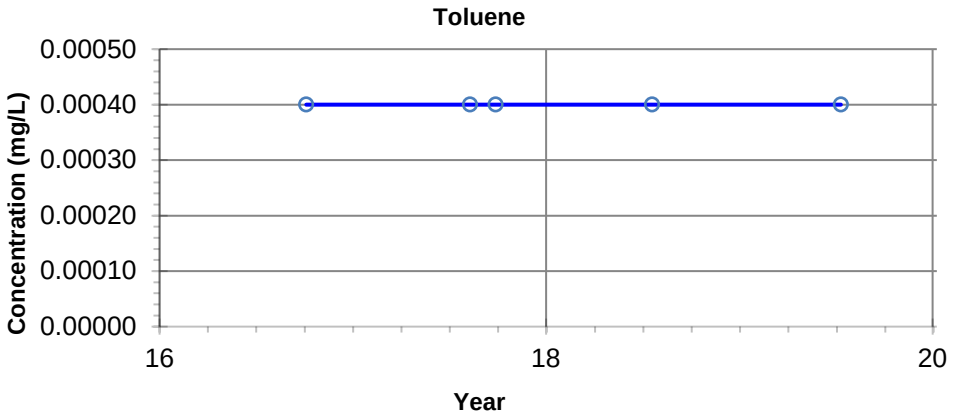

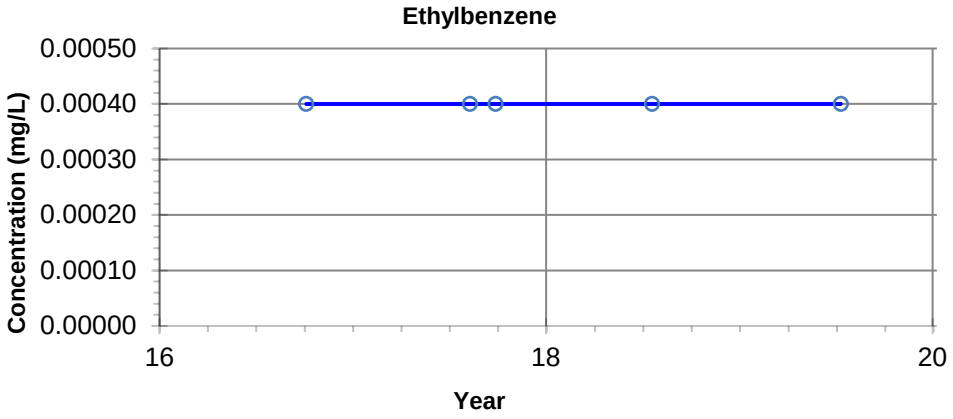

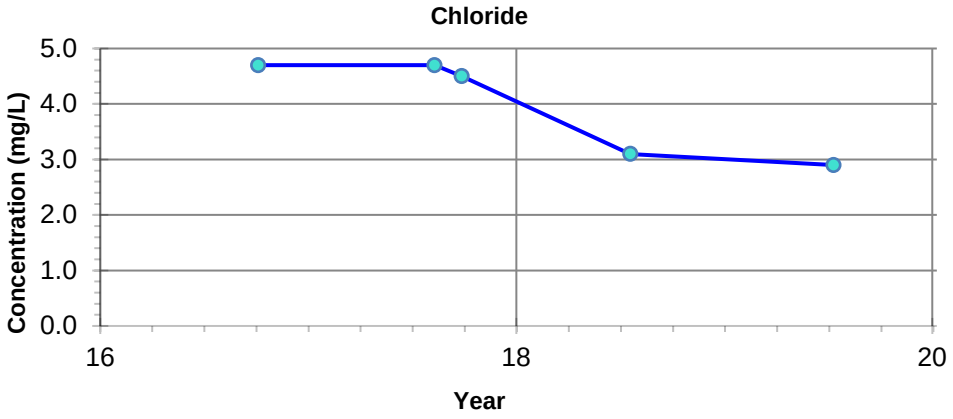

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Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIFP-16-SW1

27-Mar-2020 date	NA edited by	JC drawn by	NA app by

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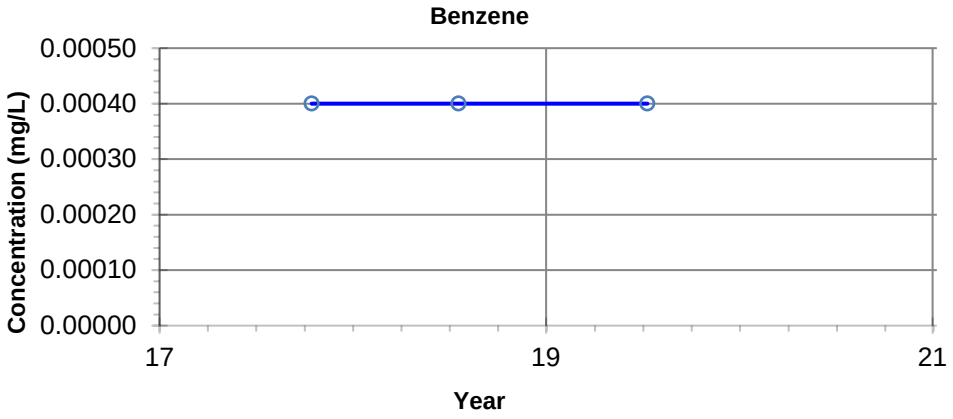

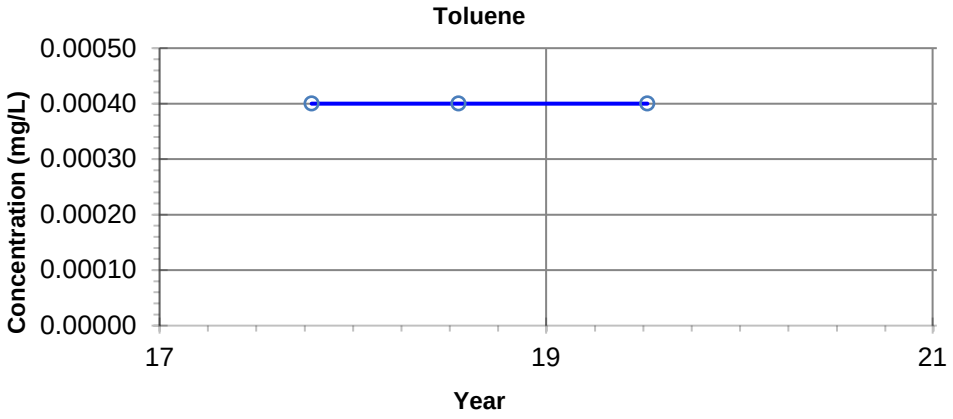

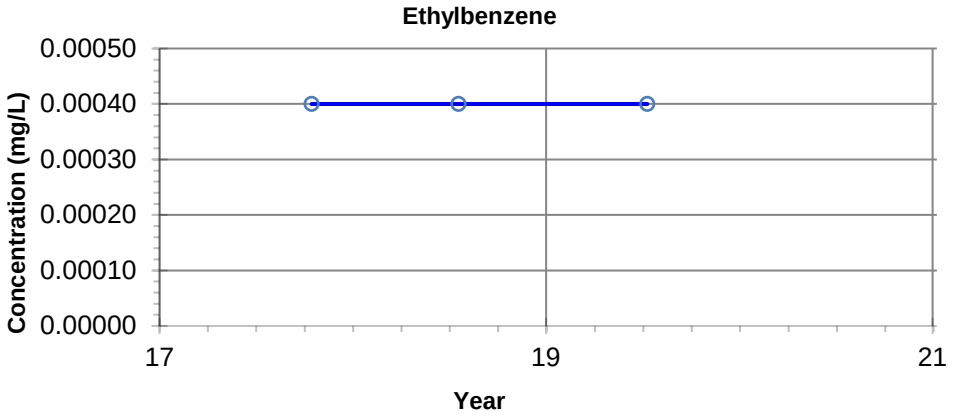

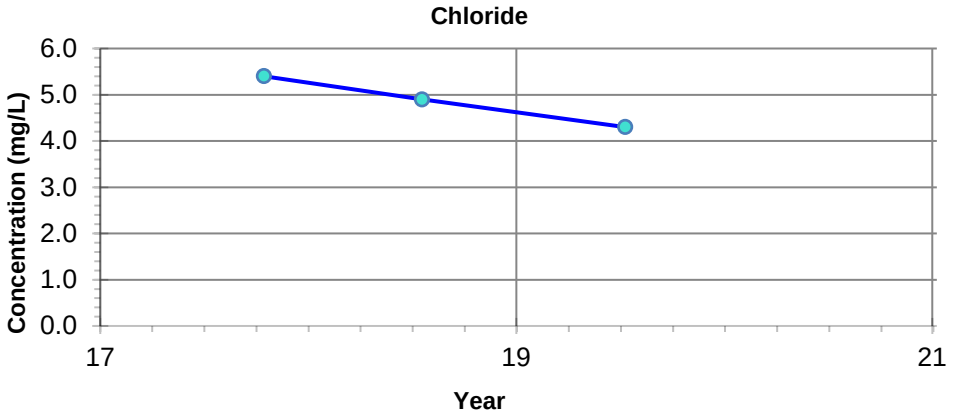

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– · – **GUIDELINE:**
CCME CEQG Freshwater Aquatic Life

Benzene - 0.37 mg/L
Toluene - 0.002 mg/L
Ethylbenzene - 0.09 mg/L
Chloride - 120 mg/L

Imperial Oil Resources
2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: BIFP-17-1-3

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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PROJECT NUMBER:
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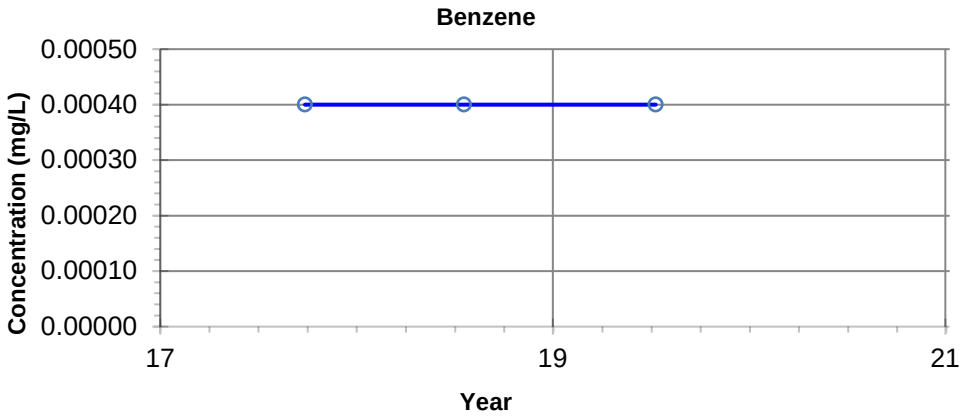

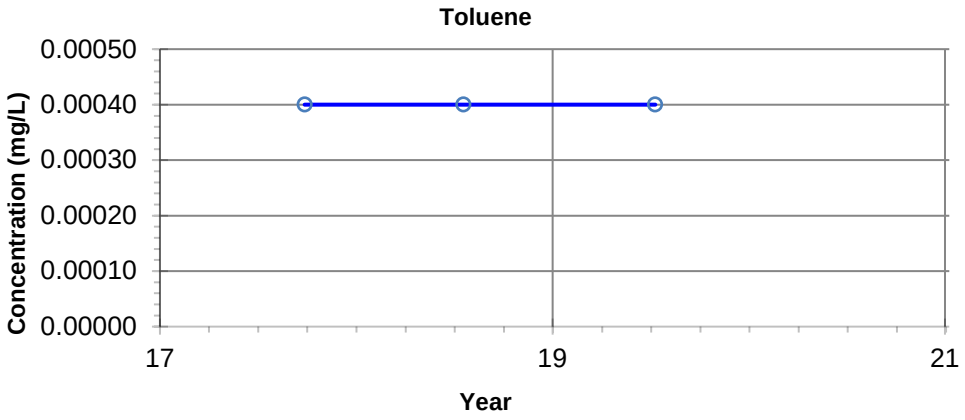

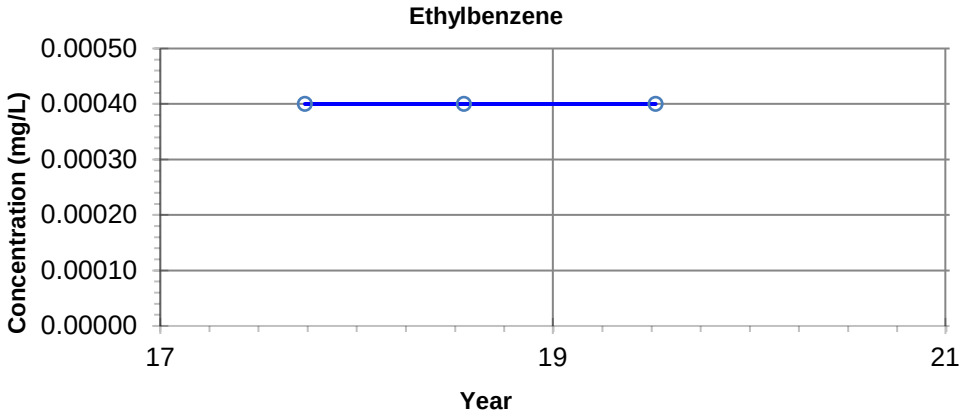

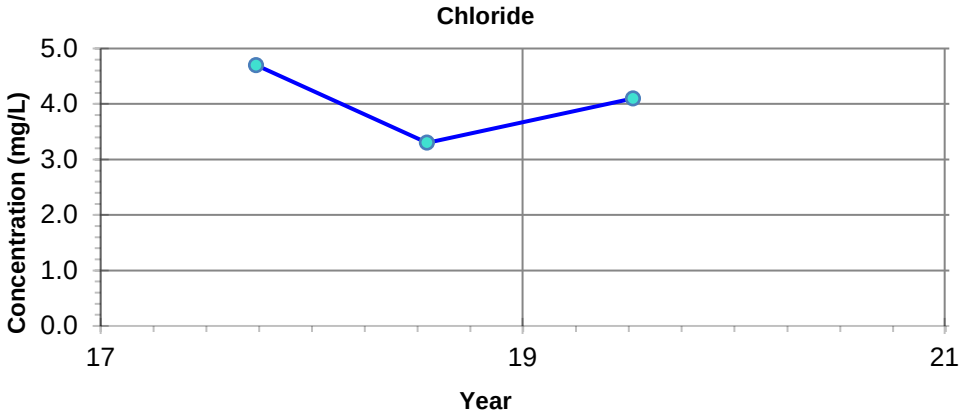

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Petroleum Hydrocarbon and Chloride Concentrations
Location: BIFP-17-SW2

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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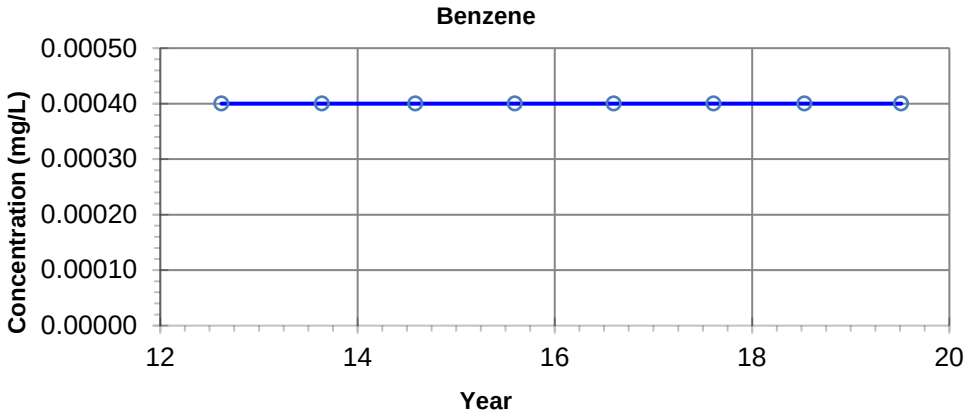

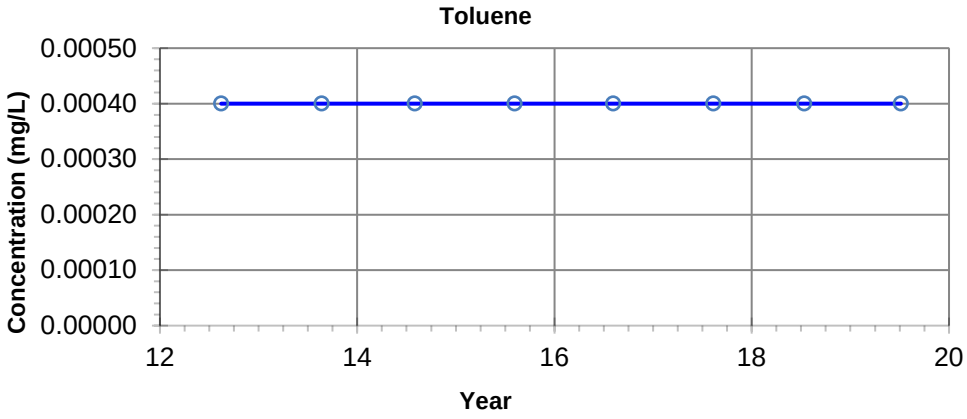

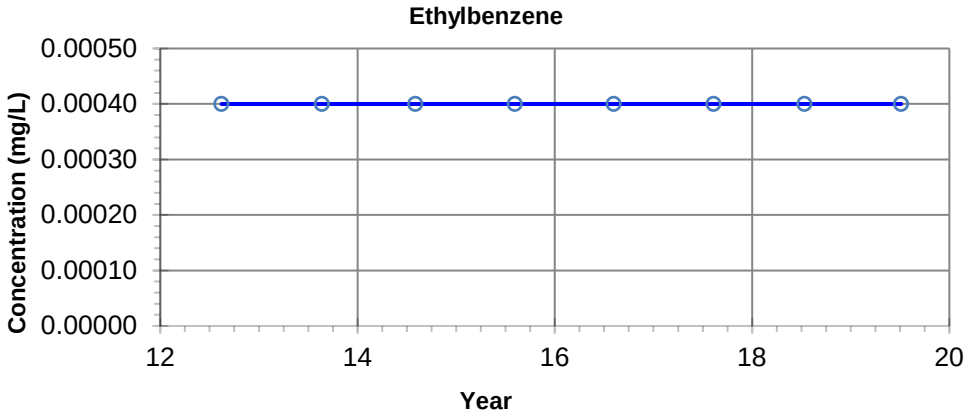

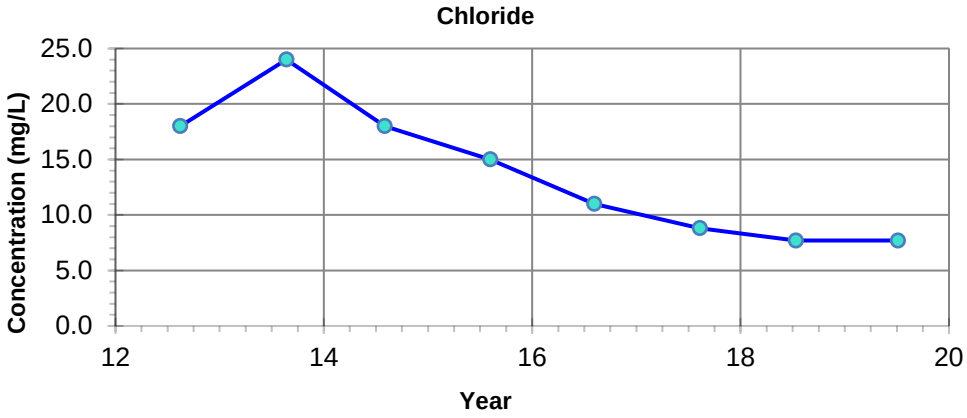

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Petroleum Hydrocarbon and Chloride Concentrations
Location: BIBG-12-2-4

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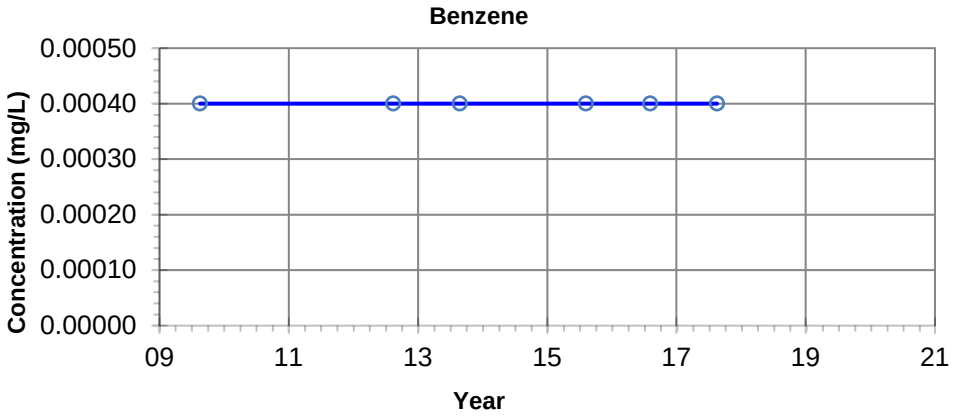

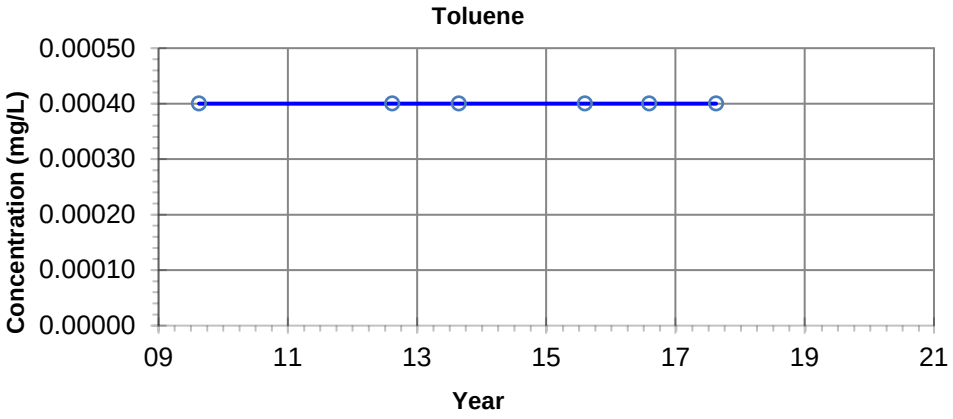

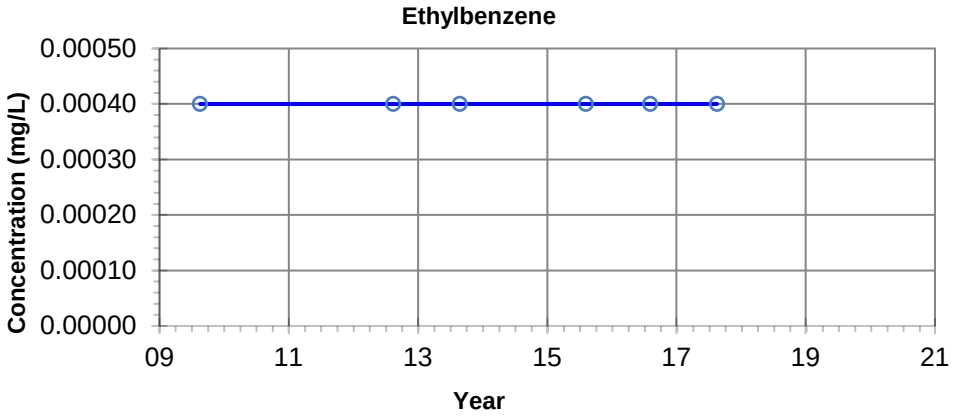

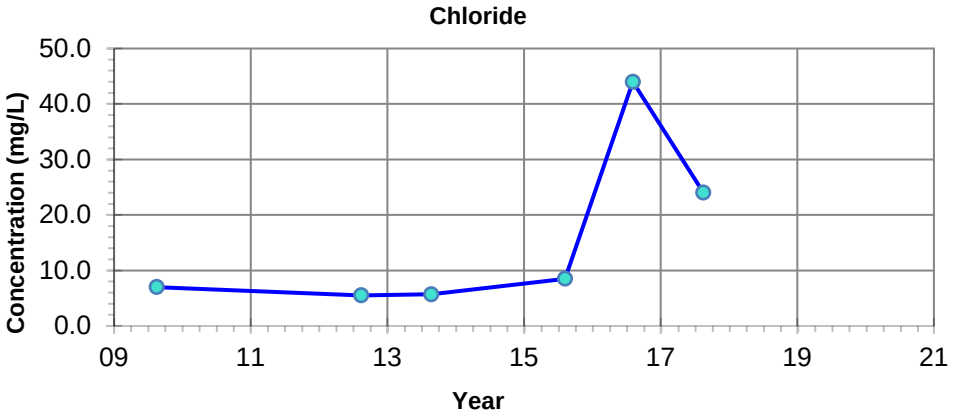

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2019 Annual Closure and Reclamation Progress Report

Petroleum Hydrocarbon and Chloride Concentrations
Location: GIP9 09-1-4

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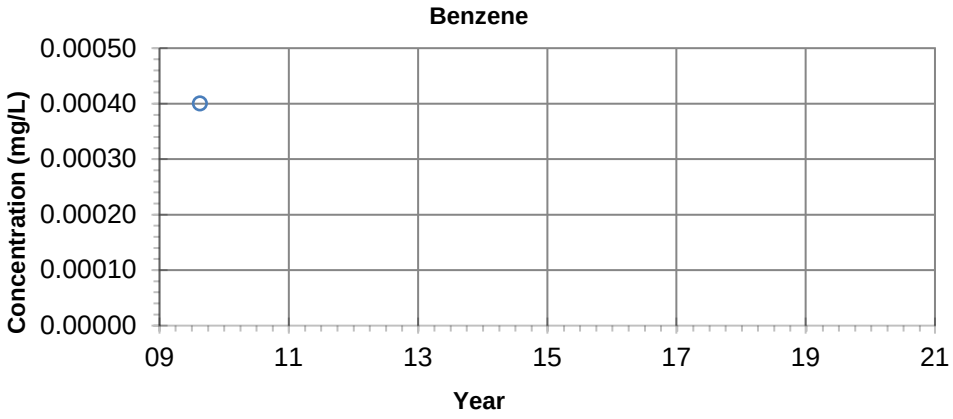

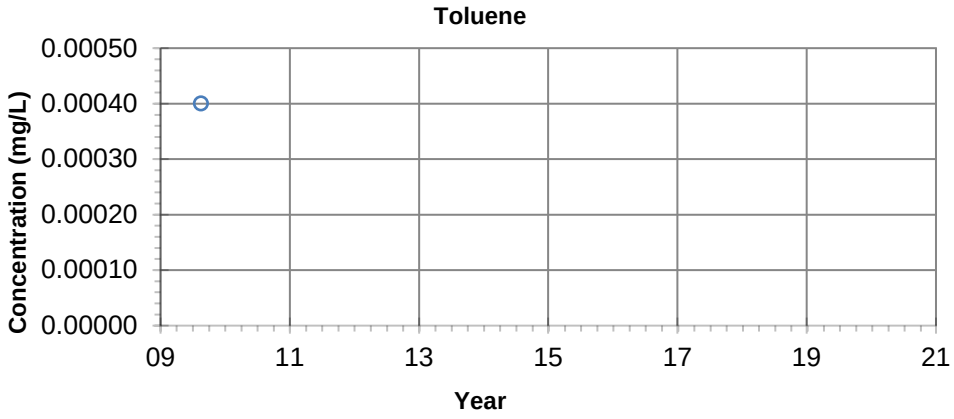

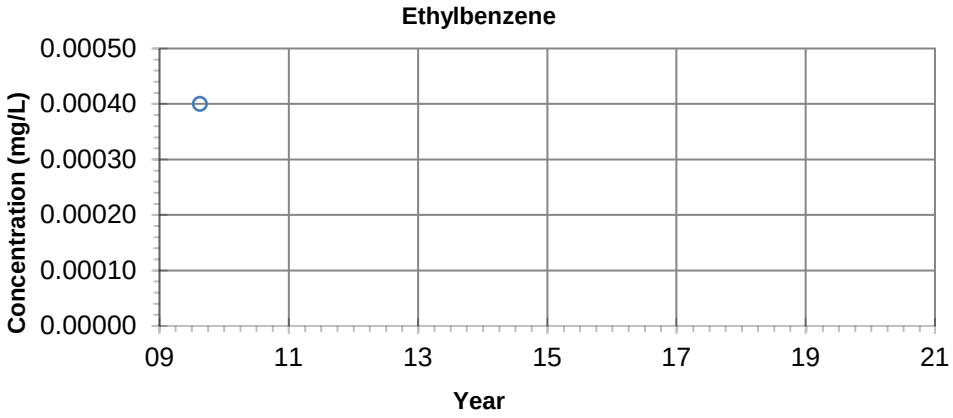

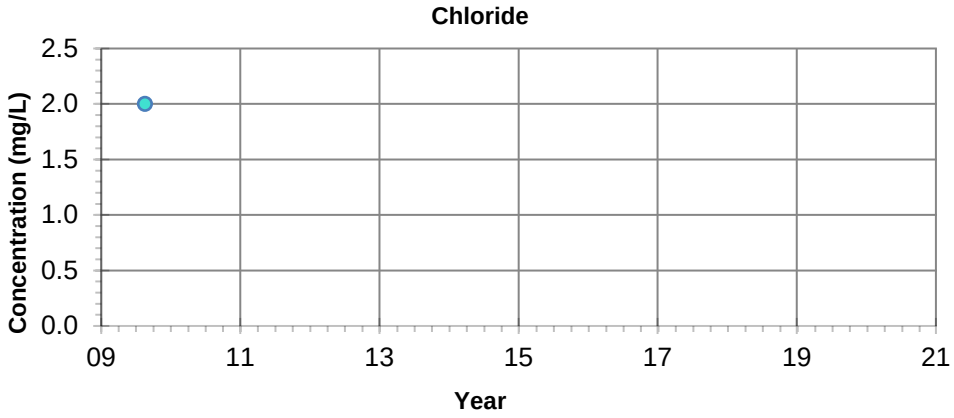

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Location: GIT10 09-1-4

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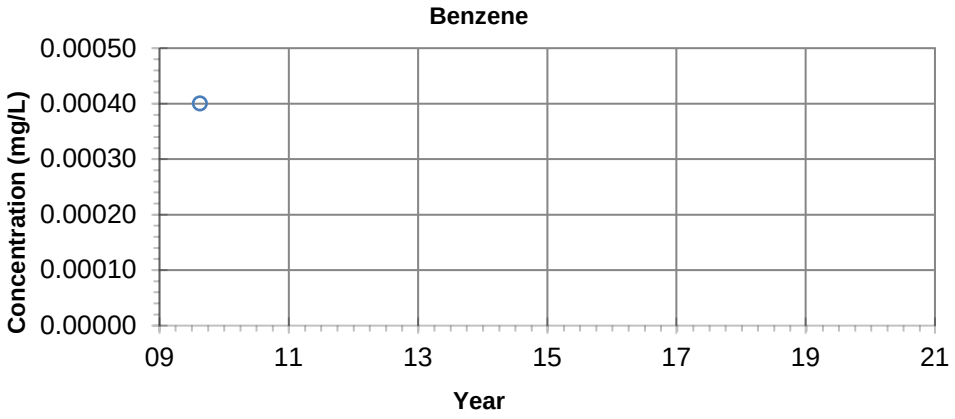

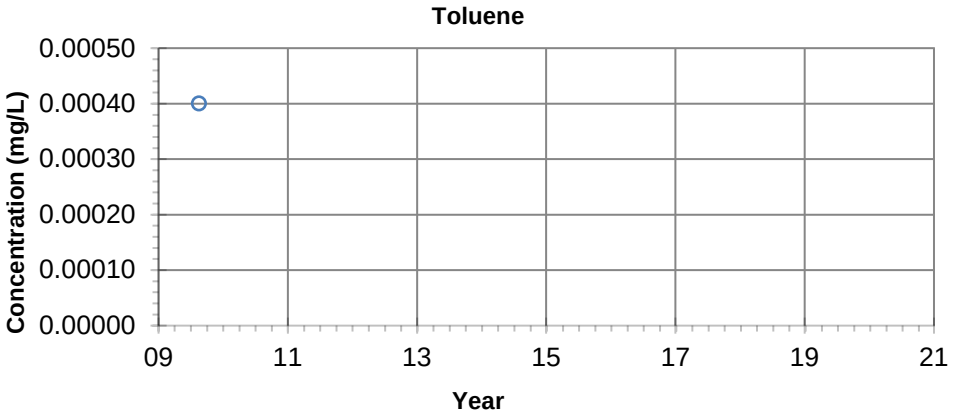

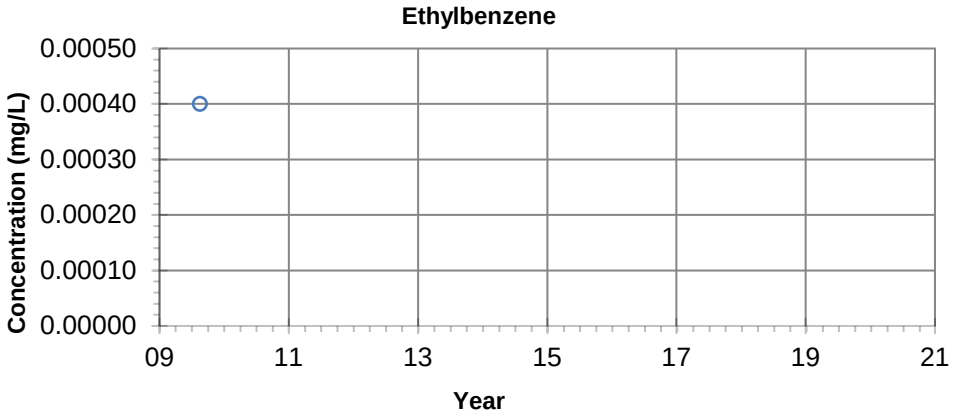

***** No Chloride Data *****

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Petroleum Hydrocarbon and Chloride Concentrations
Location: GIT10 09-2-3

27-Mar-2020 date	NA edited by	JC drawn by	NA app by

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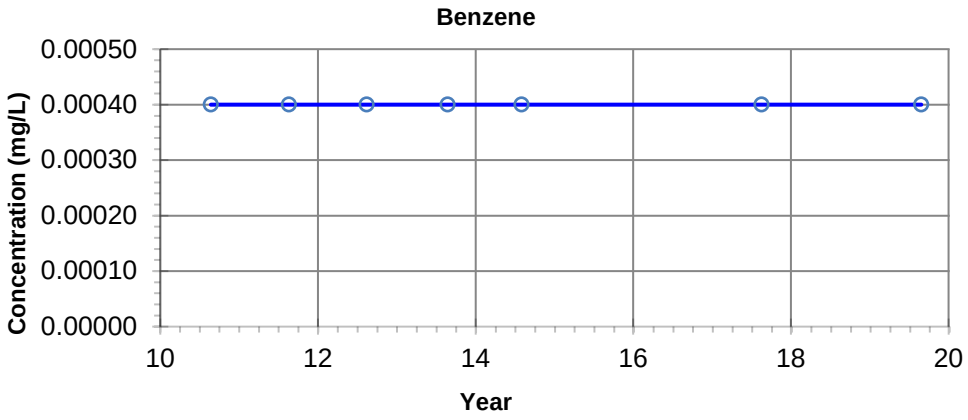

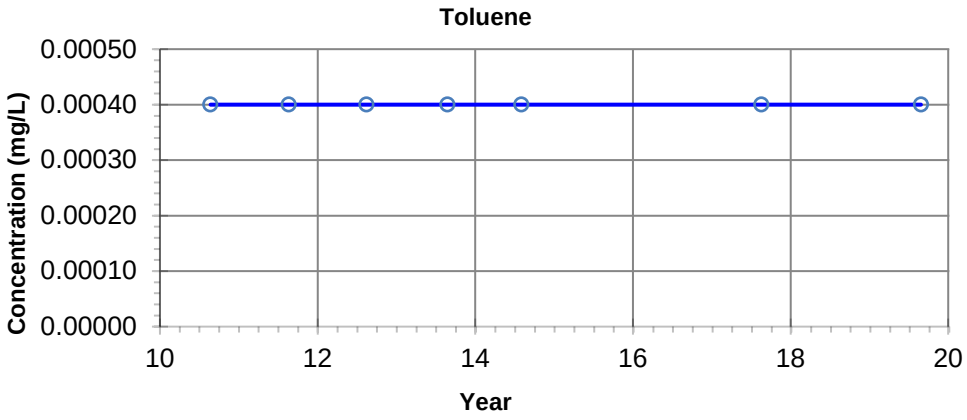

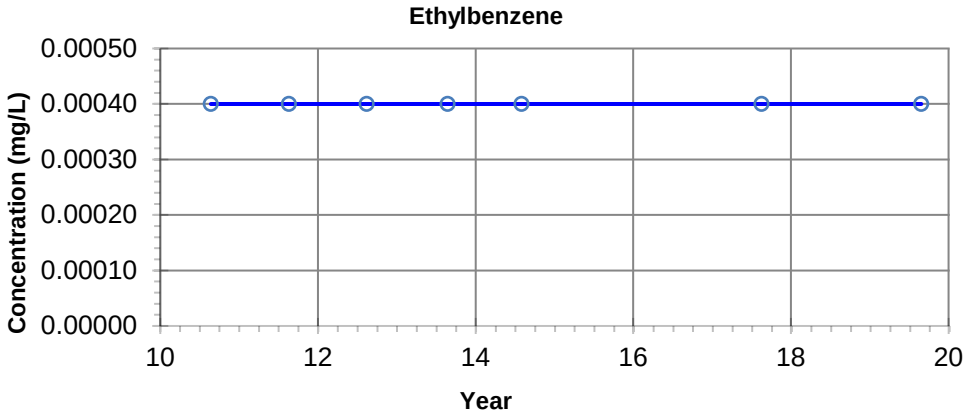

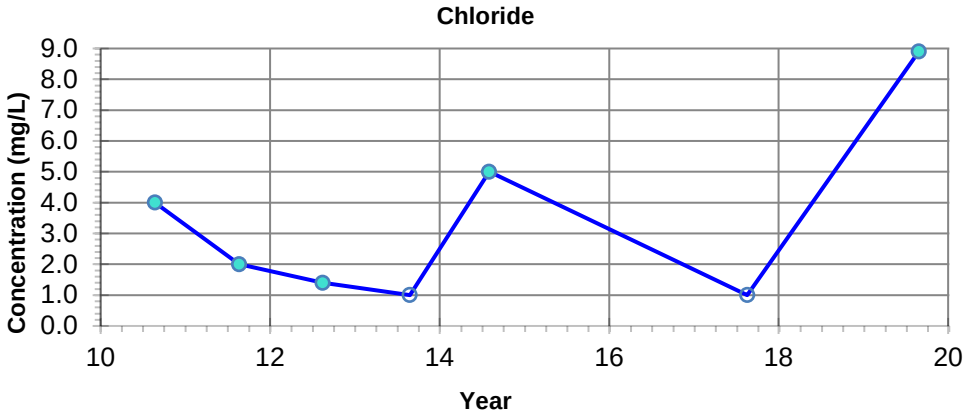

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Petroleum Hydrocarbon and Chloride Concentrations
Location: GI SW05

27-Mar-2020	date	NA	edited by	JC	drawn by	NA	app by

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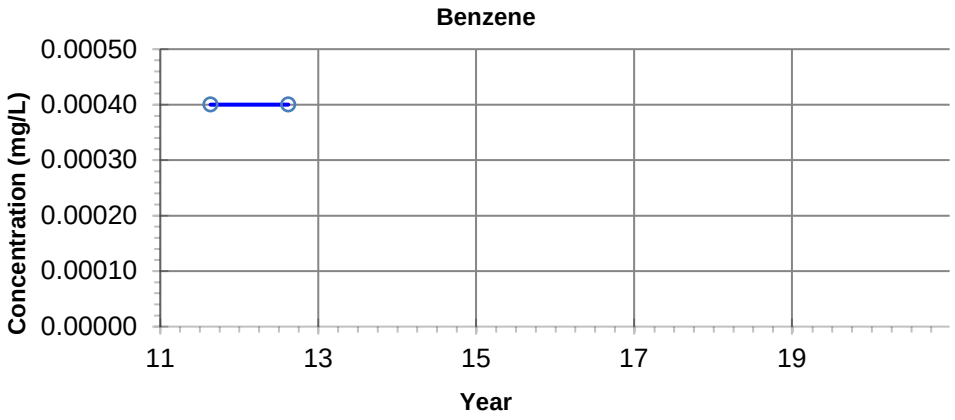

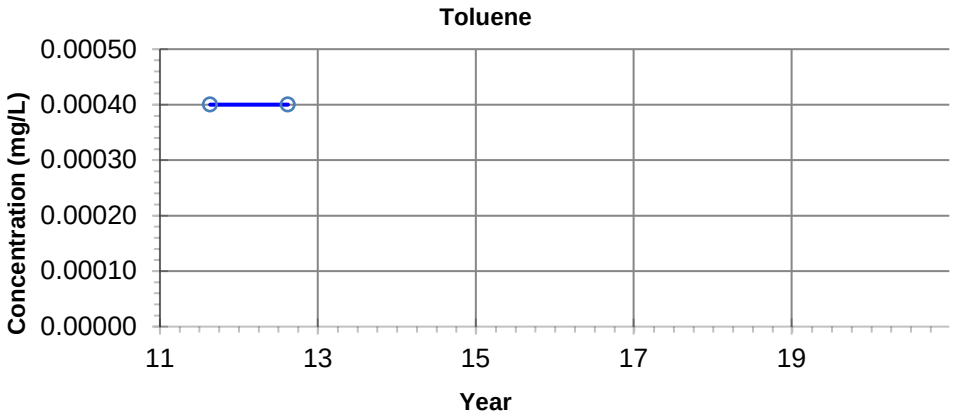

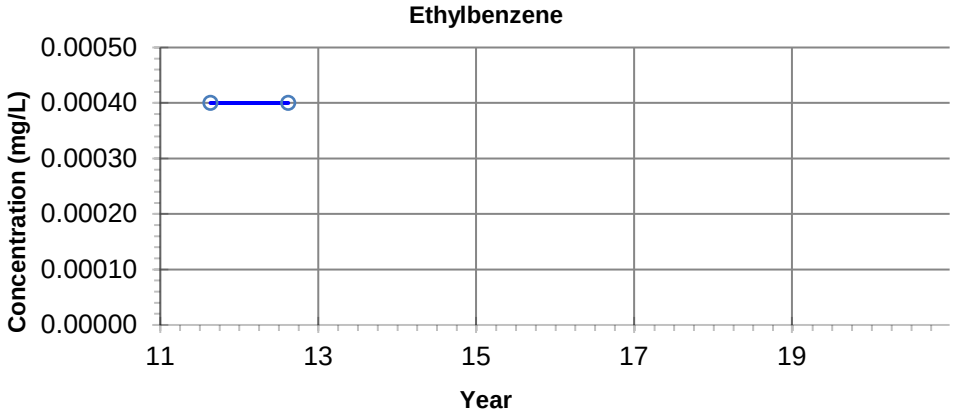

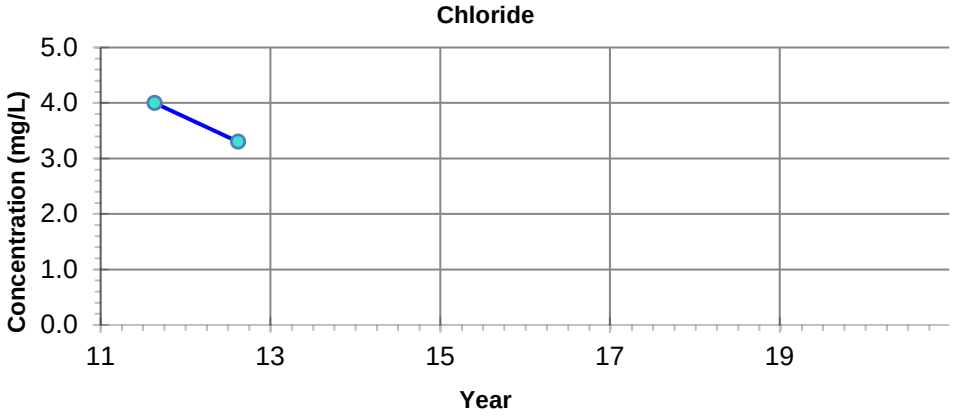

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2019 Annual Closure and Reclamation Progress Report

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Location: GIBG-10-1-5

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Appendix 13
Norman Wells Closure and Reclamation Work Areas Summary

Appendix 13
Norman Wells C&R Work Areas Summary

Norman Wells Area	Current APEC Number	Phase 1 ESA	Phase 1 ESA Update	Phase 2 ESA - Geophysics	Phase 2 ESA - Drilling, Test-Pitting, Grab Sampling	Groundwater Monitoring	Dismantling/ Demolition	Remediation	Surface Restoration	Current Status	Planned 2020 Activities
Mainland West											
Former Battery #1 (LH1 Area)	MW-2	1999	2008	2008	2008, 2010	2008-2013	circa 1980			Phase 2 assessment partially complete.	
CPF	MW-7	1999	2008		1997, 1998, 2006, 2008, 2009	1997-present				Partial phase 2 delineation.	Groundwater Monitoring.
CPF Flare Stack	MW-8		2008		1998, 2008, 2009	1998-present				Partial phase 2 delineation.	Groundwater Monitoring.
C-27X Wellsite	MW-10				2013		2015			Flowline break assessment completed in 2013. Well head cut and capped in 2015, above-ground infrastructure removed. Preliminary Phase 2 completed.	Potentially, a supplemental Phase 2 to support delineation, remediation planning
Historical AST E of E-26X Wellsite	MW-18	1999, 2016	2008							Identified during aerial photograph review. Not investigated.	
D-27X Utilidor	MW-18	1999	2008	2008	2008	2008-2013				Phase 2 delineation complete.	Groundwater Monitoring.
E-27X Wellsite	MW-11	1999	2008	2013	2008, 2009	2008-present	2014			Well cut and capped in 2014, above-ground infrastructure was removed. Preliminary Phase 2 ESA completed.	Potentially, a supplemental Phase 2 to support delineation, remediation planning Groundwater Monitoring.
F-28X Wellsite	MW-3	1999	2008	1997, 2009	1997, 1998, 2009, 2010	1997-2015				Phase 2 delineation partially complete, Screening Level Risk Assessment complete.	Groundwater Monitoring.
F-29X & G30X Wellsites	MW-5	1999	2008	2008	2008, 2009, 2010, 2016	2010-2011				Phase 2 delineation complete, Screening Level Risk Assessment complete. Supplementary Phase 2 ESA conducted in 2016.	Groundwater Monitoring.
Former Pit/Tank/Dump Site Near LT3	MW-4		2008		2010					Partially delineated.	
Historical Laydown/Camp Area W of CPF	MW-6		2008							Identified during aerial photograph review. Not investigated.	
Historical Excavation by Drill Rig Site by G-22X	MW-12	2016								Identified during aerial photograph review. Not investigated.	
Former AST and Pit W of Cemetery Sump	MW-13	2016			2016, 2019					Preliminary Phase 2 ESA conducted in 2016. Supplementary Phase 2 ESA conducted in 2019. Delineation complete.	
Historical Tank Farm W of E-26X	MW-14	2016								Identified during aerial photograph review. Not investigated.	
Historical AST and Pit N of H-29X	MW-15	2016								Identified during aerial photograph review. Not investigated.	
Historical Pit SE of G-30X	MW-16	2016			2018					Identified during aerial photograph review. Preliminary Phase II ESA was completed in 2018.	
Historical AST W of Settling Pond/CPF	MW-17	2016								Identified during aerial photograph review. Not investigated.	
Historical AST N of E-25X	MW-19	2016								Identified during aerial photograph review. Not investigated.	
Potential historical dump site S of F-28X	MW-20	1999, 2008			2018					Identified during aerial photograph review. Preliminary Phase II ESA was completed in 2018.	
D-36X-1 (dump site E)	MW-33				2018					Identified during aerial photograph review. Preliminary Phase II ESA was completed in 2018. Site requires further delineation.	
Mainland Central											
Former A&R Biocell (ARB) Area	MC-16		2008		2008, 2009, 2010, 2012, 2013	2008-present		2013-present	2016-2018	Phase 2 ESA delineation of historic hydrocarbon issue south of A&R Biocell complete. Biocells A and B decommissioned and reconstructed as larger cell (Biocell 1) in 2012. Remedial excavation of historic hydrocarbon impacts to south initiated in 2013 and continued through to 2016. Reseeding and planting trees of backfilled excavation area in 2016-2018	Groundwater Monitoring. Vegetation Monitoring.
Biocell 1	No APEC assigned, engineered lined cell. Historical impact unrelated to cell covered by MC-16				2012, 2013	2012-present				Biocell 1 constructed in 2012. Replaced decommissioned A&R Biocells A and B. Ongoing treatment of hydrocarbon affected soils.	Groundwater Monitoring.
Biocell 2	No APEC assigned, engineered lined cell				2015	2015-present				Biocell 2 constructed in 2014 in former "Yard D" area. Ongoing treatment of hydrocarbon affected soils.	Groundwater Monitoring.
B-33X Wellsite	No APEC assigned. No residual impact related to well operation.	1999	2008		2010, 2017	2010-2014, 2017	2009-2010			Well abandoned in 2009, above-ground infrastructure removed and Phase 2 completed in 2010. Soil washing treatment pad constructed in 2015. Phase 2 ESA completed in 2017.	Groundwater monitoring.

Norman Wells Area	Current APEC Number	Phase 1 ESA	Phase 1 ESA Update	Phase 2 ESA - Geophysics	Phase 2 ESA - Drilling, Test-Pitting, Grab Sampling	Groundwater Monitoring	Dismantling/ Demolition	Remediation	Surface Restoration	Current Status	Planned 2020 Activities
Battery #3 (incl. Process Area)	MC-22	1999	2008	pre-2008, 2008	1993, 1997, 1998, 1999, 2000-2003, 2008, 2013	1997-present	1997-1998	1996, 1999, 2000, 2002		Metals removal from Process Area completed in 1999. Phase 2 delineation complete, completed Screening Level Risk Assessment. Sampled Tank Farm and Flare Pit areas in 2012.	Groundwater Monitoring. Develop Management Plan for BT3.
Landfarm, Debris Storage and Dump Site North of Battery #3 Flare Pit	MC-17		2008	2011	1998, 2010, 2011, 2018			1996-2004		Hand sampling completed in 2010, test pit sampling completed in 2011 and 2018; further investigation of dump site required. Some metal debris found.	Groundwater monitoring.
Battery #3 Flare Pit	MC-18	1999	2008		2003, 2008, 2012, 2014, 2017, 2018			2002, 2016		Metals impacted soil removal completed in 2002. 2012 and 2014 supplementary Phase 2 sampling completed. Source removal excavation initiated in 2016. Supplementary Phase 2 ESA completed in 2017 and 2018.	Potentially, a supplemental Phase 2 to support delineation, remediation planning Groundwater monitoring.
Battery #3 Wax Pit	Included with MC-22							1999 (HC removal)	1999		
PCB & Mercury Storage Facility	No APEC assigned						1996				
Bosworth Creek Weir	No APEC assigned	1999	2008		2007		2005			Complete, weir removed in 2005.	
Bosworth Creek East Bank	MC-19	1999	2008	2008	1998, 2000, 2006, 2008, 2010, 2013	1998-present		2008, 2009	2008, 2009, 2012, 2014-2017	Complete aquatics monitoring, Bank stabilization activities completed in 2012. New drive points in 2013. Bank revegetation activities in 2014 and 2015. Reseeding through erosional area completed in 2016, vegetation assessment completed in 2017.	Repair silt fencing, monitor restored bank for stability, revegetation activities as needed, filling transverse cracks. Groundwater Monitoring.
Bosworth Creek Delta (E-32X Area)	MC-2	1999	2008	pre-2008, 2008	1997, 1998, 1999, 2000, 2001, 2007, 2009, 2010	1997-2014				Further delineation required.	
Bosworth Creek Delta (Well #6 Near D-34X)	MC-14		2008		2001, 2009, 2010	2001-2014				Site visit conducted. Further delineation required.	
Bosworth Creek Delta (D-36X-1 Area)	MC-20		2008		2001, 2008, 2010					Further delineation required.	
E-33X Area - Potential historical dump site, potential grave site	MC-9			pre-2008, 2013	2013 (by Operations)					Proven during Operations work, no investigation to date.	
Two historical pits N of F-33X	MC-5	1999	2008	pre-2008	2009, 2010					Preliminary investigation - hydrocarbons may be due to natural seeps.	
C-32X Wellsite	MC-7	1999	2008	2008	1996, 1997, 2007, 2008	2013-present		1996 (Flowline spill site)	1997	Phase 2 delineation complete.	Groundwater Monitoring.
Potential Buried Pit near C-34X	MC-41	1999	2008	2008						Not investigated.	
F-31X Wellsite and Area	MC-3	1999	2008		1997, 1998, 2000, 2002, 2007, 2010	1997-present		1999 (Flowline spill site)	2000	Phase 2 delineation complete on flowline spill, former dump site to northwest of F-31X.	Groundwater Monitoring.
North of F-31X (buried metal)	MC-1		2008		2010					Limited Phase 2 ESA completed.	
G-32X Wellsite and Area	MC-4	1999	2008		2009, 2010	2009-present				Partially delineated.	Groundwater Monitoring.
LT11 Satellite Building	MC-21	1999	2008	pre-2008, 2008	1997, 2004-2005, 2008	1997-2013				Further delineation required	
Tank 53 Area	MC-8	1999	2008		1999, 2002		2001-2002	2004-present	2009, 2010	Soil remediation partially complete, revegetation in progress	Closure monitoring of vegetation and subsidence.
Tank 401 Area	MC-11	1999	2008		1999, 2002, 2006		2001	2010-2011	2011, 2012	Excavated, treated and backfilled soil, regraded surface in 2011. Recontoured & seeded in 2012.	Monitor vegetation, repair any subsidence.
Tank 401 Pumphouse	MC-12		2008		2010					Limited Phase 2 investigation completed	
D-32X Wellsite	MC-10	1999	2008	pre-2008	2009	2009-2013				Investigated, no issues identified.	
Well Services Yard & Warehouses	MC-6, MC-26	1999	2008		1997, 2013	1997-present		1997-present		Further delineation required.	Groundwater Monitoring.
C-30X Wellsite	MC-27		2008		2010	2010-present				Preliminary Phase 2 investigation; delineation required.	Groundwater Monitoring.
B-30X Wellsite	MC-23		2012	2012	2012, 2013, 2015, 2017, 2019	2012-present	2012			Well abandoned. Cut and capped in 2012, Phase 2 assessment completed in 2013. Phase 2 sampling completed in 2015, 2017, and 2019.	Groundwater monitoring. Develop delineation and management plan.
E-33X Wellsite	MC-45			2013	2016, 2017, 2018, 2019		2014	2014		Well cut and capped in 2014, aboveground infrastructure removed. Preliminary Phase 2 ESA was completed. Supplementary Phase 2 ESAs completed in 2016 - 2019.	Potentially, a supplemental Phase 2 to support delineation, remediation planning on wellsite. Groundwater monitoring.
Former pit(s) SW of D-34X on Bosworth banks	MC-15	1999	2008		2009					Limited Phase 2 ESA completed. Further delineation required.	
Possible grave site S of Tank 401 Pumphouse	MC-13		2008							Anecdotal information from site interviews. Not investigated.	
Historical AST Northeast of Biocell 2	MC-24	2016								Identified during aerial photograph review. Not investigated.	
Former Helicopter Pad	MC-25	2016			2010					Identified during aerial photograph review. Not investigated under pad, limited investigation to East of pad.	
Material (metal, wood debris) pushed over bank, NW of F-31X Injection Facility and potentially extending to N of D-31X	MC-28	2016								Identified during aerial photograph review. Not investigated.	
Bermed area S of F-31X Injection Facility	MC-29	2016								Identified during aerial photograph review. Not investigated.	
Historical Pit SW of H-31X	MC-30	2016								Identified during aerial photograph review. Not investigated.	
Historical Pit NW of F-33X	MC-31	2016								Identified during aerial photograph review. Not investigated.	

Norman Wells Area	Current APEC Number	Phase 1 ESA	Phase 1 ESA Update	Phase 2 ESA - Geophysics	Phase 2 ESA - Drilling, Test-Pitting, Grab Sampling	Groundwater Monitoring	Dismantling/ Demolition	Remediation	Surface Restoration	Current Status	Planned 2020 Activities
Historically cleared and bermed area W of Tank 401 pump building	MC-32	2016								Identified during aerial photograph review. Not investigated.	
Historical Pit at D-35-1X	MC-33	2016								Identified during aerial photograph review. Not investigated.	
Historical Pit E of F-35X	MC-34	2016								Identified during aerial photograph review. Not investigated.	
Historical Building and AST E of Battery #3	MC-35	2016								Identified during aerial photograph review. Not investigated.	
Historical Pit at SW corner of Battery #3 Flare Pit	MC-36	2016			2016			2016		Excavated during remedial works at adjacent Battery #3 Flare Pit.	
Historical AST along road NE of Battery #3 Flare Pit, NW of C-34X wellsite	MC-37	2016		2011						Identified during aerial photograph review and geophysical investigations. Not assessed.	
Historical ground disturbance S of D-34X	MC-38	2016								Identified during aerial photograph review. Not investigated.	
Potential dump site S of Biocells and Warehouse Access Road	MC-39	1999	2008		2014-2016					Partially investigated during remedial excavation works for Biocell area.	
Potential buried pit NE of E-32-1X	MC-40	1999	2008							Identified during aerial photograph review. Not investigated.	
Historical flowline release N of D-36X	MC-42				1993, 2002					Very limited Phase 2 ESA sampling conducted to date, West of spill area.	
Potential Historical spill site SE of C-30X	MC-43				2010					Limited Phase 2 ESA completed (one borehole).	
Potential grave site SE of D-36X	MC-44									Anecdotal information from site personnel. Not investigated.	
Mainland East											
Former Refinery	ME-7	1999	2008	pre-2008	1993, 97, 98, 99, 2000, 2002, 2003, 2008, 2009, 2012, 2013, 2017, 2018, 2019	1993-present	1996-1997	1999, 2002 excavations		Phase 2 delineation complete, Screening Level Risk Assessment complete. In-situ remediation at Refinery Bank area from 2003 to present. Additional monitoring wells installed between former Refinery and Mackenzie River in 2017. Phase II assessment at former Tank 201 in 2018 and 2019. Phase II assessment at former tanks on upper bench in 2019.	Groundwater Monitoring, operation of in-situ systems. Potentially, a supplemental Phase 2 at former Tank 201 to support development of Remedial Action Plan. Groundwater monitoring.
API Separator	ME-8	1999	2008		2003, 2009	2003-present	1997	1997	1997	Partially delineated.	Groundwater Monitoring.
B-38X Well Area	ME-6	1999	2008	pre-2008	1993, 1997, 1998, 1999, 2000, 2002, 2003, 2008, 2012	1997-present	1992 ongoing	2004-present		In-situ DPE remediation system active seasonally, upgrades and expansion in 2009, expanded solar panel water heater capacity in 2012. Completed 2012 soil & GW sampling to verify current PHC levels in-situ at FTA, LT7, B38.	Groundwater Monitoring, operation of in-situ remediation system.
B-40X Wellsite	Also ME-6	1999	2008		2003, 2008, 2010	2003-present				Phase 2 delineation completed in 2010.	Groundwater Monitoring.
C-36X Wellsite and Historical Dump Site	ME-2	1999	2008		2009, 2010	2009-present				Phase 2 delineation mostly completed in 2010.	Groundwater Monitoring.
C-38X Wellsite	ME-3	1999	2008		1997, 2006, 2008	2008-present		2005		Verification soil sampling at Line 405 Break; Phase 2 delineation complete.	Groundwater Monitoring.
D-42X Wellsite	ME-22				2012					Preliminary Phase 2 ESA completed, impacts proven but not delineated.	
D-44X Wellsite	ME-21	1999	2008	2008	2008, 2009			2010		Remediation complete.	
F-50X Wellsite	No APEC assigned	1999	2008		1997					Surficial sampling/delineation near wellhead completed in 1997. Operational well so no further intrusive work.	
B-42X Wellsite	ME-15	1999	2008	2013	2006, 2010, 2017	2017	2014			Phase 2 delineation completed in 2010, geophysical investigation completed in 2013, wellhead/flowline cut and cap and limited Phase 2 completed in 2014. Supplementary Phase 2 completed in 2017.	Reclamation as required to meet CCME Industrial Land Use Standards. Groundwater monitoring.
B-35X Wellsite	ME-27		2012	2012	2012	2012-present	2012			Well abandoned. Cut and capped in 2012, Phase 2 assessment of wellhead area complete in 2012. Ground disturbance and former AST area identified during aerial photograph review to W of wellhead, not investigated.	Groundwater Monitoring. Potential excavation.
Fire Training Area	Also ME-6	1999	2008	pre-2008	1993, 1998, 1999, 2000, 2003, 2008, 2012, 2019	1998-present	1992-2008	2008-present		In-situ DPE remediation system active seasonally, upgrades and expansion in 2009. Upgrades ongoing to engineered system in 2013-2014. Phase II assessment completed in 2019.	Groundwater Monitoring, Operation and Optimization of In-situ Remediation System.
Former Pits (South of B-39X)	ME-5		2008		2009, 2010					Phase 2 delineation incomplete.	
Reduced Crude Flare Pit	ME-10	1999	2008	pre-2008	1993, 1998, 1999, 2003, 2009	1998-present	2002	2002, 2003	2004	Phase 2 delineation completed.	Groundwater and Vegetation Monitoring.
Potential Dump Site SW of RCFP	ME-34	1999	2008		2015					Preliminary Phase 2 test-pitting completed in 2015, proven but not delineated.	

Norman Wells Area	Current APEC Number	Phase 1 ESA	Phase 1 ESA Update	Phase 2 ESA - Geophysics	Phase 2 ESA - Drilling, Test-Pitting, Grab Sampling	Groundwater Monitoring	Dismantling/ Demolition	Remediation	Surface Restoration	Current Status	Planned 2020 Activities
Refinery Bank, Seeps, Former Flare pit	ME-17	1999	2008	pre-2008	1993, 1998, 1999, 2001, 2003, 2008, 2009, 2010, 2012, 2013	1998-present		1999, 2003-present		In-situ remediation system active, groundwater pumping system upgraded to run year-round in 2012, MPE running seasonally, Screening Level Risk Assessment complete, soil & gw sampling. Drilling on beach area in 2013. Upgrades to engineered systems ongoing 2013-14.	Groundwater monitoring, operation and optimization of in-situ remediation system.
Historical Dump site SW of Seepage Lake	MO-1	1999								Anecdotal evidence from site interviews. Not investigated.	
Seepage Lake	MO-2	1999								Anecdotal evidence from site interviews. Not investigated.	
Historical Dump site at West end of Airport Runway (S Side)	MO-3	1999, 2016								Identified during aerial photograph review. Not investigated.	
Airport Landfill (N Side)	MO-5	1999	2008	pre-2008	1998	1998-2013				Preliminary Phase 2 complete.	
Airport Landfarm	MO-4	1999	2008					1996-2004		Closure report complete.	
Potential buried crushed barrels, SW of Mainland Sumps Area	MO-6	1999	2008							Anecdotal evidence from site interviews and IOL map of known historical dump sites. Not investigated.	
Potential historic drainage ditch between Seepage Lake and Bosworth Creek	MO-7	1999	2008							Anecdotal evidence from site interviews. Not investigated.	
Mainland Tank Farm	ME-12	1999	2008		1993, 1997, 1998, 2001, 2002, 2003	1997-present				Phase 2 delineation partially complete, installed 2 thermistors in the area in 2013.	Groundwater Monitoring. Potentially, a preliminary Phase 2 under former AST at west end of tank farm. Groundwater monitoring.
Historical Dump Site (NE of C-34-1X)	ME-1		2008		2010					Preliminary investigation using hand auger, no issues identified.	
Former Garage Site on Refinery at NWPC Yard	ME-9		2008		2010	2010				Phase 2 Assessment complete.	
Former pipe racks and storage yard in Mainland Tank Farm	ME-13		2008							Anecdotal evidence from site interviews. Not investigated.	
Former Drum Storage South of NWPC Yard	ME-20		2008		2010	2010				Partially delineated.	
Bermed Area in NE corner of Flint Yard	ME-25	2016								Identified during aerial photograph review. Not investigated.	
ASTs formerly situated at S side of Flint Yard		2016								Identified during aerial photograph review. Not investigated.	
Former Fueling Site near Flint shop	ME-19		2008		2010	2010-present				Partially delineated.	Groundwater Monitoring.
Former Camp Site near Flint shop	ME-18		2008		2009	2009-present				Phase 2 Assessment complete.	Groundwater Monitoring.
Potential Historical Pit and Debris N of Mainland Tank Farm	ME-11		2008	pre-2008	2009					Preliminary Phase 2 completed, no issues identified.	
Historical Dump Site NE of Reduced Crude Flare Pit	ME-14		2008							Anecdotal evidence from site interviews. Not investigated.	
Old Well #3	ME-16		2008							Anecdotal evidence from site interviews. Inspected in 2013, no visual surface impression of former well site.	
Historical Storage Area E/SE of C-44X	ME-23	2016								Identified during aerial photograph review. Not investigated.	
Wireline Shop and Contractor Shop	ME-24	2016								Not investigated.	
Unknown historical structure on Embankment, Location of Discovery Well #1, SW of C-37X	ME-28	2016								Identified during aerial photograph review. Not investigated.	
Unknown historical structures on Embankment, W of D-39X	ME-29	2016								Identified during aerial photograph review. Not investigated.	
Former ASTs N of D-39X	ME-30	2016								Identified during aerial photograph review. Not investigated.	
Bulk Sales Yard	ME-31	2016								Identified during aerial photograph review. Not investigated.	
Storage Area E of B-42X	ME-32	2016								Identified during aerial photograph review. Not investigated.	
Historical AST N of road past C-38X pad to Tank Farm	ME-33	2016								Identified during aerial photograph review. Not investigated.	
Potential Old Warehouse site W of D-41X	ME-35	1999	2008							Anecdotal evidence from site interviews. Not investigated.	
Sheet Pile and Metal Debris N of C-41X	ME-36	1999	2008							Anecdotal evidence from site interviews. Not investigated.	
Former Drill Pad N of 8-Bay Building	ME-38	2016								Identified during aerial photograph review. Site visit conducted and surface solids sample collected.	

Norman Wells Area	Current APEC Number	Phase 1 ESA	Phase 1 ESA Update	Phase 2 ESA - Geophysics	Phase 2 ESA - Drilling, Test-Pitting, Grab Sampling	Groundwater Monitoring	Dismantling/ Demolition	Remediation	Surface Restoration	Current Status	Planned 2020 Activities
Sumps											
Mainland Drilling Sump	MS-1	1999	2008, 2012	2008, 2013	1992, 1993, 1997, 1998, 2002, 2008, 2009, 2012, 2013	1997-present	2006	2007, 2008	2008	Decommissioned, contained and capped with surface restoration as of 2009. Phase 2 ESA complete. Placement of fill and re-contouring of areas with identified depressions to prevent surface water collection in 2014.	Vegetation and groundwater monitoring.
Well Services Sump	MS-2	1999	2008	2008	1998, 2002, 2009	1998-present	2006	2007, 2008, 2009	2009	Decommissioned, remediated, restored as of 2009, Phase 2 ESA complete.	Vegetation and groundwater monitoring.
Mainland Sumps 1 to 6	MS-3	1999	2008	2008	1997, 1998, 2002, 2009, 2010, 2012, 2013	1997-present				Decommissioned and capped. Phase 2 ESA complete. Long term management strategy developed in 2014. Fluids removed from Sumps 2, 3 and 4 and depression areas backfilled with clean soil in 2014. Further fluid removal and depression backfilling in 2015 and 2016.	Vegetation and groundwater monitoring.
B-38X Buried Pit/Sump	ME-4	1999	2008	Pre-2008, 2009	1997, 1999, 2000, 2002, 2003, 2006-2007, 2010	1997-present		2007-2008	2008-2009	Surface restoration complete, delineation drilling to south of former sump in 2010. Further delineation required.	Vegetation and groundwater monitoring.
C-27X Sump	MW-9	1999	2008	2005, 2008	2008, 2009, 2013, 2016	2008-present		2015-2016		Discontinued and capped. Supplementary Phase 2 ESA works conducted in 2014. Fluid removed and depression backfilled in 2015. Supplementary Phase 2 ESAs completed in 2015 and 2016, final sump capping in 2016.	Vegetation and groundwater monitoring.
Cemetery Sump	MW-1	1999	2008	2005, 2013	2005, 2008, 2009, 2010, 2013	2008-present		2010	2010	Phase 2 delineation complete, recontouring and interim capping completed 2010, screening Level Risk Assessment completed 2010. Thermistor installed to characterize permafrost.	Vegetation and groundwater monitoring.
Bear Island Sumps 1 to 6	BI-4 and BI-15	1999	2008	pre-2008, 2013	1997, 1998, 2002, 2008, 2009, 2010, 2013, 2014, 2016, 2017	1997-present				Decommissioned and capped. Supplemental Phase 2 ESA works conducted in 2014-2017.	Groundwater Monitoring.
Bear Island											
Former Tank Farm at B.I.T.#5	BI-18	1999	2008		2010	2010-present				Preliminary Phase 2 ESA (one borehole). Further investigation required.	Groundwater Monitoring.
O-45X/O-46X Well Sites (former spill sites)	BI-14	1999	2008	pre-2008, 2008	1997, 1998, 2008, 2009, 2010	1997-present		1997, 1998		Further delineation required.	Groundwater Monitoring.
1979 Landfarm Area	No APEC assigned	1999	2008	2008				1979			
Former Battery Site and Tank Farm Near N-42X	BI-11	1999	2008	2010	1998, 2002, 2009, 2010	1998-present				Further delineation required.	Groundwater Monitoring.
N-42X Well Site (former spill site)	No APEC assigned	1999	2008	pre-2008		2009-present				Phase 2 assessment complete.	Groundwater Monitoring.
Former Battery West of Q-34X (BIBT1 area)	BI-3	1999	2008	pre-2008	2008, 2009, 2010, 2012, 2014, 2016, 2017	2009-present		2014-2015		Phase 2 and remedial excavation works completed in 2014 and 2015. Supplemental Phase 2 ESAs completed in 2015, 2016, and 2017.	Groundwater monitoring.
Tank Farm Near Q-38X	BI-7		2008		2010					Minor surface impacts identified. Area lined/bermed.	
Former Tanks South of R-36X	BI-17		2008		2015-2016	2015-present				Brush clearing, testpit and soil sampling in 2015. Supplemental Phase II ESA works in 2016.	Groundwater Monitoring.
Bear Island Flare Pit (North of N-42X)	BI-10		2008	2011	2011, 2012, 2016, 2017	2012, 2016-present		2014		Remedial excavation for source removal and supplemental Phase 2 ESA works undertaken in 2014. Further Phase 2 ESA works undertaken in 2016 and 2017.	Groundwater monitoring.
Bear Island #1 Well Site, West End	BI-1		2008, 2012	2012	2010, 2012	2012-present				Well abandonment/cut&cap complete. Phase 2 assessment complete. Armouring and PHC soil around wellhead removed.	Groundwater monitoring.
B.I.T.#4 Pigging Station	BI-8		2008		2010					Proven but not delineated.	
Historical Tanks and Buildings W of Sump #1	BI-2		2008		2009, 2010, 2011					Limited investigation; no soils impacts identified, but debris visible in brush.	
Former Tank Farm N of Sump #3	BI-5	1999								Identified during aerial photograph review. Not investigated.	
Former Fuel Storage Area SW of P-37X	BI-6	1999			2015					Proven but not delineated. Area was lined, impacts expected to be confined to surface soil.	
B.I.T.#4 Flowline Break	BI-9		2008							Potential, not investigated.	
Historical Spill Site E of N-44X	BI-12				1998, 2009					Proven, delineated and remediated.	
Historical Spill Site N of N-45X	BI-13				1998, 2009					Proven, delineated and remediated.	
M-43X Line Break	BI-16							2011-2012		RAP developed, site remediated.	
Former Storage Area at Q Pad	BI-19	1999, 2016	2008	2008	2008					Identified during aerial photograph review. Not investigated.	
Historical Pit near P-37X	BI-20	2016								Identified during aerial photograph review. Not investigated.	
Unexplained Clearing near P-38X	BI-21	2016								Identified during aerial photograph review. Not investigated.	
Historical Pit near N-39X	BI-22	1999, 2016	2008		2008					Preliminary Phase 2 ESA. Further investigation required.	

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Historical Pit / Soil Pile near O-43X	BI-23	2016								Identified during aerial photograph review. Not investigated.	
Historical Pit near N-45X	BI-24	2016								Identified during aerial photograph review. Not investigated.	
Unexplained Clearing near O-46X	BI-25	2016	2008							Identified during aerial photograph review. Not investigated.	
Former AST Location SE of Sump #1	BI-26		2008		2015-2016	2016				Preliminary Phase 2 ESA. Further investigation required.	Groundwater Monitoring.
Pipeline release at O-43X	BI-27				2015	2015-2016				Proven, not delineated. Drive point piezometers installed between release and Unnamed Creek in 2015. Further investigation required.	Groundwater Monitoring.
Pipeline release at Q-43X	BI-28				2015					Proven, not delineated. Further investigation required.	
Frenchy's Island											
Well Site, Frenchy's Island East End	FI-1		2008		2010	2010				Phase 2 assessment complete, piezometers destroyed by ice, no further GW monitoring needed.	
Goose Island											
Former Borrow Area (T-10X Area)	No APEC assigned	1999	2008	2008	2009	2009-2010				Phase 2 delineation complete.	
Former Camp Site NE of Q-10X	GI-2	1999	2008		2009					Investigated, no issues identified.	
Former Drilling Sumps (Sump 2, P-9X Area)	GI-3	1999	2008		2009	2009-present				Investigated, no issues identified.	Groundwater Monitoring.
Former Tank Farm Areas (Q-8X Area)	GI-1	1999	2008		2009, 2010	2009-present				Phase 2 Delineation completed 2010.	Groundwater Monitoring.
Possible Old Burn Pit (G.I.T.#4)	GI-8	1999	2008	2008						Anecdotal report from site personnel. Not investigated.	
GIT 7	No APEC assigned	1999	2008	2008						No Phase 2 sampling completed to date.	
GIT 9	No APEC assigned	1999	2008	2008						No Phase 2 sampling completed to date.	
Historical Spill Sites (Q-10X Area)	GI-12	1999	2008		2009					Phase 2 delineation complete.	
Historical Spill Site near O-14X	GI-5	1999	2008		2009					Investigated, no issues identified.	
O-18X Pipeline Break	GI-6				2012, 2013	2012-present				Phase 2 delineation & remedial excavations complete.	Groundwater Monitoring.
Q-06X Pipeline Break	GI-7				2012, 2013					Flowline is active, preliminary surface restoration completed by Imperial	
N-25X Wellsite	No APEC assigned	1999	2008	2008	2009					Phase 2 delineation complete.	
Former Tank Farm SE of P-11X Wellsite	GI-4	1999	2008	2008	2009, 2010	2009-present				Further delineation required.	Groundwater Monitoring.
O-29X Wellsite	No APEC assigned				2017		2014			Well cut and capped in 2014, above-ground infrastructure was removed. Preliminary Phase 2 ESA completed in 2017.	Groundwater Monitoring.
T-08X Wellsite	No APEC assigned						2015			Well Cut and Capped in 2015, above-ground infrastructure removed. Preliminary Phase 2 completed.	
Town Leases											
A-45X	ME-37	1999	2008	pre-2008	2008, 2009, 2013	2013-2015	2009	2013-2015		Phase 2 and 3 delineation complete, well cut and cap in 2009, excavation and recontour complete 2010. Screening Level Risk Assessment complete. Additional Phase 2 delineation remediation of southwest corner complete in 2013. Additional test pitting and remedial excavation works completed in 2014 and 2015.	
Lot 1000	No APEC assigned	1999	2008		2008			2010	2010	Phase 2 and 3 delineation complete, remedial excavation and recontouring completed in 2010.	
Cemetery	No APEC assigned	1999	2008		2008, 2013					Phase 2 in up-gradient area complete.	Continued groundwater monitoring in area upgradient of cemetery.
Other C&R Initiatives											
Landfill / Borrow Area / Biocell Siting					2009, 2010					Limited Phase 2 ESA completed in potential locations. Biocell constructed in Yard D in 2014.	
Metals Stabilization										Co-operative research on-going with Australian Antarctic Research Division, final report received in 2011.	
Soil Ecotoxicity					2016, 2017, 2018					Research with SRC continued in 2010/11 & 2012. Soil samples collected for invertebrate identification. Plant and invertebrate ecotoxicity testing on-going following method development. Cooperative research with Imperial, Queens University, Royal Military College and Advisian.	Continue development of plant and invertebrate ecotoxicity tests with Norman Wells soil.
Revegetation Trial Plots										Plots dismantled at T401 for soil remediation activities in 2011.	

Norman Wells Area	Current APEC Number	Phase 1 ESA	Phase 1 ESA Update	Phase 2 ESA - Geophysics	Phase 2 ESA - Drilling, Test-Pitting, Grab Sampling	Groundwater Monitoring	Dismantling/ Demolition	Remediation	Surface Restoration	Current Status	Planned 2020 Activities
Background Conditions in Soil/Groundwater					various years, 1997 to 2012, 2016	1997-present				Characterized new inferred background locations in 2010 and 2012 to supplement existing information, completed statistical analysis. Background boreholes completed on Mainland, Goose and Bear in 2015. Revised soil background assessment completed in 2016. Updated groundwater background assessment completed in 2017/2018.	Continue annual monitoring to build on existing background groundwater chemistry database.
Monitoring Well Abandonments					2009-2016					Damaged/surplus monitoring wells were abandoned or confirmed destroyed by ice.	
Thermistor Study					2013, 2016					Seven thermistors installed on Mainland. Thermistor installed at Bear Island Sumps.	Download data and report annually on temperature profile trends with depth.
Mackenzie River Scour Study										Field work completed in 2012.	
Former Production Well Abandonments					2012, 2013, 2014, 2015		2012, 2014, 2015			B-30X and B-35X cut and capped in 2012; O-29X, E-27X, E-33X and B-42X cut and capped in 2014. T-08X and C-27X cut and capped in 2015. Full list of abandoned wells as follows: 01X, 02X, 03X, 06X, 17X, A-45X, B-30X, B-33X, B-35X, B-42X, BI01X, BI04X, C1 Loc, C2 Loc, C-27X, D-29X, E-27X, E-33X, F-21X, GI18X, IM1, IM2, M-41X, M-50-1X, MR1, MR2, MR3, MR4, O-29X, P-10X, Q-04X, Q-05X, Q-17X, S.L. 1, S.L. 1A, T-08X. Partially abandoned wells to date are: T-31x, R-29X, R-31X, S-28X, S-30X, S-32X, S-34X, T-29X, T-27X	2019: Completed partial abandonment of 9 wells on BIT 5. No well abandonments planned for 2020.