

Imperial Oil Products and Chemicals Division P.O. Box 3004 Sarnia ON N7T 7M5 B.M. Fairley Refinery Manager Tel: (519) 339-2000

December 18, 2013

Sarnia Refinery - Toxic substance reduction plan summary

Provincial legislation sets out requirements for business owners to inform Ontarians about the use and creation of reportable substances in their communities. Under the Toxics Reduction Act 2009 (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 and modified 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 of 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 plans 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.



Plan Summary Preview **Company Details** Company Legal Name: Imperial Oil Company Address: 237 4th Avenue Southwest, Calgary (Alberta) Report Details Facility: Sarnia Refinery Plant Facility Address: 602 Christina Street South, Sarnia (Ontario) **Update Comments: Activities Facility Contacts Facility Contacts** Public Contact:* Jon Harding Highest Ranking Employee: **Brian Fairley** Person responsible for preparing the toxic substance reduction plan: Charles Mortley-Wood Organization Validation Company and Parent Company Information **Company Details** Company Legal Name:* Imperial Oil Company Trade Name:* Imperial Oil

Business Number:*	121461107
Mailing Address	
Delivery Mode:	Post Office Box
PO Box	
Rural Route Number	
Address Line 1	237 4th Avenue Southwest
City*	Calgary
Province/Territory**	Alberta
Postal Code:**	T2P3M9
Physical Address	
Address Line 1	237 4th Avenue Southwest
City	Calgary
Province/Territory	Alberta
Postal Code	T2P3M9
Additional Information	
Land Survey Description	
National Topographical Description	
Parent Companies	
Facility Validation	
Facility Information	
Facility:*	Sarnia Refinery Plant
NAICS Id:*	324110
NPRI Id:*	3704
ON Reg 127/01 ld:	

UTM Easting**

UTM Northing**

Mailing Address Delivery Mode: Post Office Box PO Box 3004 Rural Route Number Address Line 1 602 Christina Street South City* Sarnia Province/Territory** Ontario Postal Code:** N7T7M5 **Physical Address** Address Line 1 602 Christina Street South City Sarnia Province/Territory Ontario Postal Code N7T7M5 Values entered for TRA and NPRI are reported to Additional Information the first decimal place to represent their estimated accuracies while SWIM is designed to show the fourth decimal place. Land Survey Description National Topographical Description Geographical Address Latitude 42.95420 Longitude -82.41580 UTM Zone** 17

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385773.59

4756731.82

Contact Validation Contacts **Public Contact:** First Name:* Jon Last Name:* Harding Position:* **Public Contact** Telephone:* 5193394015 Ext: Fax: 5193394491 Email:* jon.s.harding@esso.ca Mailing Address **Delivery Mode: General Delivery** PO Box Rural Route Number Address Line 1 602 Christina Street South City* Sarnia Province/Territory** Ontario Postal Code:** N7T 7M5 Highest Ranking Employee: First Name:* Brian Last Name:* Fairley Position:* Refinery Manager Telephone:* 5193392401 Ext:

Fax:	
Email:*	brian.m.fairley@esso.ca
Mailing Address	
Delivery Mode:	General Delivery
PO Box	
Rural Route Number	
Address Line 1	602 Christina Street
City*	Sarnia
Province/Territory**	Ontario
Postal Code:**	N7T 7M5
Person responsible for the Toxic Sub	stance Reduction Plan preparation:
First Name:*	Charles
Last Name:*	Mortley-Wood
Position:*	Technical Leader
Telephone:*	5193392529
Ext:	
Fax:	
Email:*	cmortley-wood@esso.ca
Mailing Address	
Delivery Mode:	General Delivery
PO Box	
Rural Route Number	
Address Line 1	602 Christina St South Street South

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City*	Sarnia
Province/Territory**	Ontario
Postal Code:**	N7T7M5
Employees	
Employees	
Number of Full-time Employees:*	
331	
Substances	
109-99-9, Tetrahydrofuran	
Substances Section Data	
Statement of Intent	
Use	
Does the plan include a statement that stipulates the c substance at their facility?*	wner or operator's intent to use less of this toxic
No	
If 'yes', provide the exact statement of intent:**	
If 'no', what rationale is specified in the plan for not usi	ng less of this substance?**
Tetrahydrofuran is not currently used at the facility	
Creation	
Does the plan include a statement that stipulates the c substance at their facility?*	owner or operator's intent to create less of this toxic
No	
If 'yes', provide the exact statement of intent:**	
If 'no', what rationale is specified in the plan for not cre	eating less of this substance?:**
Tetrahydrofuran is not created at the facility	

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Objectives, Targets and Description

Plan Objectives Objectives in plan:* Tetrahydrofuran was not detected at measurable concentrations in any of the Refinery inputs or outputs and is not created. As such, no technically and economically feasible options to reduce use and/or creation were identified **Toxic Substance Use Targets** Reduction target:* Unit Quantity or ☑ No target Timeframe target:* or No target years Description of use targets: **Toxic Substance Creation Targets** Reduction target:* Quantity Unit or ☑ No target Timeframe target:* or No target years Description of creation targets: Reasons for Using this Toxic Substance This substance is used at the facility:* This substance is not used at the facility

Summarize why this substance is used at the facility:**

Tetrahydrofuran is not currently used at the facility
Reasons for Creating this Toxic Substance
This substance is created at the facility:*
This substance is not created at the facility
Summarize why this substance is created at the facility:**
Tetrahydrofuran is not created at the facility
Toxic Reduction Options for Implementation
Toxic substance reduction option(s) to be implemented:
Does the plan specify that no toxic reduction option will be implemented?*
Yes
If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If 'Yes', explain why no option will be implemented:**
No reduction options were identified that are expected to reduce the use or creation of Tetrahydrofuran at Imperial Oil's Sarnia refinery. Tetrahydrofuran was not detected in measureable concentrations in any inputs, outputs and is not created at the Refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Tetrahydrofuran at the Sarnia Refinery
Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071

License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
110-54-3, n-Hexane
110-54-3, n-Hexane
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**
If 'no', what rationale is specified in the plan for not using less of this substance?**
Sarnia refinery is in the business of extracting and producing N-Hexane from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery
Creation
Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**
If 'no', what rationale is specified in the plan for not creating less of this substance?:**
Sarnia refinery is in the business of extracting and producing N-Hexane from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery
Objectives, Targets and Description
Plan Objectives
Objectives in plan:*

While Imperial Oil has not identified any options to reduce the use or creation of N-Hexane at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of N-Hexane in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Toxic Substance Use	rargets		
Reduction target:*		Quantity	Unit
V N - (or		
⊠ No target	o.		
Timeframe target:*			
	or		
⊠ No target	OI .		years
Description of use targets:			
Toxic Substance Crea	tion Targets		
Reduction target:*			
		Quantity	Unit
☑ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of creation targets:			
Reasons for Using this	Tovic Substa	nce	
This substance is used at the fac		IIUU	
	mry.		
As a by-product			
Summarize why this substance is	s used at the facility:	**	
N-Hexane is currently used at th	e facility and enters	the refinery in various	us feedstock including crude oil.
Sarnia refinery is in the business streams to be used in the finishe	of extracting and pr	oducing N-Hexane	from crude oil and hydrocarbon

Reasons	for	Creating	this	Toxic	Substance
NGGSONS	ıOı	Cicating	นเเง		Oubstance

This substance is created at the facility:*

As a by-product

Summarize why this substance is created at the facility:**

N-Hexane is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing N-Hexane from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

Sarnia refinery is in the business of producing finished products that utilize N-Hexane from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of N-Hexane at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of N-Hexane in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for choosing these options for implementation:

Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:

License number of the toxic substance reduction planner who made the recommendations for this

substance (format	TSRP	XXXX)):*

TSRP0071

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

TSRP0071

Which version of the plan is reflected in this summary?*

New Plan

115-07-1, Propylene

115-07-1, Propylene

Substances Section Data

Statement of Intent

Use

Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not using less of this substance?**

Propylene is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Propylene from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Creation

Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not creating less of this substance?:**

Propylene is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Propylene from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Objectives, Targets and Description Plan Objectives Objectives in plan:* While Imperial Oil has not identified any options to reduce the use or creation of Propylene at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Propylene in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program Toxic Substance Use Targets Reduction target:* Quantity Unit

⊠ No target	or		
Timeframe target:*			
⊠ No target	or	years	
Description of use targets:			
Toxic Substance Creation	Targets		

Toxic Substance Creation Targets Reduction target:* Quantity Unit

		Quantity	Unit	
⊠ No target	or			
Timeframe target:*				
No target	or		years	
Description of creation targets:				

Description of creation targets:

Reasons for Using this Toxic Substance

This substance is used at the facility:*

As a by-product

Summarize why this substance is used at the facility:**

Propylene is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Propylene from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

Summarize why this substance is created at the facility:**

Propylene is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Propylene from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

Sarnia refinery is in the business of producing finished products that utilize Propylene from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Propylene at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Propylene in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for choosing these options for implementation:

icense number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):* ISRP0071 License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):* ISRP0071 Which version of the plan is reflected in this summary?* New Plan 25167-67-3, Butene (all isomers) Substances Section Data Statement of Intent Use Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic cubstance at their facility?* No If 'roo', what rationale is specified in the plan for not using less of this substance?** Sutene (all isomers) is currently used at the facility and enters the refinery in various feedstock including rude oil. Samia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Oces the plan include a statement that stipulates the owner or operator's intent to create less of this toxic cubstance at their facility?* No	Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance he facility:
icicense number of the toxic substance reduction planner who certified the plan for this substance (format SRPXXXX):* ISRP0071 Which version of the plan is reflected in this summary?* New Plan 25167-67-3, Butene (all isomers) 5167-67-3, Butene (all isomers) 5ubstances Section Data Statement of Intent Jse Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?* No If 'yes', provide the exact statement of intent:** Sultene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Samia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Ooes the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	
ISRPXXXX):* ITSRP0071 Which version of the plan is reflected in this summary?* New Plan 25167-67-3, Butene (all isomers) 25167-67-3, Butene (all isomers) Substances Section Data Statement of Intent Use Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic valuations at their facility?* No If 'yes', provide the exact statement of intent:** If 'no', what rationale is specified in the plan for not using less of this substance?** Sautene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Sarnia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic valuations at their facility?*	TSRP0071
Which version of the plan is reflected in this summary?* New Plan 25167-67-3, Butene (all isomers) Substances Section Data Statement of Intent Use Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?* No If 'yes', provide the exact statement of intent:** Butene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Sarnia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	
New Plan 25167-67-3, Butene (all isomers) 5ubstances Section Data Statement of Intent Use Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?* No f 'yes', provide the exact statement of intent:** Butene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Sarnia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	TSRP0071
25167-67-3, Butene (all isomers) Substances Section Data Statement of Intent Use Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?* No If 'yes', provide the exact statement of intent:** If 'no', what rationale is specified in the plan for not using less of this substance?** Butene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Sarriar refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	Vhich version of the plan is reflected in this summary?*
Substances Section Data Statement of Intent Use Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?* No If 'yes', provide the exact statement of intent:** Substance (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Samia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	New Plan
Substances Section Data Statement of Intent Use Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?* No If 'yes', provide the exact statement of intent:** Sutene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Samia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	25167-67-3, Butene (all isomers)
Dise Dise Dise the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?* No If 'yes', provide the exact statement of intent:** Butene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Sarnia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	,
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?* No If 'yes', provide the exact statement of intent:** If 'no', what rationale is specified in the plan for not using less of this substance?** Buttene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Samia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	Substances Section Data
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?* No f 'yes', provide the exact statement of intent:** guide the exact statement of intent:** Butene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Sarnia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	Statement of Intent
Substance at their facility?* No f 'yes', provide the exact statement of intent:** f 'no', what rationale is specified in the plan for not using less of this substance?** Butene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Sarnia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	Jse
f 'yes', provide the exact statement of intent:** If 'no', what rationale is specified in the plan for not using less of this substance?** Butene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Sarnia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	
f 'no', what rationale is specified in the plan for not using less of this substance?** Butene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Sarnia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	No
Butene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Sarnia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	f 'yes', provide the exact statement of intent:**
Sarnia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	f 'no', what rationale is specified in the plan for not using less of this substance?**
Creation Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	
Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*	
substance at their facility?* No	Creation
: 'yes' provide the evect statement of intent:**	No
	f 'yes', provide the exact statement of intent:**

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Description of creation targets:

If 'no', what rationale is specified in the plan for not creating less of this substance?:**

Butene (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Objectives, Targets and Description Plan Objectives Objectives in plan:* While Imperial Oil has not identified any options to reduce the use or creation of Butene (all isomers) at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Butene (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program **Toxic Substance Use Targets** Reduction target:* Unit Quantity or ☑ No target Timeframe target:* or No target years Description of use targets: **Toxic Substance Creation Targets** Reduction target:* Quantity Unit or ☑ No target Timeframe target:* or No target years

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Reasons for Using this Toxic Substance

This substance is used at the facility:*

As a by-product

Summarize why this substance is used at the facility:**

Butene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

Summarize why this substance is created at the facility:**

Butene (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Butene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

Sarnia refinery is in the business of producing finished products that utilize Butene (all isomers) from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Butene (all isomers) at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Butene (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
25264-93-1, Hexene (all isomers)
25264-93-1, Hexene (all isomers)
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**
If 'no', what rationale is specified in the plan for not using less of this substance?**
Hexene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.
Sarnia refinery is in the business of extracting and producing Hexene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

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Does the plan include a statement th substance at their facility?*	at stipulates the	owner or operator's	s intent to create less of this toxic
No			
If 'yes', provide the exact statement of	of intent:**		
If 'no', what rationale is specified in the	he plan for not c	reating less of this s	substance?:**
Hexene (all isomers) is created at the refineries conversion units.	e facility through	n the complex chem	ical reactions occurring in the
Sarnia refinery is in the business of hydrocarbon streams to be used in t	extracting and p he finished prod	roducing Hexene (a lucts marketed by th	ll isomers) from crude oil and e refinery
Objectives, Targets and I	Description		
Plan Objectives			
Objectives in plan:*			
While Imperial Oil has not identified Sarnia refinery, various projects at S isomers) in the coming years. These improvements to the fugitive emission	Sarnia refinery a e projects includ	re expected to reduct le but are not limited	ce fugitive emissions of Hexene (all
Toxic Substance Use Tar	aets		
Reduction target:*	9		
ge		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of use targets:			
Toxic Substance Creation	n Targets		
Reduction target:*			
		Quantity	Unit

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	or			
⊠ No target	OI .			
Timeframe target:*				
No target ■	or			years
Description of creation targets	:			
- company on a common tem good				
Possons for Using th	nic Toyic Subs	tanco		
Reasons for Using the This substance is used at the		lance		
As a by-product				
no a by product				
Summarize why this substanc	e is used at the facili	ty:**		
Hexene (all isomers) is currer crude oil.	itly used at the facility	y and enters	the refinery in va	arious feedstock including
Sarnia refinery is in the busine hydrocarbon streams to be us				
Reasons for Creating	g this Toxic Su	ıbstance		
This substance is created at the	ne facility:*			
As a by-product				
Summarize why this substanc	e is created at the fa	cility:**		
Hexene (all isomers) is create refineries conversion units.	ed at the facility throu	gh the comp	lex chemical rea	ctions occurring in the
Sarnia refinery is in the busine hydrocarbon streams to be us				
Toxic Reduction Opt	ions for Impler	mentatior	<u>1</u>	
Toxic substance redu	uction option(s	s) to be in	nplemented	d:
Does the plan specify that no	toxic reduction optior	n will be impl	emented?*	
Yes				

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If 'Yes', explain why no option will be implemented:**

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Sarnia refinery is in the business of producing finished products that utilize Hexene (all isomers) from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Hexene (all isomers) at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Hexene (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
25551-13-7, Trimethylbenzene (all isomers excluding 1,2,4-
Trimethylbenzene)
25551-13-7, Trimethylbenzene (all isomers excluding 1,2,4-Trimethylbenzene)
Substances Section Data
Statement of Intent

ı	- 1	C	
L	J	0	C

Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not using less of this substance?**

Trimethylbenzene (all isomers excluding 1, 2, 4-Trimethylbenzene) is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Trimethylbenzene (all isomers excluding 1, 2, 4-Trimethylbenzene) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Creation

Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not creating less of this substance?:**

Trimethylbenzene (all isomers excluding 1, 2, 4-Trimethylbenzene) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Trimethylbenzene (all isomers excluding 1, 2, 4-Trimethylbenzene) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

While Imperial Oil has not identified any options to reduce the use or creation of Trimethylbenzene (all isomers excluding 1, 2, 4-Trimethylbenzene) at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Trimethylbenzene (all isomers excluding 1, 2, 4-Trimethylbenzene) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Toxic Substance Use Targets

Reduction target:*

Quantity	Unit	
Quantity	Unit	

⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of use targets:			
Toxic Substance Creation Target	ets		
Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of creation targets:			
Reasons for Using this Toxic Su	ubstar	nce	
This substance is used at the facility:*			
As a by-product			
Summarize why this substance is used at the	facility:*	*	
Trimethylbenzene (all isomers excluding 1, 2, enters the refinery in various feedstock included	4-Trime	ethylbenzene) is currently (e oil.	used at the facility and
Sarnia refinery is in the business of extracting 4-Trimethylbenzene) from crude oil and hydroby the refinery	g and pro ocarbon	oducing Trimethylbenzene streams to be used in the	(all isomers excluding 1, 2, finished products marketed
Reasons for Creating this Toxic	Subs	stance	
This substance is created at the facility:*			
As a by-product			

Summarize why this substance is created at the facility:**

Trimethylbenzene (all isomers excluding 1, 2, 4-Trimethylbenzene) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Trimethylbenzene (all isomers excluding 1, 2, 4-Trimethylbenzene) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

Sarnia refinery is in the business of producing finished products that utilize Trimethylbenzene (all isomers excluding 1, 2, 4-Trimethylbenzene) from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Trimethylbenzene (all isomers excluding 1, 2, 4-Trimethylbenzene) at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Trimethylbenzene (all isomers excluding 1, 2, 4-Trimethylbenzene) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for choosing these options for implementation:

Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:

License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*

TSRP0071

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

TS	R	Р	n	n	7	1
10	17		U	v	1	1

Which version of the plan is reflected in this summary?*

New Plan

74-85-1, Ethylene

74-85-1, Ethylene

Substances Section Data

Statement of Intent

Use

Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not using less of this substance?**

Ethylene is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Ethylene from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Creation

Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not creating less of this substance?:**

Ethylene is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Ethylene from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

While Imperial Oil has not identified any options to reduce the use or creation of Ethylene at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Ethylene in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Toxic Substance Use Tai	rgets		
Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of use targets:			
Toxic Substance Creation	n Targets		
Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of creation targets:			
Reasons for Using this To	oxic Substa	nce	
This substance is used at the facility			
As a by-product			
Summarize why this substance is us	ed at the facility:	**	
Ethylene is currently used at the fac			s feedstock including crude oil
	•	-	-
Sarnia refinery is in the business of streams to be used in the finished p	extracting and pr roducts marketed	by the refinery	om crude on and nydrocarbon

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Reasons	for	Creating	this	Toxic	Substance
NGGSONS	ıOı	Cicating	นเเง		Oubstance

This substance is created at the facility:*

As a by-product

Summarize why this substance is created at the facility:**

Ethylene is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Ethylene from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

Sarnia refinery is in the business of producing finished products that utilize Ethylene from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Ethylene at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Ethylene in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for choosing these options for implementation:

Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:

License number of the toxic substance reduction planner who made the recommendations for this

substance ((format	TSRPXXXX):	•*

TSRP0071

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

TSRP0071

Which version of the plan is reflected in this summary?*

New Plan

74-98-6, Propane

74-98-6, Propane

Substances Section Data

Statement of Intent

Use

Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not using less of this substance?**

Propane is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Propane from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Creation

Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not creating less of this substance?:**

Propane is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Propane from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

While Imperial Oil has not identified any options to reduce the use or creation of Propane at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Propane in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of use targets:			
Toxic Substance Creatio	n Targets		
	•		
Reduction target:*			
Reduction target:*	_	Quantity	Unit
	or	Quantity	Unit
⊠ No target	or	Quantity	Unit
⊠ No target Timeframe target:*	or	Quantity	Unit
Timeframe target:* ⊠ No target		Quantity	
Reduction target:* No target Timeframe target:* No target Description of creation targets: Reasons for Using this T	or		

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Summarize why this substance is used at the facility:**

Propane is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Propane from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

Summarize why this substance is created at the facility:**

Propane is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Propane from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

Sarnia refinery is in the business of producing finished products that utilize Propane from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Propane at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Propane in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for choosing these options for implementation:

Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
95-63-6, 1,2,4-Trimethylbenzene
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**
If 'no', what rationale is specified in the plan for not using less of this substance?**
1, 2, 4-Trimethylbenzene is currently used at the facility and enters the refinery in purchased feed, chemicals and additives.
1, 2, 4-Trimethylbenzene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products. Additionally, because of its solubility characteristics and accepted presence in motor gasoline, it is utilized by chemical vendors as a carrier fluid for many different refinery chemicals and additives that end up in refinery streams and products.
Creation
Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**

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f 'no', what rationale is specified	in the plan for not crea	ating less of this s	ubstance?:**
The 1, 2, 4-Trimethylbenzene creduring thermal cracking, and its		oduct of the compl	ex chemical reactions occurring
Objectives, Targets an	d Description		
Plan Objectives			
Objectives in plan:*			
1, 2, 4-Trimethylbenzene enters byproduct from thermal cracking were identified			
Toxic Substance Use	Гargets		
Reduction target:*			
		Quantity	Unit
☑ No target	or		
imeframe target:*			
☑ No target	or		years
Description of use targets:			
Foxic Substance Crea	tion Targets		
Reduction target:*	J		
•		Quantity	Unit
☑ No target	or		
-			
Timeframe target:*			
☑ No target	or		years
	'		

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Reasons for Using this Toxic Substance

This substance is used at the facility:*

As a by-product

Summarize why this substance is used at the facility:**

- 1, 2, 4-Trimethylbenzene is currently used at the facility and enters the refinery in purchased feed, chemicals and additives.
- 1, 2, 4-Trimethylbenzene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products. Additionally, because of its solubility characteristics and accepted presence in motor gasoline, it is utilized by chemical vendors as a carrier fluid for many different refinery chemicals and additives that end up in refinery streams and products.

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

Summarize why this substance is created at the facility:**

- 1, 2, 4-Trimethylbenzene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.
- The 1, 2, 4-Trimethylbenzene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of 1, 2, 4-Trimethylbenzene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of 1, 2, 4-Trimethylbenzene at the Sarnia Refinery.

1, 2, 4-Trimethylbenzene used at the facility is a component of the purchased feedstock and additives that are required by the facility to meet market and contractual demands for the refinery's products. The 1, 2, 4-Trimethylbenzene created at the facility is minimized

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
NA - 24, Butane (all isomers)
NA - 24, Butane (all isomers)
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**
If 'no', what rationale is specified in the plan for not using less of this substance?**
Butane (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.
Sarnia refinery is in the business of extracting and producing Butane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Creation)
Does the	р

plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not creating less of this substance?:**

Butane (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Butane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

While Imperial Oil has not identified any options to reduce the use or creation of Butane (all isomers) at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Butane (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Toxic Substance Use Targets

Reduction	target:*
-----------	----------

	Quantity	Unit
⊠ No target	or	
Timeframe target:*		
No target	or	years
Description of use targets:		
Toxic Substance Creation	Targets	
Reduction target:*		
	Quantity	Unit

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⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of creation targets:			
Reasons for Using this	s Toxic Substar	nce	
This substance is used at the fac	cility:*		
As a by-product			
Summarize why this substance i	s used at the facility:*'	•	
Butane (all isomers) is currently crude oil.	used at the facility and	d enters the refinery in va	rious feedstock including
Sarnia refinery is in the business hydrocarbon streams to be used	s of extracting and production the finished production	ducing Butane (all isomer	rs) from crude oil and ry
Reasons for Creating	this Toxic Subs	tance	
This substance is created at the	facility:*		
As a by-product			
Summarize why this substance i	s created at the facility	/:**	
Butane (all isomers) is created a refineries conversion units.	at the facility through th	ne complex chemical reac	tions occurring in the
Sarnia refinery is in the business hydrocarbon streams to be used	s of extracting and production the finished production	ducing Butane (all isomer cts marketed by the refine	rs) from crude oil and ery
Toxic Reduction Optio	ns for Impleme	ntation	
Toxic substance reduc	ction option(s) to	o be implemented	:
Does the plan specify that no too	kic reduction option wil	Il be implemented?*	
Yes			

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If 'Yes', explain why no option will be implemented:**

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Sarnia refinery is in the business of producing finished products that utilize Butane (all isomers) from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Butane (all isomers) at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Butane (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
NA - 25, Cycloheptane (all isomers)
NA - 25, Cycloheptane (all isomers)
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic

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substance at their facility?*

No				
If 'yes', provide the exact statement of inten	t:**			
If 'no', what rationale is specified in the plan	for not u	sing less of this sub	ostance?**	
Cycloheptane (all isomers) is currently used including crude oil.	d at the fa	acility and enters the	e refinery in various feedstock	
Sarnia refinery is in the business of extraction hydrocarbon streams to be used in the finish				oil and
Creation				
Does the plan include a statement that stipus substance at their facility?*	ulates the	owner or operator'	s intent to create less of this to	oxic
No				
If 'yes', provide the exact statement of inten	t:**			
If 'no', what rationale is specified in the plan	for not c	reating less of this	substance?:**	
Cycloheptane (all isomers) is created at the refineries conversion units.	e facility th	nrough the complex	chemical reactions occurring	in the
Sarnia refinery is in the business of extracti hydrocarbon streams to be used in the finis				oil and
Objectives, Targets and Desc	ription			
Plan Objectives				
Objectives in plan:*				
While Imperial Oil has not identified any op at the Sarnia refinery, various projects at Scycloheptane (all isomers) in the coming youngrades and improvements to the fugitive	arnia refir ears. The	nery are expected to ese projects include	reduce fugitive emissions of but are not limited to tank	mers)
Toxic Substance Use Targets				
Reduction target:*				
_		Quantity	Unit	
⊠ No target	or			
Timeframe target:*				

No target	or		years
Description of use targets:			
Toxic Substance Creation Targe	ets		
Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of creation targets:			
Reasons for Using this Toxic Su	ıbstar	nce	
This substance is used at the facility:*			
As a by-product			
Summarize why this substance is used at the f	acility:*	*	
Cycloheptane (all isomers) is currently used at including crude oil.	t the fac	cility and enters the refinery	in various feedstock
Sarnia refinery is in the business of extracting hydrocarbon streams to be used in the finished	and produ	oducing Cycloheptane (all is cts marketed by the refiner	somers) from crude oil and
Reasons for Creating this Toxic	Subs	tance	
This substance is created at the facility:*			
As a by-product			
Summarize why this substance is created at the	e facilit	y:**	
Cycloheptane (all isomers) is created at the fa refineries conversion units.	cility thr	ough the complex chemica	Il reactions occurring in the

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Sarnia refinery is in the business of extracting and producing Cycloheptane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Toxic Reduction Options for Implementation Toxic substance reduction option(s) to be implemented: Does the plan specify that no toxic reduction option will be implemented?* Yes If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:* Sarnia refinery is in the business of producing finished products that utilize Cycloheptane (all isomers) from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Cycloheptane (all isomers) at Imperial Oil's Sarnia refinery. Various projects at Sarnia refinery are expected to reduce fugitive emissions of Cycloheptane (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program Materials or feedstock substitution Product design or reformulation Equipment or process modifications Spill or leak prevention On-site reuse, recycling or recovery Improved inventory management or purchasing techniques Good operator practice or training Rationale for choosing these options for implementation: Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility: License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):* TSRP0071 License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):* **TSRP0071** Which version of the plan is reflected in this summary?*

New Plan

NA - 26, Cyclohexene (all isomers)

NA - 26, Cyclohexene (all isomers)

Substances Section Data

Statement of Intent

Use

Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not using less of this substance?**

Cyclohexene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Cyclohexene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Creation

Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not creating less of this substance?:**

Cyclohexene (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Cyclohexene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

While Imperial Oil has not identified any options to reduce the use or creation of Cyclohexene (all isomers) at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Cyclohexene (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
☑ No target	or		years
Description of use targets:			
Toxic Substance Creatior	n Targets		
Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of creation targets:			
Reasons for Using this To	oxic Substa	ance	
This substance is used at the facility:			
As a by-product			
Summarize why this substance is use	ed at the facility	.**	
Cyclohexene (all isomers) is currentle ncluding crude oil.	y used at the fa	cility and enters the	refinery in various feedstock
Sarnia refinery is in the business of ϵ hydrocarbon streams to be used in the			
hydrocarbon streams to be used in the Reasons for Creating this	ne finished prod	lucts marketed by th	

This substance is created at the facility:*

As a by	-product	t
---------	----------	---

Summarize why this substance is created at the facility:**

Cyclohexene (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Cyclohexene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

Sarnia refinery is in the business of producing finished products that utilize Cyclohexene (all isomers) from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Cyclohexene (all isomers) at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Cyclohexene (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for choosing these options for implementation:

Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:

License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*

TSRP0071

License num	ber of the toxi	c substance i	reduction plant	anner who	certified the	plan for this	s substance (format
TSRPXXXX)):*		•			•	·	•

TSRP0071

Which version of the plan is reflected in this summary?*

New Plan

NA - 27, Cyclooctane (all isomers)

NA - 27, Cyclooctane (all isomers)

Substances Section Data

Statement of Intent

Use

Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not using less of this substance?**

Cylcooctane (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Cylcooctane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Creation

Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not creating less of this substance?:**

Cylcooctane (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Cylcooctane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

While Imperial Oil has not identified any options to reduce the use or creation of Cylcooctane (all isomers) at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Cylcooctane (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

No target Timeframe target:* No target escription of use targets: Toxic Substance Creation Reduction target:*	or or Targets	Quantity	years
imeframe target:* No target escription of use targets: oxic Substance Creation	or		years
No target escription of use targets: oxic Substance Creation			years
escription of use targets: Toxic Substance Creation			years
oxic Substance Creation	n Targets		
	n Targets		
Reduction target:*			
		Quantity	Unit
No target	or		
imeframe target:*			
] No target	or		years
escription of creation targets:			
	oula Oulasti		
Reasons for Using this To his substance is used at the facility:*		ance	

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Summarize why this substance is used at the facility:**

Cylcooctane (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Cylcooctane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

Summarize why this substance is created at the facility:**

Cylcooctane (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Cylcooctane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

Sarnia refinery is in the business of producing finished products that utilize Cylcooctane (all isomers) from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Cylcooctane (all isomers) at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Cylcooctane (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for choosing these options for implementation:

Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility: License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):* TSRP0071 License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):* TSRP0071 Which version of the plan is reflected in this summary?* New Plan NA - 28, Decane (all isomers) NA - 28, Decane (all isomers) Substances Section Data Statement of Intent Use Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?* No If 'yes', provide the exact statement of intent:** If 'no', what rationale is specified in the plan for not using less of this substance?** Decane (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Decane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Creation

Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not creating less of this substance?:**

Decane (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Decane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

While Imperial Oil has not identified any options to reduce the use or creation of Decane (all isomers) at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Decane (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

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Toxic Substance Use 13	argeis			
Reduction target:*				
		Quantity	Unit	
⊠ No target	or			
Timeframe target:*				
⊠ No target	or		years	
Description of use targets:				
Toxic Substance Creation	on Targets			
Reduction target:*				
		Quantity	Unit	
⊠ No target	or			
Timeframe target:*				
⊠ No target	or		years	

Description of creation targets:

Reasons for Using this Toxic Substance

This substance is used at the facility:*

As a by-product

Summarize why this substance is used at the facility:**

Decane (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Decane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

Summarize why this substance is created at the facility:**

Decane (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Decane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

Sarnia refinery is in the business of producing finished products that utilize Decane (all isomers) from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Decane (all isomers) at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Decane (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
NA - 31, Heptane (all isomers)
NA - 31, Heptane (all isomers)
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**
If 'no', what rationale is specified in the plan for not using less of this substance?**
Heptane (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.

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Sarnia refinery is in the business of extracting and producing Heptane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

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<i>(</i> ' '	$r \cap \cap$. + :	\sim	r
	rea		()	

Oroalion			
Does the plan include a statemer substance at their facility?*	nt that stipulates the	owner or operator's	s intent to create less of this toxic
No			
If 'yes', provide the exact stateme	ent of intent:**		
If 'no', what rationale is specified	in the plan for not o	reating less of this	substance?:**
Heptane (all isomers) is created refineries conversion units.	at the facility throug	h the complex chen	nical reactions occurring in the
Sarnia refinery is in the business hydrocarbon streams to be used	of extracting and p in the finished prod	roducing Heptane (a lucts marketed by th	all isomers) from crude oil and ne refinery
Objectives, Targets and	d Description		
Plan Objectives			
Objectives in plan:*			
While Imperial Oil has not identifithe Sarnia refinery, various proje (all isomers) in the coming years improvements to the fugitive emission.	cts at Sarnia refine . These projects in	ry are expected to re clude but are not lim	eation of Heptane (all isomers) at educe fugitive emissions of Heptane nited to tank upgrades and
Toxic Substance Use 1	argets		
Reduction target:*			
_		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of use targets:			
Toxic Substance Creat	ion Targets		
Reduction target:*			

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Quantity

Unit

☑ No target	or			
Timeframe target:*				
Timename larget.				
₩ No toward	or			
No target				years
Description of creation targets	:			
Reasons for Using th	nis Toxic Subst	tance		
This substance is used at the				
As a by-product				
		. ++		
Summarize why this substance	e is used at the facilit	ty:^^		
Heptane (all isomers) is currel crude oil.	ntly used at the facilit	ty and enters	the refinery in v	rarious feedstock including
Sarnia refinery is in the busine hydrocarbon streams to be us				
Reasons for Creating	g this Toxic Su	bstance		
This substance is created at the	ne facility:*			
As a by-product				
Summarize why this substance	e is created at the fa	cility:**		
Heptane (all isomers) is create refineries conversion units.	ed at the facility throu	ugh the comp	lex chemical rea	actions occurring in the
Sarnia refinery is in the busine hydrocarbon streams to be us				
Toxic Reduction Opti	ions for Impler	nentation	<u> </u>	
Toxic substance redu	uction option(s) to be in	nplemented	l :
Does the plan specify that no t	oxic reduction option	n will be imple	mented?*	
Yes				

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If 'Yes', explain why no option will be implemented:**

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Sarnia refinery is in the business of producing finished products that utilize Heptane (all isomers) from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Heptane (all isomers) at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Heptane (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
NA - 32, Hexane (all isomers excluding n-hexane)
NA - 32, Hexane (all isomers excluding n-hexane)
Substances Section Data
Statement of Intent
Use

Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*

No					
If 'yes', provide the exact statement of intent:*	**				
If 'no', what rationale is specified in the plan for	or not u	sing less of this sub	stance?**		
Hexane (all isomers excluding n-hexane) is c feedstock including crude oil.	urrently	used at the facility	and enter	s the refinery in various	
Sarnia refinery is in the business of extracting crude oil and hydrocarbon streams to be use					
Creation					
Does the plan include a statement that stipula substance at their facility?*	ates the	owner or operator's	intent to	create less of this toxic	
No					
If 'yes', provide the exact statement of intent:	**				
If 'no', what rationale is specified in the plan for	or not c	eating less of this s	ubstance	?:**	
Hexane (all isomers excluding n-hexane) is coccurring in the refineries conversion units.	reated	at the facility througl	h the com	plex chemical reactions	
Sarnia refinery is in the business of extracting crude oil and hydrocarbon streams to be use	Sarnia refinery is in the business of extracting and producing Hexane (all isomers excluding n-hexane) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery				
Objectives, Targets and Descri	ption				
Plan Objectives					
Objectives in plan:*					
While Imperial Oil has not identified any optic excluding n-hexane) at the Sarnia refinery, valuative emissions of Hexane (all isomers excluding not limited to tank upgrades and impressions).	arious p cluding r	rojects at Sarnia ref n-hexane) in the con	inery are ning year	expected to reduce s. These projects include	
Toxic Substance Use Targets					
Reduction target:*					
-		Quantity		Unit	
☑ No target	or				
Timeframe target:*					

No target ■	or		years
Description of use targets:			
Toxic Substance Creatio	n Targets		
Reduction target:*			
		Quantity	Unit
☑ No target	or		
Timeframe target:*			
No target ■ Target	or		years
Description of creation targets:			
Reasons for Using this T	oxic Substa	ance	
This substance is used at the facility	/: *		
As a by-product			
Summarize why this substance is us	sed at the facility	.**	
Hexane (all isomers excluding n-he feedstock including crude oil.	xane) is currently	used at the facility	and enters the refinery in various
Sarnia refinery is in the business of crude oil and hydrocarbon streams	extracting and p to be used in the	roducing Hexane (a finished products	all isomers excluding n-hexane) from marketed by the refinery
Reasons for Creating this	s Toxic Sub	stance	
This substance is created at the faci	ility:*		
As a by-product			
Summarize why this substance is cr	eated at the facil	ity:**	
Hexane (all isomers excluding n-he occurring in the refineries conversion	xane) is created on units.	at the facility throug	gh the complex chemical reactions

Sarnia refinery is in the business of extracting and producing Hexane (all isomers excluding n-hexane) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Toxic Reduction Options for Implementation Toxic substance reduction option(s) to be implemented: Does the plan specify that no toxic reduction option will be implemented?* Yes If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:* Sarnia refinery is in the business of producing finished products that utilize Hexane (all isomers excluding n-hexane) from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Hexane (all isomers excluding n-hexane) at Imperial Oil's Sarnia refinery. Various projects at Sarnia refinery are expected to reduce fugitive emissions of Hexane (all isomers excluding n-hexane) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program Materials or feedstock substitution Product design or reformulation Equipment or process modifications Spill or leak prevention On-site reuse, recycling or recovery Improved inventory management or purchasing techniques Good operator practice or training Rationale for choosing these options for implementation: Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility: License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):* TSRP0071 License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):* **TSRP0071** Which version of the plan is reflected in this summary?*

New Plan

NA - 33, Nonane (all isomers)

NA - 33, Nonane (all isomers)

Substances Section Data

Statement of Intent

Use

Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not using less of this substance?**

Nonane (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Nonane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Creation

Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not creating less of this substance?:**

Nonane (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Nonane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

While Imperial Oil has not identified any options to reduce the use or creation of Nonane (all isomers) at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Nonane (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Reduction target:*			
		Quantity	Unit
☑ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of use targets:			
Toxic Substance Creation	n Targets		
Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of creation targets:			
Doggong for Hoing this T	Tovio Subota	200	
Reasons for Using this T This substance is used at the facility		11 IU U	
As a by-product			
Summarize why this substance is u	sed at the facility	.** ·	
Nonane (all isomers) is currently us crude oil.			ery in various feedstock including
Sarnia refinery is in the business of hydrocarbon streams to be used in			
Reasons for Creating thi	s Tovic Sub	etance	

This substance is created at the facility:*

As a	by-	prod	duct
------	-----	------	------

Summarize why this substance is created at the facility:**

Nonane (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Nonane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

Sarnia refinery is in the business of producing finished products that utilize Nonane (all isomers) from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Nonane (all isomers) at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Nonane (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for choosing these options for implementation:

Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:

License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*

TSRP0071

License number of the toxic substance	reduction planner who	certified the plan f	or this substance (format
TSRPXXXX):*	·	•	,	

TSRP0071

Which version of the plan is reflected in this summary?*

New Plan

NA - 34, Octane (all isomers)

NA - 34, Octane (all isomers)

Substances Section Data

Statement of Intent

Use

Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not using less of this substance?**

Octane (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Octane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Creation

Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not creating less of this substance?:**

Octane (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Octane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

While Imperial Oil has not identified any options to reduce the use or creation of Octane (all isomers) at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Octane (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Reduction target:*			
	Qı	antity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of use targets:			
Toxic Substance Creatio	n Targets		
Reduction target:*			
	Qı	antity	Unit
⊠ No target	or		
Timeframe target:*			years
Timeframe target:*	or		years
⊠ No target	or	2	years

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Summarize why this substance is used at the facility:**

Octane (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Octane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

Summarize why this substance is created at the facility:**

Octane (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Octane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

Sarnia refinery is in the business of producing finished products that utilize Octane (all isomers) from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Octane (all isomers) at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Octane (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for choosing these options for implementation:

Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility: License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):* TSRP0071 License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):* TSRP0071 Which version of the plan is reflected in this summary?* New Plan NA - 35, Pentane (all isomers) NA - 35, Pentane (all isomers) Substances Section Data Statement of Intent Use Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?* No If 'yes', provide the exact statement of intent:** If 'no', what rationale is specified in the plan for not using less of this substance?** Pentane (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil. Sarnia refinery is in the business of extracting and producing Pentane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Creation

Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not creating less of this substance?:**

Pentane (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Pentane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

While Imperial Oil has not identified any options to reduce the use or creation of Pentane (all isomers) at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Péntane (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

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Toxic Substance Use 13	argeis			
Reduction target:*				
		Quantity	Unit	
⊠ No target	or			
Timeframe target:*				
⊠ No target	or		years	
Description of use targets:				
Toxic Substance Creation	on Targets			
Reduction target:*				
		Quantity	Unit	
⊠ No target	or			
Timeframe target:*				
⊠ No target	or		years	

Description of creation targets:

Reasons for Using this Toxic Substance

This substance is used at the facility:*

As a by-product

Summarize why this substance is used at the facility:**

Pentane (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Pentane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

Summarize why this substance is created at the facility:**

Pentane (all isomers) is created at the facility through the complex chemical reactions occurring in the refineries conversion units.

Sarnia refinery is in the business of extracting and producing Pentane (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

Sarnia refinery is in the business of producing finished products that utilize Pentane (all isomers) from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Pentane (all isomers) at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Pentane (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
NA - 36, Pentene (all isomers)
NA - 36, Pentene (all isomers)
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**
If 'no', what rationale is specified in the plan for not using less of this substance?**
Pentene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.

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Sarnia refinery is in the business of extracting and producing Pentene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Creation

Does the plan include a statement the substance at their facility?*	at stipulates the	owner or operator'	s intent to create less of this toxic
No			
If 'yes', provide the exact statement of	f intent:**		
If 'no', what rationale is specified in the	e plan for not c	reating less of this	substance?:**
Pentene (all isomers) is created at the refineries conversion units.	e facility throug	h the complex cher	nical reactions occurring in the
Sarnia refinery is in the business of enhydrocarbon streams to be used in the	extracting and p ne finished prod	roducing Pentene (ucts marketed by tl	all isomers) from crude oil and ne refinery
Objectives, Targets and D	Description		
Plan Objectives			
Objectives in plan:*			
While Imperial Oil has not identified a the Sarnia refinery, various projects a (all isomers) in the coming years. Thimprovements to the fugitive emission	at Sarnia refinei iese projects ind	y are expected to r clude but are not lin	educe fugitive emissions of Pentene
Toxic Substance Use Tar	gets		
Reduction target:*			
-		Quantity	Unit
☑ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of use targets:			
Toxic Substance Creation	Targets		
Reduction target:*			
-		Quantity	Unit

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⊠ No target	or					
Timeframe target:*						
	or		years			
Description of creation targets:						
Reasons for Using this Toxic S	Substar	nce				
This substance is used at the facility:*						
As a by-product						
Summarize why this substance is used at th	e facility:*	*				
Pentene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.						
Sarnia refinery is in the business of extracting and producing Pentene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery						
Reasons for Creating this Toxi	ic Subs	stance				
This substance is created at the facility:*						
As a by-product						
Summarize why this substance is created at	the facilit	y:**				
Pentene (all isomers) is created at the facilit refineries conversion units.	ty through	the complex chemical reac	tions occurring in the			
Sarnia refinery is in the business of extracting and producing Pentene (all isomers) from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery						
Toxic Reduction Options for In	npleme	entation				
Toxic substance reduction opt	ion(s) t	o be implemented:				
Does the plan specify that no toxic reduction	option wi	Il be implemented?*				
Yes						

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If 'Yes', explain why no option will be implemented:**

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Sarnia refinery is in the business of producing finished products that utilize Pentene (all isomers) from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Pentene (all isomers) at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Pentene (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*

No						
If 'yes', provide the exact statement of inten	t:**					
If 'no', what rationale is specified in the plan	for not us	sing less of this su	ıbstance?*	*		
Ammonia (total) is used as ammonium hydroxide to neutralize acids in atmospheric and vacuum tower overhead circuits.						
o economically feasible options to reduce the use or creation of Ammonia (total) were identified at this ne						
Creation						
Does the plan include a statement that stipu substance at their facility?*	ılates the	owner or operato	r's intent to	create less of this toxic		
No						
If 'yes', provide the exact statement of inten	t:**					
If 'no', what rationale is specified in the plan	for not ci	eating less of this	substance	?:**		
Ammonia (total) created onsite is a byproduct of the complex chemical reactions occurring in conversion units onsite which cannot be controlled for individual substance creation.						
No economically feasible options to reduce the use or creation of Ammonia (total) were identified at this time						
Objectives, Targets and Desc	ription					
Plan Objectives	•					
Objectives in plan:*						
While Imperial Oil has not identified any feasible options to reduce the use or creation of Ammonia (total) at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Ammonia (total) in the coming years. These projects include but are not limited to improvements to the fugitive emission monitoring program						
Toxic Substance Use Targets						
Reduction target:*						
		Quantity		Unit		
⊠ No target	or					
Timeframe target:*						
-						

No target ■ No target N	or		years				
Description of use targets:							
Toxic Substance Creation Targ	gets						
Reduction target:*							
		Quantity	Unit				
☑ No target	or						
Timeframe target:*							
No target ■ No target N	or		years				
Description of creation targets:							
Reasons for Using this Toxic Substance							
This substance is used at the facility:*							
As a physical or chemical processing aid							
Summarize why this substance is used at the	e facility:	**					
Ammonia (total) is used as ammonium hydroxide to neutralize acids in atmospheric and vacuum tower overhead circuits.							
No economically feasible options to reduce the use or creation of Ammonia (total) were identified at this time							
Reasons for Creating this Toxic	c Sub	stance					
This substance is created at the facility:*							
As a by-product							
Summarize why this substance is created at	the facili	ty:**					
Ammonia (total) created onsite is a byproduct of the complex chemical reactions occurring in conversion units onsite which cannot be controlled for individual substance creation.							
No economically feasible options to reduce t time	he use o	r creation of Ammonia (tota	al) were identified at this				

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Toxic Reduction Options for Implementation Toxic substance reduction option(s) to be implemented: Does the plan specify that no toxic reduction option will be implemented?* Yes If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:* No technically and economically feasible reduction options were identified that are expected to reduce the use or creation of Ammonia (total) at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Ammonia (total) (total) at the Sarnia Refinery. Various projects at Sarnia refinery are expected to reduce fugitive emissions of Ammonia (total) in the coming years. These projects include but are not limited to improvements to the fugitive emission monitoring program Materials or feedstock substitution Product design or reformulation Equipment or process modifications Spill or leak prevention On-site reuse, recycling or recovery Improved inventory management or purchasing techniques Good operator practice or training Rationale for choosing these options for implementation: Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility: License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):* TSRP0071 License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):* **TSRP0071** Which version of the plan is reflected in this summary?*

New Plan

630-08-0, Carbon monoxide		
630-08-0, Carbon monoxide		
Substances Section Data		
Statement of Intent		
Use		
Does the plan include a statement that stipulates the substance at their facility?*	e owner or operator's intent to	use less of this toxic
No		
If 'yes', provide the exact statement of intent:**		
If 'no', what rationale is specified in the plan for not u	using less of this substance?*	*
Sarnia Refinery does not use Carbon Monoxide		
Creation		
Does the plan include a statement that stipulates the substance at their facility?*	e owner or operator's intent to	create less of this toxic
No		
If 'yes', provide the exact statement of intent:**		
If 'no', what rationale is specified in the plan for not of	creating less of this substance	9?:**
Sarnia Refinery has not identified any technically ar Carbon Monoxide at this time	d economically feasible optio	ons to reduce creation of
Objectives, Targets and Description		
Plan Objectives		
Objectives in plan:*		
Sarnia Refinery has not identified any technically ar Carbon Monoxide at this time	d economically feasible optio	ns to reduce creation of
Toxic Substance Use Targets		
Reduction target:*		
_	Quantity	Unit
No target or		

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Timeframe target:*			
⊠ No target	or		years
Description of use targets:			
Tavia Oubatanaa Onastian	T		
Toxic Substance Creation	ı argets		
Reduction target:*		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of creation targets:			
Reasons for Using this Tox	kic Substa	ance	
This substance is used at the facility:*			
This substance is not used at the facili	ty		
Summarize why this substance is used	I at the facility	.** ·	
Sarnia Refinery does not use Carbon I			
Reasons for Creating this	Toxic Sub	stance	
This substance is created at the facility	:*		
As a by-product			
Summarize why this substance is create	ted at the facil	lity:**	
Carbon Monoxide is estimated to be recombustion of various fuels in refinery equipment throughput. Sarnia refinery refinery products	eleased into the equipment. Converged relies on con	ne air, based on cor Carbon Monoxide en Dustion within fired	nbustion emission factors for the missions are a function of fired I equipment for the production of

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:
Does the plan specify that no toxic reduction option will be implemented?*
Yes
If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**
No technically or economically feasible options were identified that would be expected to reduce the creation of carbon monoxide at the facility. Therefore, Imperial Oil does not intend to implement any options to reduce the amount of carbon monoxide currently created at Sarnia Refinery
Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
1319-77-3, Cresol (all isomers, and their salts)
1319-77-3, Cresol (all isomers, and their salts)
Substances Section Data

Statement of Intent			
Use			
Does the plan include a statement that stipulate substance at their facility?*	es the o	wner or operator's intent to	use less of this toxic
Yes			
If 'yes', provide the exact statement of intent:**			
Cresol (all isomers, and their salts) is primarily antioxidant in engine oil formulations. Imperial Refinery and in doing so will eliminate the primarily Refinery	Oil plar	ns to stop lube oil blending	operations at Sarnia
If 'no', what rationale is specified in the plan for	not usi	ng less of this substance?	**
Creation			
Does the plan include a statement that stipulate substance at their facility?*	es the o	wner or operator's intent to	o create less of this toxic
No			
If 'yes', provide the exact statement of intent:**			
If 'no', what rationale is specified in the plan for	not cre	ating less of this substance	e?:**
Cresol (all isomers, and their salts) is not create	ed on s	ite	
Objectives, Targets and Descript	tion		
Plan Objectives			
Objectives in plan:*			
Cresol (all isomers, and their salts) primarily en blending. Cresol (all isomers, and their salts) is reducing the use of Cresol (all isomers, and the operations of the refinery	s not cr	eated at the Sarnia Refine	ry. Sarnia Refinery will be
Toxic Substance Use Targets			
Reduction target:*			
<u>_</u>		Quantity	Unit
☐ No target	or	2	tonnes

Timeframe target:*				
☐ No target	or	2	years	
Description of use targets:				
Cresol (all isomers, and their santioxidant in engine oil formulaefinery and in doing so will experiency	ılations. İmperial Oil pl	lans to stop lube oil	blending operations at San	nia
Toxic Substance Cre	ation Targets			
Reduction target:*				
		Quantity	Unit	
⊠ No target	or			
Timeframe target:*				
⊠ No target	or		years	
Description of creation targets	:			
Reasons for Using th	nis Toxic Substa	ance		
This substance is used at the				
As a formulation component				
Summarize why this substanc	e is used at the facility:	**		
Cresol (all isomers, and their antioxidant in engine oil formu	salts) is primarily used		ng additive that works as a	
Reasons for Creating	g this Toxic Sub	stance		
This substance is created at the	ne facility:*			
This substance is not created	at the facility			
Summarize why this substance	e is created at the facil	ity:**		
Cresol (all isomers, and their	salts) is not created on	site		

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Toxic Reduction Options for	r Implemen	tation		
Toxic substance reduction of	option(s) to	be implemen	nted:	
Does the plan specify that no toxic reduc	ction option will b	oe implemented?*		
No				
If 'No', record the option(s) under the ap Product design or reformulation).If 'Yes'				stock substitution;
Materials or feedstock subs	titution			
Product design or reformula	ation			
Equipment or process modi	fications			
Other				
Which activities will be under	ertaken to ir	mplement the	ese reduction	on options?
Select an option:*				
Other				
Describe the option:*				
Cresol (all isomers, and their salts) is primarily used in lube oil as blending additive that works as a antioxidant in engine oil formulations. Imperial Oil plans to stop lube oil blending operations at Sarnia Refinery and in doing so will eliminate the primary use of Cresol (all isomers, and their salts) at Sarnia Refinery				
Estimates				
Estimate of the amount by which the <st a="" as="" implementing="" of="" reduced="" result="" td="" the<=""><td>trong>useoption:</td><td>ng> of the toxic sub</td><td>ostance at the fa</td><td>cility will be</td></st>	trong>useoption:	ng> of the toxic sub	ostance at the fa	cility will be
□N/A	2	tonnes	100	%
Estimate of the amount by which the <st a="" as="" implementing="" of="" reduced="" result="" td="" the<=""><td>trong>creation<!--<br-->option:</td><td>strong> of the toxid</td><td>c substance at th</td><td>ne facility will be</td></st>	trong>creation <br option:	strong> of the toxid	c substance at th	ne facility will be
⊠N/A		tonnes		%
Estimate of the amount by which the tox facility will be reduced as a result of imp			the product <td>ong> leaving the</td>	ong> leaving the
□N/A	2	tonnes	100	%

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Estimate of the amount by which the total releases to air of the toxic substance at the facility will be reduced as a result of implementing the option: % X N/A tonnes Estimate of the amount by which the total releases to water of the toxic substance at the facility will be reduced as a result of implementing the option: N/A % tonnes Estimate of the amount by which the total releases to land of the toxic substance at the facility will be reduced as a result of implementing the option: % ⊠N/A tonnes Estimate of the amount by which the disposals on-site (including tailing and waste rock) of the toxic substance at the facility will be reduced as a result on implementing this option: ⊠N/A tonnes % Estimate of the amount by which the disposals off-site of the toxic substance at the facility will be reduced as a result on implementing this option: \times N/A % tonnes Estimate of the amount by which total recycling off-site of the toxic substance at the facility will be reduced as a result on implementing this option: ×N/A % tonnes **Timelines** Anticipated timelines for achieving the estimated reduction of the use of the toxic substance: N/A vears 2 Anticipated timelines for achieving the estimated reduction of the creation of the toxic substance: years Spill or leak prevention

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On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
business reasons unrelated to toxic reductions
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
110-82-7, Cyclohexane
110-82-7, Cyclohexane
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**
If 'no', what rationale is specified in the plan for not using less of this substance?**
Cyclohexane is currently used at the facility and enters the refinery in various feedstock including crude oil.
Sarnia refinery is in the business of extracting and producing Cyclohexane from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery

Creation					
Does the plan include a statement that stipulat substance at their facility?*	es the	owner or operato	r's intent to	create less of this toxic	2
No					
If 'yes', provide the exact statement of intent:**					
If 'no', what rationale is specified in the plan for	r not cr	eating less of this	substance	э ?:**	
Cyclohexane is created at the facility through to conversion units.	the con	nplex chemical re	actions oc	curring in the refineries	
Sarnia refinery is in the business of extracting streams to be used in the finished products ma			cane from c	crude oil and hydrocarb	on
Objectives, Targets and Descrip	tion				
Plan Objectives					
Objectives in plan:*					
While Imperial Oil has not identified any option refinery, various projects at Sarnia refinery are coming years. These projects include but are emission monitoring program	exped	ted to reduce fug	itive emiss	ions of Cyclohexane in	the
Toxic Substance Use Targets					
Reduction target:*					
		Quantity		Unit	
⊠ No target	or				
Timeframe target:*					

or

Toxic Substance Creation Targets

Reduction target:*

Description of use targets:

Quantity Unit

years

No target

⊠ No target	or				
Timeframe target:*					
⊠ No target	or			years	
Description of creation targets:					
Reasons for Using this Toxic	: Substa	nce			
This substance is used at the facility:*					
As a by-product					
Summarize why this substance is used at	the facility:	**			
Cyclohexane is currently used at the facility and enters the refinery in various feedstock including crude oil.					
Sarnia refinery is in the business of extracting and producing Cyclohexane from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery					
Reasons for Creating this To	xic Sub	stance			
This substance is created at the facility:*					
As a by-product					
Summarize why this substance is created	I at the facili	ty:**			
Cyclohexane is created at the facility throconversion units.	ough the con	nplex chemica	al reactions oc	ccurring in the refineries	3
Sarnia refinery is in the business of extra streams to be used in the finished produc				crude oil and hydrocarb	oon
Toxic Reduction Options for	Impleme	entation			
Toxic substance reduction of	ption(s)	to be imp	lemented	:	
Does the plan specify that no toxic reduct	ion option w	rill be impleme	ented?*		
Yes					

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If 'Yes', explain why no option will be implemented:**

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Sarnia refinery is in the business of producing finished products that utilize Cyclohexane from crude oil to achieve finished product specifications. No reduction options were identified to reduce the use or creation of Cyclohexane at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Cyclohexane in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
77-73-6, Dicyclopentadiene
77-73-6, Dicyclopentadiene
Substances Section Data
Statement of Intent
Use

Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic

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substance at their facility?*

No			
If 'yes', provide the exact statement of	intent:**		
If 'no', what rationale is specified in the	e plan for not u	sing less of this su	bstance?**
Dicyclopentadiene is not currently use	ed at the facility	1	
Creation			
Does the plan include a statement tha substance at their facility?*	t stipulates the	owner or operator	's intent to create less of this toxic
No			
If 'yes', provide the exact statement of	intent:**		
If 'no', what rationale is specified in the	e plan for not c	reating less of this	substance?:**
Dicyclopentadiene is not created at th	e facility		
Objectives, Targets and D	escription		
Plan Objectives			
Objectives in plan:*			
Dicyclopentadiene was not detected a and is not created. As such, no techni were identified	at measurable of ically and econ	concentrations in a omically feasible o	ny of the Refinery inputs or outputs ptions to reduce use and/or creation
Toxic Substance Use Targ	gets		
Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of use targets:			

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Toxic Substance Creation Targets Reduction target:* Quantity Unit or ☑ No target Timeframe target:* orNo target vears Description of creation targets: Reasons for Using this Toxic Substance This substance is used at the facility:* This substance is not used at the facility Summarize why this substance is used at the facility:** Dicyclopentadiene is not currently used at the facility Reasons for Creating this Toxic Substance This substance is created at the facility:* This substance is not created at the facility Summarize why this substance is created at the facility:** Dicyclopentadiene is not created at the facility Toxic Reduction Options for Implementation Toxic substance reduction option(s) to be implemented: Does the plan specify that no toxic reduction option will be implemented?* Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Dicyclopentadiene at Imperial Oil's Sarnia refinery. Dicyclopentadiene was not detected in measureable concentrations in any inputs, outputs and is not created at the Refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Dicyclopentadiene at the Sarnia Refinery

Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
107-21-1, Ethylene glycol
107-21-1, Ethylene glycol
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
Yes
If 'yes', provide the exact statement of intent:**
Ethylene glycol is primarily used in lube oil as blending additive that works as a detergent for cleanliness in engine oil formulations. Imperial Oil plans to stop lube oil blending operations at Sarnia Refinery and in doing so will eliminate the primary use of Ethylene glycol at Sarnia Refinery

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If 'no', what rationale is specified in the	plan for not u	sing less of this su	ıbstance?**	
Creation				
Does the plan include a statement that substance at their facility?*	stipulates the	owner or operator	r's intent to	create less of this toxic
No				
If 'yes', provide the exact statement of i	ntent:**			
If 'no', what rationale is specified in the	plan for not c	reating less of this	substance'	?:**
Ethylene glycol is not created on site				
Objectives, Targets and De	escription			
Plan Objectives	•			
Objectives in plan:*				
Ethylene glycol primarily enters the Sa glycol is not created at the Sarnia Refir the planned closure of the lube oil blen	nery. Sarniá F	Refinery will be red	e used in lub ducing the u	pe oil blending. Ethylene use of Ethylene glycol with
Toxic Substance Use Targ	ote			
Toxic Substance Use Target:*	GIS			
reduction target.		Quantity		Unit
	Or			
☐ No target	or	15		tonnes
Timeframe target:*				
☐ No target	or	2	<u> </u>	years
_				
Description of use targets:				
Ethylene glycol is primarily used in lube engine oil formulations. Imperial Oil pladoing so will eliminate the primary use	ans to stop lub	pe oil blending ope	erations at S	
Toxic Substance Creation	Targets			
Reduction target:*				
		Quantity		Unit

☑ No target	or		
Timeframe target:*			
No target ■ No target No target ■ No target N	or		years
Description of creation targets:			
Reasons for Using this Toxic Su	ıbstar	nce	
This substance is used at the facility:*			
As a formulation component			
Summarize why this substance is used at the f	acility:*	*	
Ethylene glycol is primarily used in lube oil as engine oil formulations.	blendin	g additive that works as a d	detergent for cleanliness in
Reasons for Creating this Toxic	Subs	stance	
This substance is created at the facility:*			
This substance is not created at the facility			
Summarize why this substance is created at the	e facilit	y:**	
Ethylene glycol is not created on site			
Toxic Reduction Options for Imp	oleme	entation	
Toxic substance reduction optio			
Does the plan specify that no toxic reduction o	` ,	•	
No			
If 'No', record the option(s) under the appropria Product design or reformulation). If 'Yes', expla	ate cate in why	gories below (e.g., Materia no option will be implement	ls or feedstock substitution; ted:**
Materials or feedstock substitution	on		,
Product design or reformulation			
Equipment or process modificati	ions		

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Other Which activities will be undertaken to implement these reduction options? Select an option:* Other Describe the option:* Ethylene glycol is primarily used in lube oil as blending additive that works as a detergent for cleanliness in engine oil formulations. Imperial Oil plans to stop lube oil blending operations at Sarnia Refinery and in doing so will eliminate the primary use of Ethylene glycol at Sarnia Refinery **Estimates** Estimate of the amount by which the use of the toxic substance at the facility will be reduced as a result of implementing the option: % □N/A 15 tonnes 100 Estimate of the amount by which the creation of the toxic substance at the facility will be reduced as a result of implementing the option: \times N/A % tonnes Estimate of the amount by which the toxic substance contained in the product leaving the facility will be reduced as a result of implementing the option: □N/A % tonnes 15 100 Estimate of the amount by which the total releases to air of the toxic substance at the facility will be reduced as a result of implementing the option: % ⊠N/A tonnes Estimate of the amount by which the total releases to water of the toxic substance at the facility will be reduced as a result of implementing the option: N/A × tonnes % Estimate of the amount by which the total releases to land of the toxic substance at the facility will be reduced as a result of implementing the option:

Estimate of the amount by which the disposals on-site (including tailing and waste rock) of the toxic substance at the facility will be reduced as a result on implementing this option:

tonnes

⊠N/A

%

⊠N/A	tonnes	%				
Estimate of the amount by which the disposals off-site of the toxic substance at the facility will be reduced as a result on implementing this option:						
⊠N/A	tonnes	%				
Estimate of the amount by which total <s a="" as="" be="" facility="" imp<="" on="" reduced="" result="" th="" will=""><th></th><th>f the toxic substance at the</th></s>		f the toxic substance at the				
⊠N/A	tonnes	%				
Timelines						
Anticipated timelines for achieving the esubstance:	stimated reduction of the u	ise of the toxic				
□ N/A	2	years				
Anticipated timelines for achieving the e substance:	stimated reduction of the c	reation of the toxic				
⊠ N/A		years				
Spill or leak prevention						
On-site reuse, recycling or r	ecovery					
Improved inventory manage	ement or purchasing tech	nniques				
Good operator practice or tr	raining					
Rationale for choosing these options for	implementation:					
business reasons unrelated to toxic red	uction					
Summary of actions undertaken outside the facility:	of the plan to reduce the use and c	creation of this toxic substance at				
License number of the toxic substance r substance (format TSRPXXXX):*	eduction planner who made the rec	commendations for this				
TSRP0071						

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

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invironment Canada
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
7783-06-4, Hydrogen sulphide
7783-06-4, Hydrogen sulphide
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**
If 'no', what rationale is specified in the plan for not using less of this substance?**
HYDROGEN SULPHIDE is currently used at the facility and enters the refinery in various feedstock including crude oil.
Sarnia refinery is in the business of extracting HYDROGEN SULPHIDE from crude oil and other hydrocarbons to meet finished product quality requirements. HYDROGEN SULPHIDE in the refinery is then destroyed by converting it to molten sulphur which is used in other commercial and industrial applications
Creation

Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*

No

If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not creating less of this substance?:**

HYDROGEN SULPHIDE is created at the facility in the conversion units through both cracking and hydrofining processes.

Sarnia refinery is in the business of extracting HYDROGEN SULPHIDE from crude oil and other hydrocarbons to meet finished product quality requirements. HYDROGEN SULPHIDE in the refinery is then destroyed by converting it to molten sulphur which is used in other commercial and industrial applications

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

While Imperial Oil has not identified any feasible options to reduce the use or creation of HYDROGEN SULPHIDE at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of HYDROGEN SULPHIDE in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of use targets:			
Toxic Substance Creation	Targets		
Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of creation targets:			
Reasons for Using this To	oxic Substa	ance	
This substance is used at the facility:			
As a by-product			

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Summarize why this substance is used at the facility:**

HYDROGEN SULPHIDE is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting HYDROGEN SULPHIDE from crude oil and other hydrocarbons to meet finished product quality requirements. HYDROGEN SULPHIDE in the refinery is then destroyed by converting it to molten sulphur which is used in other commercial and industrial applications

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

Summarize why this substance is created at the facility:**

HYDROGEN SULPHIDE is created at the facility in the conversion units through both cracking and hydrofining processes.

Sarnia refinery is in the business of extracting HYDROGEN SULPHIDE from crude oil and other hydrocarbons to meet finished product quality requirements. HYDROGEN SULPHIDE in the refinery is then destroyed by converting it to molten sulphur which is used in other commercial and industrial applications

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

Sarnia refinery is in the business of removing HYDROGEN SULPHIDE from crude oil and intermediate products to meet finished product specifications. No reduction options were identified to reduce the use or creation of HYDROGEN SULPHIDE at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of HYDROGEN SULPHIDE in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
78-79-5, Isoprene 78-79-5, Isoprene
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**
If 'no', what rationale is specified in the plan for not using less of this substance?**
Isoprene is currently used at the facility and enters the refinery in various feedstock including crude oil.
Sarnia refinery is in the business of extracting and producing Isoprene from crude oil and hydrocarbon streams to be used in the finished products marketed by the refinery
Creation

Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*

No			
If 'yes', provide the exact statement of inte	ent:**		
If 'no', what rationale is specified in the pla	an for not c	reating less of this	s substance?:**
Isoprene is created at the facility through conversion units.	the comple	ex chemical reaction	ons occurring in the refineries
Sarnia refinery is in the business of extra streams to be used in the finished produc	cting and p cts markete	roducing Isoprene d by the refinery	from crude oil and hydrocarbon
Objectives, Targets and Des	cription		
Plan Objectives			
Objectives in plan:*			
While Imperial Oil has not identified any orefinery, various projects at Sarnia refiner coming years. These projects include but emission monitoring program	ry are expe	cted to reduce fug	itive emissions of Isoprene in the
Toxic Substance Use Target	S		
Reduction target:*			
		Quantity	Unit
☑ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of use targets:			
Toxic Substance Creation Ta	argets		
Reduction target:*			
		Quantity	Unit
☑ No target	or		
Timeframe target:*			

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	or			1
No target ■ No target ■ No target No target ■ No target ■ No target ■ No target No ta	O.			years
Description of creation targets:				
Reasons for Using this Toxic Su	ubsta	nce		
This substance is used at the facility:*				
As a by-product				
Summarize why this substance is used at the	facility:	**		
Isoprene is currently used at the facility and e	nters th	ne refinery	in various feedst	ock including crude oil.
Sarnia refinery is in the business of extracting streams to be used in the finished products m				de oil and hydrocarbon
Reasons for Creating this Toxic	Sub	stance		
This substance is created at the facility:*				
As a by-product				
Summarize why this substance is created at the	he facili	ty:**		
Isoprene is created at the facility through the conversion units.	comple	x chemical	reactions occurr	ing in the refineries
Sarnia refinery is in the business of extracting streams to be used in the finished products m				de oil and hydrocarbon
Toxic Reduction Options for Imp	oleme	entation		
Toxic substance reduction optic	n(s)	to be in	nplemented	• •
Does the plan specify that no toxic reduction of	option w	ill be imple	emented?*	
Yes				
If 'No', record the option(s) under the appropri Product design or reformulation).If 'Yes', expla	ate cate	egories bel	ow (e.g., Materia will be implemen	als or feedstock substitution; ted:**
Sarnia refinery is in the business of producing achieve finished product specifications. No rof Isoprene at Imperial Oil's Sarnia refinery.	finishe eductio	ed products n options v	that utilize Isopi vere identified to	rene from crude oil to reduce the use or creation
Various projects at Sarnia refinery are expect years. These projects include but are not limit emission monitoring program				

Materials or feedstock substitution

Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
1313-27-5, Molybdenum trioxide
1313-27-5, Molybdenum trioxide
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not using less of this substance?**

Molybdenum Trioxide is used as a component of solid catalyst in refinery operations.

These types of catalysts are loaded into vessels, used over defined periods of time and then removed for recycling. The use of Molybdenum Trioxide containing catalysts is required in refining operations.

No economically feasible options to reduce	ce the use	of Molybdenum Tr	oxide were identified a	at this time
Creation				
Does the plan include a statement that sti substance at their facility?*	pulates the	owner or operato	's intent to create less	of this toxic
No				
If 'yes', provide the exact statement of inte	ent:**			
If 'no', what rationale is specified in the pla	an for not c	reating less of this	substance?:**	
Molybdenum Trioxide is not created at Sa	arnia Refine	ery		
Objectives, Targets and Des	cription			
Plan Objectives				
Objectives in plan:*				
While Imperial Oil has not identified any f Trioxide at the Sarnia refinery, Molybden refinery operations. All Molybdenum Trio recycling operations	um Trioxide	e is not released in	products or to the env	rironment from
Toxic Substance Use Target	'S			
Reduction target:*	.0			
rtoddonom targon		Quantity	Unit	
⊠ No target	or			
Timeframe target:*				
⊠ No target	or		years	
Description of use targets:				

Toxic Substance Creation Targets

Yes

Reduction target:*				
		Quantity		Unit
No target ■	or			
Timeframe target:*				
	or			years
Description of creation targets:				
Reasons for Using this Toxic Su	ıbsta	ince		
This substance is used at the facility:*				
As a physical or chemical processing aid				
Summarize why this substance is used at the	facility	**		
Molybdenum Trioxide is used as a componen	t of sol	id catalyst in refinery	operation	ons.
These types of catalysts are loaded into vesse recycling. The use of Molybdenum Trioxide c	els, use ontaini	ed over defined perion	ods of tim red in ref	ne and then removed for ining operations.
No economically feasible options to reduce th	e use (of Molybdenum Triox	kide were	e identified at this time
Reasons for Creating this Toxic	Sub	stance		
This substance is created at the facility:*				
This substance is not created at the facility				
Summarize why this substance is created at the	ne facil	ity:**		
Molybdenum Trioxide is not created at Sarnia	Refine	ery		
Toxic Reduction Options for Imp	olem	entation		
Toxic substance reduction option			ented:	
Does the plan specify that no toxic reduction of	` ,	-		

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If 'Yes', explain why no option will be implemented:**

No technically and economically feasible reduction options were identified that are expected to reduce the use or creation of Molybdenum Trioxide at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Molybdenum Trioxide at the Sarnia Refinery

Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
NA - 17, Nitrate ion in solution at pH >= 6.0 NA - 17, Nitrate ion in solution at pH >= 6.0
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No

If 'yes', provide the exact statement	of intent:**			
If 'no', what rationale is specified in	the plan for not υ	ısing less of this sı	ubstance?**	
NITRATE ION IN SOLUTION AT P	H >=6.0 is not us	sed at Sarnia Refir	ery	
Creation				
Does the plan include a statement t substance at their facility?*	that stipulates the	owner or operato	r's intent to create less of th	nis toxic
No				
If 'yes', provide the exact statement	of intent:**			
If 'no', what rationale is specified in	the plan for not c	reating less of this	substance?:**	
Sarnia Refinery does not use NITR identified any technically and econd SOLUTION AT PH >=6.0 at this time.	omically feasible			
Objectives, Targets and	Description			
Plan Objectives				
Objectives in plan:*				
Sarnia Refinery has not identified a NITRATE ION IN SOLUTION AT P	any technically an H >=6.0 at this ti	d economically fea me	asible options to reduce cre	ation of
Toxic Substance Use Ta	argets			
Reduction target:*	J			
		Quantity	Unit	
⊠ No target	or			
Timeframe target:*				
⊠ No target	or		years	
Description of use targets:				

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Toxic Substance Creation Targets Reduction target:* Quantity Unit or ☑ No target Timeframe target:* orNo target vears Description of creation targets: Reasons for Using this Toxic Substance This substance is used at the facility:* This substance is not used at the facility Summarize why this substance is used at the facility:** NITRATE ION IN SOLUTION AT PH >= 6.0 is not used at Sarnia Refinery Reasons for Creating this Toxic Substance This substance is created at the facility:* As a by-product Summarize why this substance is created at the facility:** NITRATE ION IN SOLUTION AT PH >=6.0 is created in the waste water treating biological oxidation units of the refinery Toxic Reduction Options for Implementation Toxic substance reduction option(s) to be implemented: Does the plan specify that no toxic reduction option will be implemented?* Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

No technically or economically feasible options were identified that would be expected to reduce the creation of NITRATE ION IN SOLUTION AT PH >=6.0 at the facility. Therefore, Imperial Oil does not intend to implement any options to reduce the amount of NITRATE ION IN SOLUTION AT PH >=6.0 currently created at Sarnia Refinery

Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
7446-09-5, Sulphur dioxide
7446-09-5, Sulphur dioxide
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in t	the plan for not u	ising less of this sub	stance?**
Sarnia Refinery does not use Sulph	ur Dioxide		
Creation			
Does the plan include a statement the substance at their facility?*	nat stipulates the	owner or operator's	s intent to create less of this toxic
No			
If 'yes', provide the exact statement	of intent:**		
If 'no', what rationale is specified in t	the plan for not c	reating less of this s	substance?:**
Sarnia Refinery has not identified at Sulphur Dioxide at this time	ny technically an	d economically feas	ible options to reduce creation of
Objectives, Targets and	Description		
Plan Objectives			
Objectives in plan:*			
Sarnia Refinery has not identified an Sulphur Dioxide at this time	ny technically an	d economically feas	ible options to reduce creation of
Toxic Substance Use Ta	rgets		
Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
No target ■	or		years
Description of use targets:			
Toxic Substance Creatio	n Targets		
Reduction target:*			
		Quantity	Unit

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⊠ No target	or		
Timeframe target:*			
No target	or		years
Description of creation targets:			
Reasons for Using this Toxic Su	ıbstar	nce	
This substance is used at the facility:*			
This substance is not used at the facility			
Summarize why this substance is used at the f	acility:*	*	
Sarnia Refinery does not use Sulphur Dioxide			
Reasons for Creating this Toxic	Subs	tance	
This substance is created at the facility:*			
As a by-product			
Summarize why this substance is created at the	e facilit	y:**	
Sulphur Dioxide is estimated to be released in combustion of various fuels in refinery equipment throughput. Sarnia refinery relies or refinery products	ent. Su	Ilphur Dioxide emissions ar	e a function of fired
Toxic Reduction Options for Imp	oleme	ntation	
Toxic substance reduction optio	n(s) t	o be implemented:	
Does the plan specify that no toxic reduction o	ption wi	II be implemented?*	
Yes			
If 'No', record the option(s) under the appropria Product design or reformulation).If 'Yes', expla			
No technically or economically feasible options creation of Sulphur Dioxide at the facility. The to reduce the amount of Sulphur Dioxide curre	erefore,	Imperial Oil does not inten	ected to reduce the d to implement any options
Materials or feedstock substitution	on		
Product design or reformulation			

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Equipment or process modifications						
Spill or leak prevention						
On-site reuse, recycling or recovery						
Improved inventory management or purchasing techniques						
Good operator practice or training						
Rationale for choosing these options for implementation:						
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:						
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*						
TSRP0071						
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*						
TSRP0071						
Which version of the plan is reflected in this summary?*						
New Plan						
NA - M09, PM10 - Particulate Matter <= 10 Microns						
NA - M09, PM10 - Particulate Matter <= 10 Microns						
Substances Section Data						
Statement of Intent						
Use						
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*						
No						
If 'yes', provide the exact statement of intent:**						
If 'no', what rationale is specified in the plan for not using less of this substance?**						
Sarnia Refinery does not use PM10 - PARTICULATE MATTER						

Creation				
Does the plan include a statement that stipulates substance at their facility?*	s the c	owner or operator's intent to	o create less of this toxic	
No				
If 'yes', provide the exact statement of intent:**				
If 'no', what rationale is specified in the plan for i	not cre	eating less of this substance	e?:**	
Sarnia Refinery has not identified any technicall PM10 - PARTICULATE MATTER	ly and	economically feasible option	ons to reduce creation of	
Objectives, Targets and Descript	ion			
Plan Objectives				
Objectives in plan:*				
Sarnia Refinery has not identified any technically and economically feasible options to reduce creation of PM10 - PARTICULATE MATTER				
Toxic Substance Use Targets				
Reduction target:*				
		Quantity	Unit	
☑ No target	or			
Timeframe target:*				
	or		years	
Description of use targets:				
Toxic Substance Creation Target	is.			
Reduction target:*				
		Quantity	Unit	
⊠ No target	or			
Timeframe target:*				

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No target	or		years
Description of creation targets:			
Reasons for Using this Toxic Su	bstar	nce	
This substance is used at the facility:*			
This substance is not used at the facility			
Summarize why this substance is used at the f	acility:*	*	
Sarnia Refinery does not use PM10 - PARTIC	ULATE	MATTER	
Reasons for Creating this Toxic	Subs	stance	
This substance is created at the facility:*			
As a by-product			
Summarize why this substance is created at the	e facilit	y:**	
PM10 - PARTICULATE MATTER			
Toxic Reduction Options for Imp	leme	entation	
Toxic substance reduction option	n(s) t	o be implemented:	
Does the plan specify that no toxic reduction of	ption wi	II be implemented?*	
Yes			
If 'No', record the option(s) under the appropriate Product design or reformulation). If 'Yes', explain	ate cate in why i	gories below (e.g., Material no option will be implement	ls or feedstock substitution; ed:**
No technically or economically feasible options creation of PM10 - PARTICULATE MATTER	s were i	dentified that would be exp	ected to reduce the
Materials or feedstock substitution	on		
Product design or reformulation			
Equipment or process modificati	ons		
Spill or leak prevention			
On-site reuse, recycling or recov	ery		
Improved inventory managemen	nt or p	ourchasing techniq	ues

Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
NA - M10, PM2.5 - Particulate Matter <= 2.5 Microns NA - M10, PM2.5 - Particulate Matter <= 2.5 Microns
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**
If 'no', what rationale is specified in the plan for not using less of this substance?**
Sarnia Refinery does not use PM2.5 - PARTICULATE MATTER
Creation
Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*
No

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If 'yes', provide the exact statement of intent:**

f 'no', what rationale is specified in the	plan for not c	reating less of this	substance?:**
Sarnia Refinery has not identified any PM2.5 - PARTICULATE MATTER	technically an	d economically feas	sible options to reduce creation of
Objectives, Targets and De	escription		
Plan Objectives			
Objectives in plan:*			
Sarnia Refinery has not identified any 1 PM2.5 - PARTICULATE MATTER	technically an	d economically feas	sible options to reduce creation of
Toxic Substance Use Targ	ets		
Reduction target:*			
		Quantity	Unit
☑ No target	or		
Timeframe target:*			
☑ No target	or		years
Description of use targets:			
Foxic Substance Creation	Targets		
Reduction target:*			
		Quantity	Unit
☑ No target	or		
Timeframe target:*			
☑ No target	or		years
Description of creation targets:			

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Reasons for Using this Toxic Substance
This substance is used at the facility:*
This substance is not used at the facility
Summarize why this substance is used at the facility:**
Sarnia Refinery does not use PM2.5 - PARTICULATE MATTER
Reasons for Creating this Toxic Substance
This substance is created at the facility:*
As a by-product
Summarize why this substance is created at the facility:**
PM2.5 - PARTICULATE MATTER
Toxic Reduction Options for Implementation
Toxic substance reduction option(s) to be implemented:
Does the plan specify that no toxic reduction option will be implemented?*
Yes
If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If 'Yes', explain why no option will be implemented:**
No technically or economically feasible options were identified that would be expected to reduce the creation of PM2.5 - PARTICULATE MATTER
Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:

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substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
NA - M14, Total reduced sulphur (expressed as hydrogen sulphide)
NA - M14, Total reduced sulphur (expressed as hydrogen sulphide)
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**
If 'no', what rationale is specified in the plan for not using less of this substance?**
TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) is currently used at the facility and enters the refinery in various feedstock including crude oil.
Sarnia refinery is in the business of extracting TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) from crude oil and other hydrocarbons to meet finished product quality requirements. TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) in the refinery is then destroyed by converting it to molten sulphur which is used in other commercial and industrial applications
Creation
Does the plan include a statement that stipulates the owner or operator's intent to create less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**
If 'no', what rationale is specified in the plan for not creating less of this substance?:**

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Objectives, Targets and Description

TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) is created at the facility in the conversion units through both cracking and hydrofining processes.

Sarnia refinery is in the business of extracting TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) from crude oil and other hydrocarbons to meet finished product quality requirements. TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) in the refinery is then destroyed by converting it to molten sulphur which is used in other commercial and industrial applications

Plan Objectives			
Objectives in plan:*			
While Imperial Oil has not identified any feasible REDUCED SULPHUR (EXPRESSED AS HYD at Sarnia refinery are expected to reduce fugitive (EXPRESSED AS HYDROGEN SULPHIDE) in limited to tank upgrades and improvements to the same Substance Lisa Targets.	ROGE ve eminate control	N SULPHIDE) at the Sarni ssions of TOTAL REDUCE oming years. These projec	a refinery, various projects D SULPHUR ts include but are not
Toxic Substance Use Targets Peduction target:*			
Reduction target:*		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of use targets:			
Toxic Substance Creation Targe Reduction target:*	ts		
reduction target.		Quantity	Unit
⊠ No target	or	quantity	
Timeframe target:*			

Description of creation targets:

No target

years

Reasons for Using this Toxic Substance

This substance is used at the facility:*

As a by-product

Summarize why this substance is used at the facility:**

TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) from crude oil and other hydrocarbons to meet finished product quality requirements. TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) in the refinery is then destroyed by converting it to molten sulphur which is used in other commercial and industrial applications

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

Summarize why this substance is created at the facility:**

TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) is created at the facility in the conversion units through both cracking and hydrofining processes.

Sarnia refinery is in the business of extracting TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) from crude oil and other hydrocarbons to meet finished product quality requirements. TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) in the refinery is then destroyed by converting it to molten sulphur which is used in other commercial and industrial applications

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If 'Yes', explain why no option will be implemented:**

Sarnia refinery is in the business of removing TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) from crude oil and intermediate products to meet finished product specifications. No reduction options were identified to reduce the use or creation of TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of TOTAL REDUCED SULPHUR (EXPRESSED AS HYDROGEN SULPHIDE) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program

Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
11104-93-1, Nitrogen oxides (expressed as NO2)
11104-93-1, Nitrogen oxides (expressed as NO2)
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**

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If 'no', what rationale is specified in the plan for not using less of this substance?**				
Sarnia Refinery does not use Nitrogen of	xides (expre	essed as NO2)		
Creation				
Does the plan include a statement that s substance at their facility?*	tipulates the	owner or operator	s intent to create less	s of this toxic
No				
If 'yes', provide the exact statement of in	tent:**			
If 'no', what rationale is specified in the p	lan for not c	reating less of this	substance?:**	
Sarnia Refinery has not identified any te Nitrogen oxides (expressed as NO2) at		d economically fea	sible options to reduc	e creation of
Objectives, Targets and Des	scription			
Plan Objectives				
Objectives in plan:*				
Sarnia Refinery has not identified any te Nitrogen oxides (expressed as NO2) at		d economically fea	sible options to reduc	e creation of
Toxic Substance Use Targe	ts			
Reduction target:*				
		Quantity	Unit	
⊠ No target	or			
Timeframe target:*				
⊠ No target	or		years	
Description of use targets:				
Toxic Substance Creation T	argets			
Reduction target:*				
		Quantity	Unit	

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☑ No target	or			
Timeframe target:*				
⊠ No target	or		years	
Description of creation targets:				
Reasons for Using this Toxic Su	ıbstar	nce		
This substance is used at the facility:*				
This substance is not used at the facility				
Summarize why this substance is used at the	facility:*	*		
Sarnia Refinery does not use Nitrogen oxides	(expres	sed as NO2)		
December Organian this Toxio	Cuba	.		
Reasons for Creating this Toxic	Subs	tance		
This substance is created at the facility:*				
As a by-product				
Summarize why this substance is created at the	ne facilit	y:**		
Nitrogen oxides (expressed as NO2) is estimated to be released into the air, based on combustion emission factors for the combustion of various fuels in refinery equipment. Nitrogen oxides (expressed as NO2) emissions are a function of fired equipment throughput. Sarnia refinery relies on combustion within fired equipment for the production of refinery products				
Toxic Reduction Options for Imp	oleme	ntation		
Toxic substance reduction optio	n(s) t	o be implemented		
Does the plan specify that no toxic reduction o	ption wi	Il be implemented?*		
Yes				
If 'No', record the option(s) under the appropria Product design or reformulation).If 'Yes', expla				
No technically or economically feasible option creation of Nitrogen oxides (expressed as NO implement any options to reduce the amount of Sarnia Refinery	2) at the	e facility. Therefore, Impe	rial Oil does not intend to	
Materials or feedstock substituti	on			

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Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
NA - M08, Total Particulate Matter
NA - M08, Total Particulate Matter
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**

If 'no', what rationale is specified in the plan for not using less of this substance?**

Sarnia Refinery does not use TOTA	L PARTICULAT	E MATTER	
Creation			
Does the plan include a statement the substance at their facility?*	nat stipulates the	e owner or operator'	s intent to create less of this toxic
No			
If 'yes', provide the exact statement	of intent:**		
If 'no', what rationale is specified in t	•		
Sarnia Refinery has not identified an TOTAL PARTICULATE MATTER at		d economically feas	sible options to reduce creation of
Objectives, Targets and	Description		
Plan Objectives	200011941011		
Objectives in plan:*			
Sarnia Refinery has not identified an TOTAL PARTICULATE MATTER at		d economically feas	sible options to reduce creation of
Toxic Substance Use Ta	rgets		
Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
No target ■ No target No targ	or		years
Description of use targets:			
Toxic Substance Creatio	n Targets		
Reduction target:*	-		
		Quantity	Unit
☑ No target	or		

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Timeframe target:*		
No target	or	years
Description of creation targets:		
Reasons for Using this To	oxic Substance	
This substance is used at the facility:*		
This substance is not used at the faci	lity	
Summarize why this substance is use	ed at the facility:**	
Sarnia Refinery does not use TOTAL	PARTICULATE MATTER	
Reasons for Creating this	Toxic Substance	
This substance is created at the facilit		
As a by-product		
Summarize why this substance is crea	ated at the facility:**	
TOTAL PARTICULATE MATTER is of generated during combustion and generated during combustions.	created in fluid catalytic crackin neral refinery operations	ng and coking units, cooling towers,
Toxic Reduction Options f	or Implementation	
Toxic substance reduction		emented:
Does the plan specify that no toxic red	duction option will be impleme	ented?*
Yes		
If 'No', record the option(s) under the a Product design or reformulation).If 'Ye	appropriate categories below es', explain why no option will	(e.g., Materials or feedstock substitution; be implemented:**
No technically or economically feasible creation of TOTAL PARTICULATE Management any options to reduce the Sarnia Refinery	ATTER at the facility. Theref	fore, Imperial Oil does not intend to
Materials or feedstock sub	ostitution	
Product design or reformu	ılation	
Equipment or process mo	difications	

Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
207-08-9, Benzo(k)fluoranthene
207-08-9, Benzo(k)fluoranthene
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**
If 'no', what rationale is specified in the plan for not using less of this substance?**
Benzo(k)fluoranthene is currently used at the facility and enters the refinery in purchased feed.
Benzo(k)fluoranthene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products.

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Creation			
Does the plan include a statement that s substance at their facility?*	tipulates the	e owner or operator's	s intent to create less of this toxic
No			
If 'yes', provide the exact statement of in	tent:**		
If 'no', what rationale is specified in the p	lan for not o	creating less of this	substance?:**
Benzo(k)fluoranthene is created at the fa fluid catalytic cracking unit and the coke		conversion units wh	nere thermal cracking occurs like the
The Benzo(k)fluoranthene created onsituthermal cracking, and its creation is minimum.	e is a byprod imized	duct of the complex	chemical reactions occurring during
Objectives, Targets and Des	scription		
Plan Objectives			
Objectives in plan:*			
Benzo(k)fluoranthene enters the facility cracking. No options to reduce the use	in purchase or creation o	d feedstock, and is of Benzo(k)fluoranth	created as a byproduct from thermal ene were identified
Toxic Substance Use Targe	ts		
Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
No target ■	or		years
Description of use targets:			
Toxic Substance Creation T	argets		
Reduction target:*			
		Quantity	Unit
☑ No target	or		

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Timeframe target:*				
No target	or			years
Description of creation targets:				
Reasons for Using this	Toxic Substa	ance		
This substance is used at the fac				
As a by-product				
Summarize why this substance is	s used at the facility	/: ^{**}		
Benzo(k)fluoranthene is currentl	y used at the facility	and enters	the refinery in p	urchased feed.
Benzo(k)fluoranthene used at th meet market and contractual de	e facility is a compo	onent of the pery's products	ourchased feeds s.	stock that is required to
Reasons for Creating t	his Toxic Sut	ostance		
This substance is created at the	facility:*			
As a by-product				
Summarize why this substance is	s created at the faci	ility:**		
Benzo(k)fluoranthene is created fluid catalytic cracking unit and the		conversion (units where the	mal cracking occurs like the
The Benzo(k)fluoranthene create thermal cracking, and its creation		duct of the co	omplex chemica	al reactions occurring during
Toxic Reduction Optio	ns for Implem	entation		
Toxic substance reduc	tion option(s)	to be im	plemented	:
Does the plan specify that no tox	ic reduction option	will be imple	mented?*	
Yes				
If 'No' record the antion(s) under	r the appropriate ca	togorios bolc	w (e.a. Matorio	ale or foodstock substitution:

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Benzo(k)fluoranthene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Benzo(k)fluoranthene at the Sarnia Refinery.

Benzo(k)fluoranthene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Benzo(k)fluoranthene created at the facility is minimized

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Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
53-70-3, Dibenzo(a,h)anthracene
53-70-3, Dibenzo(a,h)anthracene
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic substance at their facility?*
No
If 'yes', provide the exact statement of intent:**

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lf	'no'	what	rationa	ale is	specified	in the	nlan e	for not	usina	less	of this	substance	**?ج
•••	110,	vviiat	Tallolle	210 13	Specifica	111 (11)	Piaii	101 1101	asing	1000	01 11113	Jubblano	∵ :

Dibenzo(a,h)anthracene is currently used at the facility and enters the refinery in purchased feed.

Dibenzo(a,h)anthracene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products.

Creation

Timeframe target:*

Description of use targets:

No target

<u> </u>					
Does the plan include a statement substance at their facility?*	that stipulates the	owner or operato	or's intent to	create less of the	nis toxic
No					
If 'yes', provide the exact statemer	nt of intent:**				
If 'no', what rationale is specified in	n the plan for not cr	eating less of thi	s substance	9?:**	
Dibenzo(a,h)anthracene is created the fluid catalytic cracking unit and	d at the facility in th d the coker reactor.	e conversion uni	ts where th	ermal cracking o	ccurs like
The Dibenzo(a,h)anthracene crea during thermal cracking, and its cr			plex chemi	cal reactions occ	curring
Objectives, Targets and	Description				
Plan Objectives					
Objectives in plan:*					
Dibenzo(a,h)anthracene enters the thermal cracking. No options to re	e facility in purchas educe the use or cr	ed feedstock, an eation of Dibenzo	d is created o(a,h)anthra	d as a byproduct acene were iden	from tified
Toxic Substance Use T	argets				
Reduction target:*					
		Quantity		Unit	
☑ No target	or				

years

or

Toxic Substance Creation Targets Reduction target:* Quantity Unit or ☑ No target Timeframe target:* orNo target vears Description of creation targets: Reasons for Using this Toxic Substance This substance is used at the facility:* As a by-product Summarize why this substance is used at the facility:** Dibenzo(a,h)anthracene is currently used at the facility and enters the refinery in purchased feed. Dibenzo(a,h)anthracene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products. Reasons for Creating this Toxic Substance This substance is created at the facility:* As a by-product Summarize why this substance is created at the facility:** Dibenzo(a,h)anthracene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor. The Dibenzo(a,h)anthracene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized Toxic Reduction Options for Implementation Toxic substance reduction option(s) to be implemented: Does the plan specify that no toxic reduction option will be implemented?* Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Dibenzo(a,h)anthracene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Dibenzo(a,h)anthracene at the Sarnia Refinery.

Dibenzo(a,h)anthracene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Dibenzo(a,h)anthracene created at the facility is minimized

Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
74-90-8, Hydrogen cyanide
74-90-8, Hydrogen cyanide
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic

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substance at their facility?*

No			
If 'yes', provide the exact statement	of intent:**		
If 'no', what rationale is specified in t	the plan for not u	sing less of this s	ubstance?**
Hydrogen cyanide is not used at Sa	rnia Refinery		
Creation			
Does the plan include a statement the substance at their facility?*	nat stipulates the	owner or operato	or's intent to create less of this toxic
No			
If 'yes', provide the exact statement	of intent:**		
If 'no', what rationale is specified in t	the plan for not c	reating less of this	s substance?:**
Hydrogen cyanide created onsite is units onsite which cannot be control			
No economically feasible options to time	reduce the use	or creation of Hyd	rogen cyanide were identified at this
Objectives, Targets and I	Description		
Plan Objectives			
Objectives in plan:*			
While Imperial Oil has not identified at the Sarnia refinery, various project Hydrogen cyanide in the coming year fugitive emission monitoring program	cts at Sarnia refir ars. These proje	nery are expected	to reduce fugitive emissions of
Toxic Substance Use Ta	rgets		
Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
No target ■	or		years
Description of use targets:			

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Reduction target:*				
-		Quantity	Unit	
⊠ No target	or			
Timeframe target:*				
⊠ No target	or		years	
Description of creation targets	:			
Reasons for Using the		ince		
This substance is used at the	•			
This substance is not used at	the facility			
Summarize why this substance	e is used at the facility:	**		
Hydrogen cyanide is not used	at Sarnia Refinery			
Reasons for Creating	g this Toxic Sub	stance		
This substance is created at the	ne facility:*			
As a by-product				
Summarize why this substance	e is created at the facil	ity:**		
Hydrogen cyanide created on units onsite which cannot be o				version
No economically feasible option	ons to reduce the use o	or creation of Hydro	gen cyanide were identified	at this
Toxic Reduction Opt	ions for Implem	entation		
Toxic substance redu	uction option(s)	to be impleme	ented:	
Does the plan specify that no	toxic reduction option v	vill be implemented	*	
Yes				

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If 'Yes', explain why no option will be implemented:**

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No technically and economically feasible reduction options were identified that are expected to reduce the use or creation of Hydrogen cyanide at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Hydrogen cyanide (total) at the Sarnia Refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Hydrogen cyanide in the coming years. These projects include but are not limited to improvements to the fugitive emission monitoring program

Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan
198-55-0, Perylene
198-55-0, Perylene
Substances Section Data
Statement of Intent
Use
Does the plan include a statement that stipulates the owner or operator's intent to use less of this toxic

substance at their facility?*

No			
If 'yes', provide the exact statement of in	ntent:**		
If 'no', what rationale is specified in the	nlan for not u	sing less of this s	uhstance?**
	-		
Perylene is currently used at the facility Perylene used at the facility is a compocontractual demands for the refinery's p	nent of the p		
Creation			
Does the plan include a statement that substance at their facility?*	stipulates the	owner or operato	r's intent to create less of this toxic
No			
If 'yes', provide the exact statement of in	ntent:**		
If 'no', what rationale is specified in the	•		
Perylene is created at the facility in the catalytic cracking unit and the coker real. The Perylene created onsite is a byprocracking, and its creation is minimized.	actor.		·
Objectives, Targets and De	scription		
Plan Objectives			
Objectives in plan:*			
Perylene enters the facility in purchase No options to reduce the use or creation			a byproduct from thermal cracking.
Toxic Substance Use Targe	ets		
Reduction target:*			
		Quantity	Unit
⊠ No target	or		
Timeframe target:*			
No target ■ Target	or		years

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Description of use targets:			
Toxic Substance Cro	action Targets		
Toxic Substance Cre	alion rargets		
Reduction target:*		0	11!
		Quantity	Unit
☑ No target	or		
Timeframe target:*			
⊠ No target	or		years
Description of creation targets	:		
Reasons for Using the This substance is used at the As a by-product			
Summarize why this substance	o is used at the facility	.**	
Perylene is currently used at t			ased feed
	a component of the p	, ,	that is required to meet market and
Reasons for Creating	g this Toxic Sub	stance	
This substance is created at the	ne facility:*		
As a by-product			
Summarize why this substanc	e is created at the faci	lity:**	
Perylene is created at the faci catalytic cracking unit and the		ınits where thermal	cracking occurs like the fluid
The Perylene created onsite is cracking, and its creation is m		omplex chemical rea	actions occurring during thermal
Toxic Reduction Opt	ions for Implem	entation	
Toxic substance redu	uction option(s)	to be implem	ented:

Does the plan specify that no toxic reduction option will be implemented?*

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation). If 'Yes', explain why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Perylene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Perylene at the Sarnia Refinery.

Perylene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Perylene created at the facility is minimized

Materials or feedstock substitution
Product design or reformulation
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training
Rationale for choosing these options for implementation:
Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:
License number of the toxic substance reduction planner who made the recommendations for this substance (format TSRPXXXX):*
TSRP0071
License number of the toxic substance reduction planner who certified the plan for this substance (format TSRPXXXX):*
TSRP0071
Which version of the plan is reflected in this summary?*
New Plan

Highest Ranking Employee
As of <u>Pecember 17, 2013</u> , I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act, 2009</i> and Ontario Regulation 455/09 (General) made under that Act.
• 1319-77-3 Cresol (all isomers, and their salts)
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/17/20/3, I, Scott Manser certify that I am familiar with the processes Planner Name at Imperial Oil's Sarnia 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 4ct, 2009 that are set out in the plan dated 12/17/20/3 and that the plan complies with the Act and Ontario Regulation 455/09 (General) made under that Act.
• 1319-77-3 Cresol (all isomers, and their salts)
IAM 15R80071 12/17/2013
Scott Manser License Number Date
Toxic Substance Reduction Planner

righest Kanking Employee
As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
• 107-21-1 Ethylene glycol
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/17/2013, I, Scott Manser certify that I am familiar with the processes Planner Name at Imperial Oil's Sarnia 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 12/17/2013 and that the plan complies with the Act and Ontario Regulation 455/09 (General) made under that Act. • 107-21-1 Ethylene glycol
Scott Manser License Number Date Toxic Substance Reduction Planner

riignesi Kanking Employee
As of 12 /17 /2013, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
• 77-73-6 Dicyclopentadiene
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of Jalian, I, Scott Manser certify that I am familiar with the processes Planner Name at Imperial Oil's Sarnia 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 12/17/20/3 and that the plan complies with the Act and Ontario Regulation 455/09 (General) made under that Act.
• 77-73-6 Dicyclopentadiene
Scott Manser TSRPOOT 18/17/2013 Scott Manser License Number Date Toxic Substance Reduction Planner

ruguest Kanking Employee
As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
• 109-99-9 Tetrahydrofuran
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/17/2013, I, Scott Manser certify that I am familiar with the processes Planner Name
at Imperial Oil's Sarnia 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 <i>Toxics Reduction Act</i> , 2009 that are set out in the plan dated/2//3/ and that the plan complies with tha Act and Ontario Regulation 455/09 (General) made under that Act.
• 109-99-9 Tetrahydrofuran
Toxic Substance Reduction Planner

riignesi Kanking Employee			
As of 12 /17 /2013, I, Br	ian Fairley, certify that I hav	ve read the toxic substance	
reduction plan for the toxic substance knowledge the plan is factually accura Regulation 455/09 (General) made und	referred to below and am far te and complies with the To:	miliar with its contents, and to my	
• 207-8-9 Benzo(k)fluoranthe	ene		
Brian Fairley Refinery Manager, Sarnia Refinery	12/17 Date	/2013	
Toxic Substance Reduction Planner			
As of/2 //7 /26/3, I, _Solution Date Plant Imperial Oil's Sarnia Refinery that with the estimates referred to in subpart Act, 2009 that are set out in the plan dated Act and Ontario Regulation 455/09 (G	use or create the toxic substa ragraphs 7 iii, iv and v of sul ated <u>12/17/2013</u>	nces referred to below, that I agre bsection 4 (1) of the <i>Toxics Reduc</i> and that the plan complies with	tion
• 207-8-9 Benzo(k)fluoranthe	ene		
Int Man	T5RP0071	<i>12/17/2013</i> Date	
Scott Manser	License Number	Date	
Toxic Substance Reduction Planner			

Highest Ranking Employee
As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
• 53-70-3 Dibenzo(a,h)anthracene
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of
• 53-70-3 Dibenzo(a,h)anthracene
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance 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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
• 198-55-0 Perylene
Brian Fairley Refinery Manager, Sarnia Refinery Date
Toxic Substance Reduction Planner
As of 12/17/2013, I, Scott Manser certify that I am familiar with the processes Planner Name at Imperial Oil's Sarnia 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 12/17/2013 and that the plan complies with the Act and Ontario Regulation 455/09 (General) made under that Act.
• 198-55-0 Perylene
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee				
As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance				
reduction plan for the toxic substance r knowledge the plan is factually accurat Regulation 455/09 (General) made und	e and complies with the Tox	niliar with its contents, and to my rics Reduction Act, 2009 and Ontario		
• 95-63-6 1, 2, 4-Trimethylber	nzene			
Bun Jal		2013		
Brian Fairley Refinery Manager, Samia Refinery	Date			
Toxic Substance Reduction Planner				
As of 12/17/2013, I, Sc Date Plan at Imperial Oil's Sarnia Refinery that us with the estimates referred to in subpara	se or create the toxic substar	nces referred to below, that I agree section 4 (1) of the <i>Toxics Reduction</i>		
Act, 2009 that are set out in the plan dat Act and Ontario Regulation 455/09 (Ge	neral) made under that Act.	_ and that the plan complies with that		
• 95-63-6 1, 2, 4-Trimethylber	nzene			
LA Men	15RP6071	13/17/2013		
Scott Manser Toxic Substance Reduction Planner	License Number	12/17/2013 Date		

Highest Ranking Employee

As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance 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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
• ** PM10 - PARTICULATE MATTER <= 10 MICRONS
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
** TOTAL PARTICULATE MATTER
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of
** TOTAL PARTICULATE MATTER
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee			
As of 12/17/2013, I, Bri	an Fairley, certify that I	have read the toxic substance	
reduction plan for the toxic substance is knowledge the plan is factually accurate Regulation 455/09 (General) made und	referred to below and am te and complies with the	n familiar with its contents, and t	
 7783-06-4 HYDROGEN SU 	JLPHIDE		
Brian Fairley Refinery Manager, Sarnia Refinery	Date	7/2013	
Toxic Substance Reduction Planner			
As of 12/17/2013, I, So Date Date, I Pla at Imperial Oil's Sarnia Refinery that with the estimates referred to in subpar Act, 2009 that are set out in the plan da Act and Ontario Regulation 455/09 (Go	use or create the toxic substantial ragraphs 7 iii, iv and v of ated	bstances referred to below, that I f subsection 4 (1) of the <i>Toxics R</i> and that the plan complies	I agree Reduction
 7783-06-4 HYDROGEN SU 	JLPHIDE		
let Man	15RP0071	12/17/2013 Date	
Scott Manser	License Number	Date	
Toxic Substance Reduction Planner			

Highest Ranking Employee			
As of 12/17/2013, I, Br	ian Fairley, certify that I	I have read the toxic substance	
reduction plan for the toxic substance knowledge the plan is factually accura Regulation 455/09 (General) made und	te and complies with the		
• ** TOTAL REDUCED SU	LPHUR (EXPRESSE	D AS HYDROGEN SULPHIDE)	
Brian Fairley Refinery Manager, Sarnia Refinery		7/2013	
Toxic Substance Reduction Planner			
As of 12/17/26/3, I, S Date Pl at Imperial Oil's Sarnia Refinery that is with the estimates referred to in subpar Act, 2009 that are set out in the plan da Act and Ontario Regulation 455/09 (G	use or create the toxic su ragraphs 7 iii, iv and v o ated <u>[2]7 /20/</u>	substances referred to below, that I agr of subsection 4 (1) of the <i>Toxics Redu</i> and that the plan complies with	ction
** TOTAL REDUCED SU	LPHUR (EXPRESSE	D AS HYDROGEN SULPHIDE)	
let Man	TSRP0071	<u>12117 /2013</u> Date	
Scott Manser	License Number	Date	
Toxic Substance Reduction Planner			

Highest Ranking Employee
As of $\frac{12/17/2013}{Date}$, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act, 2009</i> and Ontario Regulation 455/09 (General) made under that Act.
• 630-08-0 Carbon Monoxide
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/12/2013, I, Scott Manser certify that I am familiar with the processes Planner Name
at Imperial Oil's Sarnia 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 <i>Toxics Reduction Act, 2009</i> that are set out in the plan dated and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
• 630-08-0 Carbon Monoxide
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act, 2009</i> and Ontario Regulation 455/09 (General) made under that Act.
• 11104-93-1 Nitrogen oxides (expressed as NO2)
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 1817/2613, I, Scott Manser certify that I am familiar with the processes Planner Name at Imperial Oil's Sarnia 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 12/17/2013 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
• 11104-93-1 Nitrogen oxides (expressed as NO2)
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Kanking Employee
As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance 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 <i>Toxics Reduction Act</i> , 2009 and Ontari Regulation 455/09 (General) made under that Act.
• 1446-09-5 Sulphur Dioxide
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of <u> 1211712613</u> , I, <u>Scott Manser</u> certify that I am familiar with the processes Planner Name
at Imperial Oil's Sarnia 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 <i>Toxics Reduction Act</i> , 2009 that are set out in the plan dated
• 1446-09-5 Sulphur Dioxide
Scott Manser License Number Date Toxic Substance Reduction Planner

Tilghesi Kunking Employee
As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
• 1313-27-5 Molybdenum Trioxide
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/17/20/3, I, Scott Manser certify that I am familiar with the processes Planner Name at Imperial Oil's Sarnia 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 12/14/20/3 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
• 1313-27-5 Molybdenum Trioxide
At Ma TSRP0071 1211712013
Scott Manser License Number Date
Toxic Substance Reduction Planner

riigiiesi Kanking Employee
As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
** Ammonia (total)
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/17/2013, I, Scott Manser certify that I am familiar with the processes Planner Name at Imperial Oil's Sarnia 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 12/17/26/3 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
** Ammonia (total)
Toxic Substance Reduction Planner

Highest Ranking Employee
As of, I, Brian Fairley, certify that I have read the toxic substance 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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
• 74-90-8 Hydrogen cyanide
Brian Fairley Brian Fairley Date Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/17/20/3, I, Scott Manser certify that I am familiar with the processes Date Planner Name at Imperial Oil's Sarnia 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 12/17/2013 and that the plan complies with the Act and Ontario Regulation 455/09 (General) made under that Act.
• 74-90-8 Hydrogen cyanide
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee

Highest Ranking Employee

As of 2013 / 12/17, I, Brid Date reduction plan for the toxic substance re knowledge the plan is factually accurat Regulation 455/09 (General) made und	eferred to below and am fan e and complies with the <i>Tox</i>	niliar with its contents, and to my	
 ** Butane (all isomers) 			
Brian Fairley Refinery Manager, Samia Refinery	12 / 17 Date	/2013	
As of 12/17/2013, I, So Plante at Imperial Oil's Sarnia Refinery that u with the estimates referred to in subparance, 2009 that are set out in the plan day Act and Ontario Regulation 455/09 (Geometric Substitution 1998).	se or create the toxic substar agraphs 7 iii, iv and v of sub ted/2//7/20/3	nces referred to below, that I agree section 4 (1) of the <i>Toxics Reduction</i>	
• ** Butane (all isomers) Scott Manser Toxic Substance Reduction Planner	TSRP0071 License Number	1211712023 Date	

Highest Ranking Employee
As of $12/17/2013$, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act, 2009</i> and Ontario Regulation 455/09 (General) made under that Act.
** Cyclohexene (all isomers)
Brian Fairley Refinery Manager, Samia Refinery
Toxic Substance Reduction Planner
As of 12/17/2013, I, Scott Manser certify that I am familiar with the processes
at Imperial Oil's Sarnia 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 <i>Toxics Reduction Act</i> , 2009 that are set out in the plan dated 12/17/20/3 and that the plan complies with tha Act and Ontario Regulation 455/09 (General) made under that Act.
** Cyclohexene (all isomers)
Int M TSRP6071 12/17/2013
Scott Manser License Number Date Toxic Substance Reduction Planner
TOXIC SUBSIDICE REDUCTION FIAINIEN

Highest Ranking Employee		
As of 12 /17 /2013, I, Brian	Fairley, certify that I hav	e read the toxic substance
reduction plan for the toxic substance refe knowledge the plan is factually accurate a Regulation 455/09 (General) made under	rred to below and am far nd complies with the <i>Tox</i>	niliar with its contents, and to my
 ** Cylcooctane (all isomers) 		
Buen For T	12 / 17 Date	/2013
Brian Fairley Refinery Manager, Sarnia Refinery	Date	· · · · · · · · · · · · · · · · · · ·
Toxic Substance Reduction Planner		
As of <u>18/17/20/3</u> , I, <u>Scott</u> Date Planner at Imperial Oil's Sarnia Refinery that use of with the estimates referred to in subparagra Act, 2009 that are set out in the plan dated Act and Ontario Regulation 455/09 (General	or create the toxic substan aphs 7 iii, iv and v of sub 	nces referred to below, that I agree esection 4 (1) of the <i>Toxics Reduction</i> and that the plan complies with that
• ** Cylcooctane (all isomers)		
la Man	TSRP0071 icense Number	18/17/2013
Scott Manser L	icense Number	Date
Toxic Substance Reduction Planner		

Highest Kanking Employee		
As of 12/17/2013, I, Bri	an Fairley, certify that I have	e read the toxic substance
reduction plan for the toxic substance r knowledge the plan is factually accurat Regulation 455/09 (General) made und	eferred to below and am fan e and complies with the <i>Tox</i>	niliar with its contents, and to my
 ** Decane (all isomers) 		
Brian Fairley Refinery Manager, Sarnia Refinery		/2013
Toxic Substance Reduction Planner		
As of 18/17/2013, I, So Date Date, I, So Plate at Imperial Oil's Sarnia Refinery that u with the estimates referred to in subpart Act, 2009 that are set out in the plan da Act and Ontario Regulation 455/09 (Go	se or create the toxic substar agraphs 7 iii, iv and v of sub ted/2/17/2013	nces referred to below, that I agree osection 4 (1) of the <i>Toxics Reduction</i> and that the plan complies with tha
 ** Decane (all isomers) 		
Scott Manser Toxic Substance Reduction Planner	T5 RP00 7) License Number	13/17/2013 Date

Highest Ranking Employee

As of 12/17/2013, I, Bri	an Fairley, certify that	I have read the toxic substance	
reduction plan for the toxic substance reknowledge the plan is factually accurate Regulation 455/09 (General) made und	referred to below and and the second terms and complies with the	m familiar with its contents, and to m	
 ** Heptane (all isomers) 			
Brian Fairley Refinery Manager, Samia Refinery		/2013	
Toxic Substance Reduction Planner			
As of 12/17/2013, I, Sc Date Pla	cott Manser_ certify tha	t I am familiar with the processes	
at Imperial Oil's Sarnia Refinery that u with the estimates referred to in subpar <i>Act</i> , 2009 that are set out in the plan da Act and Ontario Regulation 455/09 (Ge	se or create the toxic su agraphs 7 iii, iv and vo ted/2//7/20/	ubstances referred to below, that I agreed to be subsection 4 (1) of the <i>Toxics Reduction</i> and that the plan complies with	ction
 ** Heptane (all isomers) 			
let Man-	T5RP0071	12117/2013	
Scott Manser	License Number		
Toxic Substance Reduction Planner			

Highest Ranking Employee		
As of 12/17/2013, I, Br	ian Fairley, certify that I have	ve read the toxic substance
reduction plan for the toxic substance knowledge the plan is factually accura Regulation 455/09 (General) made und	te and complies with the To	miliar with its contents, and to my exics Reduction Act, 2009 and Ontario
 ** Hexane (all isomers excl 	uding n-hexane)	
Brian Fairley	/2 //-	7/2013
Refinery Manager, Sarnia Refinery	Date	
Toxic Substance Reduction Planner		
As of 12/17/2013, I, <u>So</u>	cott Manser_ certify that I a	m familiar with the processes
at Imperial Oil's Sarnia Refinery that u with the estimates referred to in subpar	agraphs 7 iii, iv and v of su	bsection 4 (1) of the Toxics Reduction
Act, 2009 that are set out in the plan da Act and Ontario Regulation 455/09 (G	nted	and that the plan complies with that
** Hexane (all isomers excl	uding n-hexane)	
/bot //an	T5RP007/ License Number	12/17/2013
Scott Manser Toxic Substance Reduction Planner	License Number	Date

Highest Ranking Employee
As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
• ** Nonane (all isomers)
Brian Fairley Date Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of <u> 2 17 20 3</u> , I, <u>Scott Manser</u> certify that I am familiar with the processes It Imperial Oil's Sarnia 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 <i>Toxics Reduction</i> and that are set out in the plan dated <u> 2 7 20 3</u> and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
• ** Nonane (all isomers)
TSRP007) 12/17/2013 Cott Manser License Number Date Toxic Substance Reduction Planner

Highest Kanking Employee			
As of 12/17/2013, I, Br			
reduction plan for the toxic substance knowledge the plan is factually accura Regulation 455/09 (General) made und	te and complies with the	familiar with its contents, and to my Toxics Reduction Act, 2009 and Ontari	0
 ** Octane (all isomers) 			
Brian Fairley Refinery Manager, Samia Refinery		7/2013	
Toxic Substance Reduction Planner			
As of <u>IZ/I7/ZO/3</u> , I, <u>Some</u> at Imperial Oil's Sarnia Refinery that with the estimates referred to in subpart Act, 2009 that are set out in the plan day. Act and Ontario Regulation 455/09 (G	use or create the toxic sub- ragraphs 7 iii, iv and v of a ated/2//7/2013	stances referred to below, that I agree subsection 4 (1) of the <i>Toxics Reduction</i> and that the plan complies with the plan complete with the plan complies with the plan complies with the plan complies with the plan complete with	<i>n</i> ha
 ** Octane (all isomers) 			
1 to de			
Ad Man	TSRP0071	18/17/2013 Date	
Scott Manser / Toxic Substance Reduction Planner	License Number	Date	

riignesi Kanking Empioyee		
As of 12/17/2013, I, Brian F	airley, certify that I hav	e read the toxic substance
reduction plan for the toxic substance reference knowledge the plan is factually accurate an Regulation 455/09 (General) made under the	red to below and am fard complies with the <i>To</i>	miliar with its contents, and to my
 ** Pentane (all isomers) 		
Brian Fairley Refinery Manager, Sarnia Refinery	12 /17 Date	/2013
Toxic Substance Reduction Planner		
As of <u>IZIIZ/2013</u> , I, <u>Scott Manner Refinery at Imperial Oil's Sarnia Refinery that use of with the estimates referred to in subparagra <i>Act</i>, 2009 that are set out in the plan dated Act and Ontario Regulation 455/09 (General</u>	r create the toxic substa phs 7 iii, iv and v of sul 12/17/2013	inces referred to below, that I agree bsection 4 (1) of the <i>Toxics Reduction</i> and that the plan complies with that
• ** Pentane (all isomers)		
At Mun TS,	RP0071	13/17/2013 Date
Scott Manser Lie Toxic Substance Reduction Planner	cense Number	Date

Highest Ranking Employee

As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance 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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
• ** Pentene (all isomers)
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of <u>12/17/2013</u> , I, <u>Scott Manser</u> certify that I am familiar with the processes Planner Name at Imperial Oil's Sarnia 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 <i>Toxics Reduction Act</i> , 2009 that are set out in the plan dated <u>12/17/2013</u> and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
** Pentene (all isomers)
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Kanking Employee
As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act, 2009</i> and Ontario Regulation 455/09 (General) made under that Act.
• 25167-67-3 Butene (all isomers)
Brian Fairley Refinery Manager, Sarnia Refinery Date
Toxic Substance Reduction Planner
As of
at Imperial Oil's Sarnia 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 <i>Toxics Reduction Act</i> , 2009 that are set out in the plan dated
• 25167-67-3 Butene (all isomers)
13/17/2013 Scott Manser License Number Date
Scott Manser License Number Date
Toxic Substance Reduction Planner

Highest Ranking Employee	
reduction plan for the toxic substance referre	rley, certify that I have read the toxic substance d to below and am familiar with its contents, and to my complies with the <i>Toxics Reduction Act</i> , 2009 and Ontario t Act.
• 110-82-7 Cyclohexane	
Brian Fairley Refinery Manager, Samia Refinery	12 /17 /2013 Date
Toxic Substance Reduction Planner	
at Imperial Oil's Sarnia Refinery that use or owith the estimates referred to in subparagraph	anser_certify that I am familiar with the processes me create the toxic substances referred to below, that I agree as 7 iii, iv and v of subsection 4 (1) of the Toxics Reduction 12/17/26/3 and that the plan complies with that made under that Act.
Scott Manser Lice Toxic Substance Reduction Planner	

Highest Ranking Employee
As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
• 74-85-1 Ethylene
Brian Fairley Refinery Manager, Sarnia Refinery Date
Toxic Substance Reduction Planner
As of
• 74-85-1 Ethylene
Scott Manser TSRP007/ 12/17/2013 License Number Date Toxic Substance Reduction Planner

As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance 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. • 25264-93-1 Hexene (all isomers) Brian Fairley Refinery Manager, Samia Refinery Toxic Substance Reduction Planner As of 12/17/2013 Toxic Substance Reduction Planner As of 13/17/2013 I, Scott Manser certify that I am familiar with the processes at Imperial Oil's Samia 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 12/17/2013 and that the plan complies with tha Act and Ontario Regulation 455/09 (General) made under that Act. • 25264-93-1 Hexene (all isomers) Scott Manser Date Toxic Substance Reduction Planner Toxic Substance Reduction Planner	Inghest Ranking Employee		
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. • 25264-93-1 Hexene (all isomers) Content of the	As of 12/17/2013, I, Bri	ian Fairley, certify that I hav	e read the toxic substance
Brian Fairley Refinery Manager, Sarnia Refinery Toxic Substance Reduction Planner As of	reduction plan for the toxic substance in knowledge the plan is factually accurated	referred to below and am fai te and complies with the To:	miliar with its contents, and to my
Refinery Manager, Sarnia Refinery Toxic Substance Reduction Planner As of	• 25264-93-1 Hexene (all ison	mers)	
As of	,	12 / 17 Date	/2013
at Imperial Oil's Sarnia 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 12/17/2013 and that the plan complies with the Act and Ontario Regulation 455/09 (General) made under that Act. • 25264-93-1 Hexene (all isomers) TSRP007/ 12/17/2013 Scott Manser Date	Toxic Substance Reduction Planner		
Scott Manser License Number Date	at Imperial Oil's Sarnia Refinery that use with the estimates referred to in subpart Act, 2009 that are set out in the plan date Act and Ontario Regulation 455/09 (Go	ase or create the toxic substate ragraphs 7 iii, iv and v of substated 12/17/26/3 eneral) made under that Act	nces referred to below, that I agree bsection 4 (1) of the <i>Toxics Reduction</i> and that the plan complies with tha
Scott Manser License Number Date Toxic Substance Reduction Planner	• 25264-93-1 Hexene (all isor	ners)	
Toxic Substance Reduction Planner	Scott Manser	TSRP0071 License Number	12/17/2013 Date
	Toxic Substance Reduction Planner		

Highest Ranking Employee		
As of 12/17/2013, I, Brian Date reduction plan for the toxic substance reknowledge the plan is factually accurate Regulation 455/09 (General) made under	ferred to below and am fam and complies with the <i>Toxi</i>	iliar with its contents, and to my
• 110-54-3 N-Hexane		
Brian Fairley Refinery Manager, Sarnia Refinery	12/17/2 Date	2013
Toxic Substance Reduction Planner		
As of 12/17/2617, I, Score Plan at Imperial Oil's Sarnia Refinery that us with the estimates referred to in subpara Act, 2009 that are set out in the plan date Act and Ontario Regulation 455/09 (Gen	e or create the toxic substan graphs 7 iii, iv and v of subs ed <u> </u>	ces referred to below, that I agree section 4 (1) of the <i>Toxics Reduction</i>
• 110-54-3 N-Hexane		
AA Man	T5RP0071	13/17/2013
Scott Manser	License Number	18/17/2013 Date
Toxic Substance Reduction Planner		

Highest Ranking Employee
As of 12 /17 / 2013, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
• 74-98-6 Propane
Brian Fairley Refinery Manager, Sarnia Refinery Date
Toxic Substance Reduction Planner
As of 12/17/2013, I, Scott Manser certify that I am familiar with the processes Planner Name at Imperial Oil's Sarnia 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 12/17/2013 and that the plan complies with tha Act and Ontario Regulation 455/09 (General) made under that Act.
• 74-98-6 Propane
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee

As of 12/17/2013, I, Brian Fairley, certify that I have read the toxic substance
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 <i>Toxics Reduction Act</i> , 2009 and Ontario Regulation 455/09 (General) made under that Act.
• 115-07-1 Propylene
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of <u>I2 / I7 / 2013</u> , I, <u>Scott Manser</u> certify that I am familiar with the processes Planner Name at Imperial Oil's Sarnia 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 <i>Toxics Reduction Act</i> , 2009 that are set out in the plan dated <u>I2 / I7 / 2013</u> and that the plan complies with the Act and Ontario Regulation 455/09 (General) made under that Act.
• 115-07-1 Propylene
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee				
As of 12/17/2013, I, B Date reduction plan for the toxic substance knowledge the plan is factually accur. Regulation 455/09 (General) made un	e referred to below and am fa ate and complies with the To			
• 25551-13-7 Trimethylbenzene (all isomers excluding 1, 2, 4-Trimethylbenzene)				
Brian Fairley Refinery Manager, Sarnía Refinery		2013		
Toxic Substance Reduction Planner				
As of 12/17/2013, I, Scott Manser certify that I am familiar with the processes planner Name at Imperial Oil's Sarnia 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 12/17/2013 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.				
• 25551-13-7 Trimethylbenzene (all isomers excluding 1, 2, 4-Trimethylbenzene)				
It Man	T5RP6071	12/17/2013		
Scott Manser	T5RP607/ License Number	Date		
Toxic Substance Reduction Planner				