

November 2014

### **Nanticoke Refinery – Reduction plan summary (OR 455/09)**

Provincial regulations set out requirements for business owners to inform Ontarians about the use and creation of reportable substances in their communities. Under the Toxics Reduction Act (TRA), companies are required to develop reduction plans for prescribed substances.

Petroleum refineries process crude oil to manufacture finished products, such as gasoline and heating oil, that are used and valued by our society. Crude oil may contain varying quantities of the substances covered under the TRA. Through the tightly controlled multi-step refinery operation, a variety of substances are used, created and transformed within contained piping and vessels. Finished products are regulated for both content (sulphur levels, for example) and use (pollution controls and higher mileage vehicles). In addition, Imperial Oil has comprehensive programs in place at all its facilities to reduce waste, to prevent spills and leaks, to reduce fugitive emissions, and to train personnel on the environmental responsibilities of their role.

The following summary of the reduction plan has been prepared in accordance with Section 8 of the TRA and the requirements of Section 24 of Ontario Regulation 455/09, as amended from time to time. The summary accurately reflects the current version of the plan.

In 2014, Nanticoke refinery prepared a new plan for the following substance:

- Hydrogen cyanide

The following substances also required plans in 2014 under subsection 3(1) of the Act based on 2013 toxic substance quantifications. These plans were prepared in previous years and remain valid in 2014.

- Ammonia (total)
- Antimony (and its compounds)
- Benzene
- Cresol (all isomers, and their salts)
- Cyclohexane
- Diethanolamine (and its salts)
- Ethylbenzene
- Ethylene
- HCFC-22
- n-Hexane
- Hydrochloric acid
- Hydrogen sulphide
- Methanol
- Naphthalene
- Nitrate ion
- Phenol (and its salts)
- Propylene
- Sulphuric acid
- Tetrachloroethylene
- Toluene
- Total reduced sulphur
- Trimethylbenzene, 1,2,4-
- Xylene (all isomers)
- Mercury (and its compounds)
- Cadmium (and its compounds)
- Lead (and its compounds)
- Selenium (and its compounds)
- Acenaphthene
- Acenaphthylene
- Fluorene
- Phenanthrene
- Pyrene
- Carbon monoxide
- Nitrogen oxides (expressed as nitrogen dioxide)
- PM2.5
- PM10
- Sulphur dioxide

- Total particulate matter
- Propane
- Butane (all isomers)
- Butene (all isomers)
- Cycloheptane
- Cyclooctane
- Decane (all isomers)
- Heptane (all isomers)
- Hexane
- Hexene (all isomers)
- Nonane (all isomers)
- Octane (all isomers)
- Pentane (all isomers)
- Trimethylbenzene

# Plan Summary Preview

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## Company Details

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Company Legal Name

Imperial Oil

Company Address

237 4th Avenue Southwest, Calgary (Alberta)

## Report Details

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Facility Name

Nanticoke Refinery

Facility Address

225 2nd Concession, Nanticoke (Ontario)

Update Comments

## Activities

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## Contacts

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Select the Facility Contacts

### Facility Contacts

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Please assign the appropriate contact under each category below.

Public Contact: \*

Jon Harding

Highest Ranking Employee

Person responsible for Toxic Substance Reduction Plan preparation

## Organization Validation

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## Company and Parent Company Information

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### Company Details

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Company Legal Name: \*

Imperial Oil

Company Trade Name: \*

Business Number: \*

## Mailing Address

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Delivery Mode

PO Box

Rural Route Number

Address Line 1

City \*

Province/Territory \*\*

Postal Code: \*\*

## Physical Address

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Address Line 1

City

Province/Territory

Postal Code

Additional Information

Land Survey Description

National Topographical Description

## Parent Companies

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Empty

## Facility Validation

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The information in this section was copied from the Single Window Information Manager (SWIM) at the time the plan summary was created. Please verify the information and update it where required. Please note that any changes made here will only be reflected in this plan summary. To ensure updates reflected in future reports, please ensure the information is updated in SWIM. After making updates in SWIM, return here and click the "Refresh" button to trigger a reload of the SWIM information. Please note all previously entered data

will be modified.

## Facility Information

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Facility Name: *	<input type="text" value="Nanticoke Refinery"/>
NAICS Code: *	<input type="text" value="324110"/>
NPRI Id: *	<input type="text" value="3701"/>
ON Reg 127/01 Id	<input type="text"/>

## Facility Mailing Address

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Delivery Mode	<input type="text" value="General Delivery"/>
PO Box	<input type="text" value="500"/>
Rural Route Number	<input type="text"/>
Address Line 1	<input type="text" value="225 Concession 2 Concession"/>
City *	<input type="text" value="Nanticoke"/>
Province/Territory **	<input type="text" value="Ontario"/>
Postal Code: **	<input type="text" value="N0A1L0"/>

## Physical Address

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Address Line 1	<input type="text" value="225 2nd Concession"/>
City	<input type="text" value="Nanticoke"/>
Province/Territory	<input type="text" value="Ontario"/>
Postal Code	<input type="text" value="N0A1L0"/>
Additional Information	<input type="text"/>
Land Survey Description	<input type="text"/>
National Topographical Description	<input type="text"/>

## Geographical Address

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Latitude **	<input type="text" value="42.83750"/>
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Longitude **	<input type="text" value="80.05170"/>
UTM Zone **	<input type="text" value="17"/>
UTM Easting **	<input type="text" value="578000"/>
UTM Northing **	<input type="text" value="4743000"/>

## Contact Validation

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## Contacts

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### Public Contact

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First Name: *	<input type="text" value="Jon"/>
Last Name: *	<input type="text" value="Harding"/>
Position: *	<input type="text" value="Public Relations"/>
Telephone: *	<input type="text" value="5193394015"/>
Ext	<input type="text"/>
Fax	<input type="text" value="5193394491"/>
Email: *	<input type="text" value="jon.s.harding@esso.ca"/>

### Mailing Address

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Delivery Mode	<input type="text"/>
PO Box	<input type="text" value="3004"/>
Rural Route Number	<input type="text"/>
Address Line 1	<input type="text" value="602 Christina Street South"/>
City *	<input type="text" value="Sarnia"/>

Province/Territory \*\*

Ontario

Postal Code: \*\*

N7T7M5

## Employees

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## Employees

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Number of Full-time Employees: \*

299

## Substances

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### 74-90-8, Hydrogen cyanide

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74-90-8, Hydrogen cyanide

## Substances Section Data

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## Statement of Intent

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Are the following included in the Facility's TRA Plan?

## Use

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Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?: \*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility: \*\*

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If 'no', reason in the facility's TRA Plan for no intent to reduce the use of the toxic substance at the facility: \*\*

Hydrogen cyanide is not currently used at Nanticoke refinery.

## Creation

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Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?: \*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the creation of the toxic substance at the facility: \*\*

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If 'no', reason in the facility's TRA Plan for no intent to reduce the creation of the toxic substance at the facility: \*\*

Hydrogen cyanide is typically found at levels below the regulatory reporting threshold during normal refinery operations. The increase in 2013 was due to planned maintenance on the CO boiler that is required for insurance purposes. No technically and economically feasible reduction options meeting the criteria of the Toxics Reduction Act were identified to reduce the creation of hydrogen cyanide at the facility. The facility expects levels of hydrogen cyanide creation to decrease relative to 2013 levels in years with no planned maintenance of the CO boiler.

## Objectives, Targets and Description

### Objectives

Objectives in plan: \*

Hydrogen cyanide is not used at the facility. Hydrogen cyanide is created at the facility in the fluid catalytic cracking unit (FCCU), and is managed by the CO boiler. No technically and economically feasible reduction options were identified to reduce the creation of hydrogen cyanide at the facility. The facility expects levels of hydrogen cyanide creation to decrease relative to 2013 levels in years with no planned maintenance of the CO boiler.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility? \*

No quantity target	Quantity	Unit
<input checked="" type="checkbox"/>	or	<input type="text"/>

What is the targeted timeframe for this reduction? \*

No timeline target	years
<input checked="" type="checkbox"/>	or <input type="text"/>

Description of targets

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility? \*

No quantity target	Quantity	Unit
<input checked="" type="checkbox"/>	or	<input type="text"/>



## What is the targeted timeframe for this reduction? \*

No timeline target

years



or

Description of Target

## Reasons for Use

Why is the toxic substance used at the facility?: \*

This substance is not used at the facility

Summarize why the toxic substance is used at the facility: \*\*

## Reasons for Creation

Why is the toxic substance created at the facility?: \*

As a by-product

Summarize why the toxic substance is created at the facility: \*\*

Hydrogen cyanide is created in the FCCU during the combustion of nitrogen in the coke.

## Toxic Reduction Options for Implementation

### Description of the toxic reduction option(s) to be implemented

Is there a statement that no option will be implemented?: \*

Yes, we are not implementing

If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your facility is not implementing an option.  
Explanation of the reasons why no option will be implemented: \*\*

No technically and economically feasible options were identified that would be expected to reduce the use or creation of hydrogen cyanide at the facility. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of hydrogen cyanide at Nanticoke Refinery.

### Materials or feedstock substitution

Empty

### Product design or reformulation

Empty

**Equipment or process modifications**

Empty

**Spill or leak prevention**

Empty

**On-site reuse, recycling or recovery**

Empty

**Improved inventory management or purchasing techniques**

Empty

**Good operator practice or training**

Empty

Rationale for why the listed options were chosen for implementation

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX): \*

TRSP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX): \*

TSRP0071

What version of the plan is this summary based on?: \*


New Plan

## 9. TOXIC REDUCTION PLAN CERTIFICATION

### *Highest Ranking Employee*

As of 17 Nov 2014, I, Richard Henderson, certify that I have read the toxic substance  
Date  
reduction plan for the toxic substance referred to below and am familiar with its contents, and to my  
knowledge the plan is factually accurate and complies with the *Toxics Reduction Act, 2009* and Ontario  
Regulation 455/09 (General) made under that Act.

- 74-90-8 Hydrogen cyanide



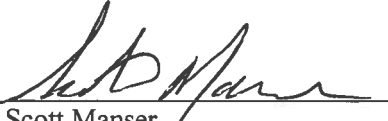
Richard Henderson  
Refinery Manager, Nanticoke Refinery

17 Nov 2014.  
Date

### *Toxic Substance Reduction Planner*

As of October 23, 2014, I, Scott Manser certify that I am familiar with the processes  
Date Planner Name  
at Imperial Oil's Nanticoke Refinery that use or create the toxic substances referred to below, that I agree  
with the estimates referred to in subparagraphs 7 iii, iv and v of subsection 4 (1) of the *Toxics Reduction  
Act, 2009* that are set out in the plan dated October 22, 2014 and that the plan complies with that Act and  
Ontario Regulation 455/09 (General) made under that Act.

- 74-90-8 Hydrogen cyanide



Scott Manser  
Toxic Substance Reduction Planner

TSRP0071  
License Number

10/23/2014  
Date