

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

December 19, 2012

Sarnia Refinery - Reduction Plan Summary (OR 455/09)

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

Petroleum refineries process crude oil to manufacture finished products that are used and valued by our society such as gasoline and heating oil. Crude oil may contain varying quantities of the substances covered under the TRA. Through the tightly controlled multi-step refinery operation, a variety of substances are used, created and destroyed 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 sensitivities 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)	
Poport Datails	
Report Details Facility:	
•	
Sarnia Refinery Plant	
Facility Address:	
602 Christina Street South, Sarnia (Ontario)	
Update Comments:	
Activities	
Select the Facility Contacts	
Contacts	
Public Contact:*	
Jon Harding	
Highest Ranking Employee:	
Brian Fairley	
<u> </u>	Diam anno anti-an
Person responsible for Toxic Substance Reduction	Plan preparation:
Charles Mortley-Wood	
Organization Validation	
Company and Parent Company Information	on
Company Details	
Company Legal Name:*	Imperial Oil
Company Trade Name:* Imperial Oil	

Business Number:*	121461107	
Mailing Address		
Delivery Mode:	Post Office Box	
PO Box or Rural Route Number:	2480, Sation M	
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:		
Mailing Address		
Delivery Mode:	Post Office Box	

PO Box or Rural Route Number:	3004
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
UTM Zone:	17
UTM Easting:	385773.59
UTM Northing:	4756731.82
Latitude:	42.95420
Longitude:	-82.41580
Additional Information:	
Land Survey Description:	
National Topographical Description:	
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:	Post Office Box
PO Box or Rural Route Number:	3004
Address Line 1:	602 Christina Street South
City:	Sarnia
Province/Territory:	Ontario
Postal Code:	N7T7M5
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:	
PO Box or Rural Route Number:	
Address Line 1:	602 Christina Street
City:	Sarnia

Province/Territory:	Ontario
Postal Code:	N7T 7M5
Person responsible for the Toxic Substance	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 or Rural Route Number:	3004
Address Line 1:	602 Christina St South Street South
City:	Sarnia
Province/Territory:	Ontario
Postal Code:	N7T7M5
Employees	
Employees	
Number of Full-time Employees:*	
392	
Substances	
108-88-3, Toluene	
108-88-3, Toluene	
Substances Section Data	

Sta	tement of Intent			
U	se			
	Is there a statement that the owner or operat toxic substance at the facility?:*	or of the facility int	ends to reduce the use o	of the
	No			
	If 'yes', exact statement of the intent that is in of the toxic substance at the facility:**	ncluded in the facili	ty's TRA Plan to reduce	the use
	If 'no', reason in the facility's TRA Plan for no the facility:**	intent to reduce th	ne use of the toxic subst	ance at
	Toluene is currently used at the facility and ecrude oil.	enters the refinery	n various feedstock incl	uding
	Sarnia refinery is in the business of extracting in other commercial and industrial application		oluene from crude oil to	be used
С	reation			
	Is there a statement that the owner or operat the toxic substance at the facility?:*	or of the facility int	ends to reduce the creat	tion of
	No			
	If 'yes', exact statement of the intent that is in creation of the toxic substance at the facility:		ty's TRA Plan to reduce	the
	If 'no', reason in the facility's TRA Plan for no substance at the facility:**	intent to reduce the	ne creation of the toxic	
	Toluene is created at the facility in the convergencesses.	ersion units through	n both cracking and refo	rming
	Sarnia refinery is in the business of extracting in other commercial and industrial application		oluene from crude oil to	be used
Ob	jectives, Targets and Description			
	bjectives			
	Objectives in plan:*			
	While Imperial Oil does not intend to reduce refinery, various projects at Sarnia refinery a Toluene in the coming years. These project improvements to the fugitive emission monit	re expected to red s include but are n	uce fugitive emissions o	f
U	se Targets			
	What is the targeted reduction in use of the t	oxic substance at t	he facility?*	
	Quant	ity	Unit	

×	No quantity or target			
What is the t	argeted timeframe for this	s reduction?*		
×	No timeline targ	get or		years
Description of	of targets:			
Creation Targ				
What is the t	argeted reduction in crea		ubstance at the	
		Quantity		Unit
×	No quantity or target			
What is the t	argeted timeframe for this	s reduction?*		
×	No timeline targ	get or		years
Description (of targets:			
·				
Reasons for	Use			
Why is the to	oxic substance used at the	e facility?:*		
For sale/dis	tribution			
Summarize	why the toxic substance is	s used at the facil	ity:**	
Sarnia refine	ery is in the business of e	xtracting and productions.	ducing Toluene	e from crude oil to be used
Reasons for (
	oxic substance created at	the facility?:*		
For sale/dis	tribution			
Summarize	why the toxic substance is	s created at the fa	acility:**	
Sarnia refine in other com	ery is in the business of earmercial and industrial ap	xtracting and productions.	ducing Toluene	e from crude oil to be used
Toxic Reduction	on Options for Implem	nentation		

Yes
If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your facilis not implementing an option. Explanation of the reasons why no option will be implemented:**
Sarnia refinery is in the business of producing Toluene from crude oil to be used in other commercial and industrial applications. No reduction options were identified to reduce the use or creation of Toluene at Imperial Oil's Sarnia refinery.
Various projects at Sarnia refinery are expected to reduce fugitive emissions of Toluene 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 why the listed options were chosen for implementation:
General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
TSRP0071
License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
TSRP0071
What version of the plan is this summary based on?:*

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

Substances Section Data

Statement of Intent

Use

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

No

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

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

Xylene (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 Xylene (all isomers) from crude oil to be used in other commercial and industrial applications.

Creation

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

No

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

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

Xylene (all isomers) is created at the facility in the conversion units through both cracking and reforming processes.

Sarnia refinery is in the business of extracting and producing Xylene (all isomers) from crude oil to be used in other commercial and industrial applications.

Objectives, Targets and Description

Objectives

Objectives in plan:*

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

Use Targets

What is the targeted reduction in use of the toxic substance at the facility?* Quantity Unit or No quantity $|\mathbf{x}|$ target What is the targeted timeframe for this reduction?* or |X|No timeline target years Description of targets: Creation Targets What is the targeted reduction in creation of the toxic substance at the facility?* Unit Quantity or No quantity $|\mathbf{x}|$ target What is the targeted timeframe for this reduction?* or |X|No timeline target years Description of targets: Reasons for Use Why is the toxic substance used at the facility?:* For sale/distribution Summarize why the toxic substance is used at the facility:** Sarnia refinery is in the business of extracting and producing Xylene (all isomers) from crude oil to be used in other commercial and industrial applications. **Reasons for Creation** Why is the toxic substance created at the facility?:* For sale/distribution Summarize why the toxic substance is created at the facility:** Sarnia refinery is in the business of extracting and producing Xylene (all isomers) from crude oil to be used in other commercial and industrial applications.

ls	there a statement that no option will be implemented?:*
Υe	es
Su ref is	you answered "No" to this question, please add the option(s) under the appropriate Toxic ubstance Reduction Categories (e.g. Materials or feedstock substitution, Product design or formulation, etc.). If you answered "Yes" please provide an explanation below why your factor implementing an option. Splanation of the reasons why no option will be implemented:**
Sa ot th	arnia refinery is in the business of producing Xylene (all isomers) from crude oil to be used her commercial and industrial applications. No reduction options were identified to reduce e use or creation of Xylene (all isomers) at Imperial Oil's Sarnia refinery.
iso	arious projects at Sarnia refinery are expected to reduce fugitive emissions of Xylene (all omers) in the coming years. These projects include but are not limited to tank upgrades a aprovements to the fugitive emission monitoring program.
Ma	aterials or feedstock substitution
	oduct design or reformulation
	quipment or process modifications
	bill or leak prevention
	n-site reuse, recycling or recovery
	proved inventory management or purchasing techniques
	ood operator practice or training
Ra	ationale for why the listed options were chosen for implementation:
Ge	eneral description of any actions undertaken by the owner and operator of the facility to duce the use and creation of the toxic substance at the facility that are outside of the plan:
	cense Number of the toxic substance reduction planner who made recommendations in the kic substance reduction plan for this substance (format TSRPXXXX):*
TS	SRP0071
	cense Number of the toxic substance reduction planner who has certified the toxic substanduction plan for this substance (format TSRPXXXX):*
TS	SRP0071
WI	hat version of the plan is this summary based on?:*

50-00-0, F

·0, Formaldehyd Substances S			
Statement of			
Use			
	statement that the owner ance at the facility?:*	er or operator of the facil	ity intends to reduce the use of the
No			
	act statement of the intersections act statement of the intersection.		facility's TRA Plan to reduce the use
If 'no', reas the facility:		Plan for no intent to red	uce the use of the toxic substance at
	nyde was not detected on the street of the s		ne facility, nor was it detected in any
Creation			
	statement that the owner statement that the facility?		ity intends to reduce the creation of
No			
If 'yes', exacreation of	act statement of the inte the toxic substance at	ent that is included in the the facility:**	facility's TRA Plan to reduce the
	on in the facility's TRA at the facility:**	Plan for no intent to red	uce the creation of the toxic
	nyde was not detected ble amounts in any stre		ne facility, nor was it detected in any
Objectives, 7	Targets and Descrip	tion	
Objectives			
Objectives	in plan:*		
As the am			e below the laboratory detection limit. e facility are zero, no reduction
Use Targets	3		
		use of the toxic substanc	ce at the facility?*
		Quantity	Unit
\boxtimes	No quantity target	or	

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	No timeline target or	years
Description	of targets:	
reation Tar	rgets targeted reduction in creation of the toxic substance at the fa	oility2*
what is the	Quantity Un	•
\boxtimes	No quantity or target	
What is the	targeted timeframe for this reduction?*	
\boxtimes	No timeline target Or	years
		, · · ·
Description	of targets:	
Reasons for	Use	
Why is the t	toxic substance used at the facility?:*	
This substa	ance is not used at the facility	
Summarize	why the toxic substance is used at the facility:**	
Reasons for		
Why is the t	toxic substance created at the facility?:*	
Why is the t		
Why is the t	toxic substance created at the facility?:*	
Why is the to This substate Summarize	toxic substance created at the facility?:* ance is not created at the facility why the toxic substance is created at the facility:**	
Why is the to This substate Summarize xic Reduction	toxic substance created at the facility?:* ance is not created at the facility	

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

Explanation of the reasons why no option will be implemented:**

C	As Formaldehyde was not detected in any of the refinery feedstock or products onsite, no options were identified that would be expected to reduce the use or creation of Formaldehyde at the facility.
N	Materials or feedstock substitution
P	Product design or reformulation
E	Equipment or process modifications
S	Spill or leak prevention
\overline{C}	On-site reuse, recycling or recovery
<u>lr</u>	mproved inventory management or purchasing techniques
G	Good operator practice or training
R	Rationale for why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to educe the use and creation of the toxic substance at the facility that are outside of the plan:
L	License Number of the toxic substance reduction planner who made recommendations in the oxic substance reduction plan for this substance (format TSRPXXXX):*
٦	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance eduction plan for this substance (format TSRPXXXX):*
٦	TSRP0071
V	What version of the plan is this summary based on?:*
١	New Plan
67-56- ⁻	1, Methanol
67-56-1, Met	
Subst	tances Section Data
	ement of Intent

Use

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

No

		r	
		Quantity	Unit
What is the	e targeted reduction in us	se of the toxic substan	ce at the facility?*
Jse Targets			
Methanol i	s also created as a by-p	roduct in the productic	ed in hydrocarbon processing. on of hydrogen which is necessary for or creation of Methanol were identifie
Objectives	•	alaliti ya anadi a alaatuu.	
Objectives			
•	Targets and Descripti	on	
Methanol i	s used by the facility as a contract of the second	an antifreeze in the pr superior freeze prote	e production of Hydrogen. ocess as it is compatible with ction over other antifreeze.
	on in the facility's TRA F at the facility:**	Plan for no intent to red	duce the creation of the toxic
If 'yes', exacreation of	act statement of the inter the toxic substance at th	nt that is included in th ne facility:**	e facility's TRA Plan to reduce the
No			
Is there a s the toxic su	statement that the owner ubstance at the facility?:*	or operator of the fac	ility intends to reduce the creation of
Creation			
Methanol i		an antifreeze in the pr	ocess as it is compatible with ction over other antifreeze.
N / - 4 :		amia Definancia and	

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

Explanation of the reasons why no option will be implemented:**

No technically and economically feasible reduction options were identified that would be expected to reduce the use or creation of Methanol at Imperial Oil's Sarnia Refinery. Therefore, Imperial Oil does not intend to implement any options to reduce the amount of Methanol currently used 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
74 40	
	3-2, Benzene
71-43-2, Be	
Sub	stances Section Data
Sta	atement of Intent
<u>L</u>	Jse
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No
	If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

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

benzene 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 benzene from crude oil to be used in other commercial and industrial applications.

ea		

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

No

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

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

benzene is created at the facility in the conversion units through both cracking and reforming processes.

Sarnia refinery is in the business of extracting and producing benzene from crude oil to be used in other commercial and industrial applications.

Objectives, Targets and Description

Objectives

Objectives in plan:*

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

Use Targets

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

		Qu	antity		Unit	
\boxtimes	No quantity target	or				
What is the	targeted timeframe	for this re	ductio	า?*		
X	No timeli	ne target	or		years	
Description	of targets:					

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		Quantity	Unit
\boxtimes	No quantity target	or	
Vhat is the	e targeted timeframe fo	or this reduction?*	
X	No timeline	e target or	years
Description	n of targets:		
asons fo	r Use		
Why is the	toxic substance used	at the facility?:*	
For sale/di	stribution		
	•	nce is used at the facility:	
Sarnia refi	nery is in the business	s of extracting and produc	.** cing benzene from crude oil to be
Sarnia refi used in oth	nery is in the business ner commercial and in	s of extracting and produc	
Sarnia refi used in oth asons for	nery is in the business ner commercial and in r Creation	s of extracting and produc dustrial applications.	
Sarnia refiused in othe easons for Why is the	nery is in the business ner commercial and in r Creation toxic substance creat	s of extracting and produc dustrial applications.	
Sarnia refi used in oth asons for	nery is in the business ner commercial and in r Creation toxic substance creat	s of extracting and produc dustrial applications.	
Sarnia refiused in othe asons for the Vhy is the	nery is in the business ner commercial and in r Creation toxic substance create stribution	s of extracting and produc dustrial applications.	cing benzene from crude oil to be
Sarnia refiused in othe asons for the For sale/diagrammarize	nery is in the business ner commercial and in r Creation toxic substance create stribution	s of extracting and product dustrial applications. ed at the facility?:* nce is created at the facility of extracting and products of extracting and products.	cing benzene from crude oil to be
Sarnia refiused in othersed in	nery is in the business ner commercial and incommercial a	s of extracting and productions. ed at the facility?:* nce is created at the facility of extracting and productions.	cing benzene from crude oil to be
Sarnia refiused in other asons for Why is the For sale/discummarized Sarnia refiused in other contents.	nery is in the business her commercial and in- r Creation toxic substance create stribution why the toxic substance hery is in the business her commercial and in-	s of extracting and productions. ed at the facility?:* nce is created at the facility of extracting and productions.	ity:** cing benzene from crude oil to be
Sarnia refiused in others asons for Why is the For sale/disagrand refiused in others continued to Reductes as a section of the	nery is in the business ner commercial and incommercial a	s of extracting and productions. ed at the facility?:* nce is created at the facility of extracting and productions. plementation	ity:** cing benzene from crude oil to be mented:

Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your facility is not implementing an option.

Explanation of the reasons why no option will be implemented:**

Sarnia refinery is in the business of producing benzene from crude oil to be used in other commercial and industrial applications. No reduction options were identified to reduce the use or creation of benzene at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of benzene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
194-5	9-2, 7H-Dibenzo(c,g)carbazole
-59-2, 7	'H-Dibenzo(c,g)carbazole
Subs	stances Section Data
Sta	atement of Intent
	len.

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

Is there a statement that the owner or operator of the facility intends to reduce the use of the

194-59-2,

No

toxic substance at the facility?:*

\times	No quantity target	or		
		Quantity		Unit
What is the	targeted reduction	in use of the toxic su	ubstance at the facil	ity?*
Use Targets	3			
byproduct	in plan:* o(c,g)carbazole ente from thermal crackir g)carbazole were id	ng. No options to re	chased feedstock, a duce the use or crea	and is created as a ation of 7H-
Objectives				
	during thermal crack argets and Desc	0.	is minimized.	
cracking of The 7H-Dil		atalytic cracking unit created onsite is a	and the coker react byproduct of the cor	
substance	on in the facility's TF			
	ct statement of the i the toxic substance		d in the facility's TR	A Plan to reduce the
No				
Is there a s	tatement that the ov bstance at the facili	vner or operator of t ty?:*	ne facility intends to	reduce the creation of
Creation				
7H-Dibenz	o(c,g)carbazole use to meet market and	d at the facility is a d I contractual demand	component of the puds for the refinery's	urchased feedstock that products.
7H-Dibenz feed.	o(c,g)carbazole is c	urrently used at the	facility and enters th	ne refinery in purchased

Description of targets:

Creation Ta	rgets		
What is the	e targeted reduction i	n creation of the toxic s	ubstance at the facility?*
		Quantity	Unit
\boxtimes	No quantity target	or	
What is the	e targeted timeframe	for this reduction?*	
×	No timeli	ne target or	years
Description	n of targets:		
Reasons fo	r Use		
Why is the	toxic substance used	d at the facility?:*	
As a by-pr	oduct		
Summarize	e why the toxic subst	ance is used at the facil	litv·**
7H-Dibenz	zo(c,g)carbazole use	d at the facility is a comp	ponent of the purchased feedstock that or the refinery's products.
Reasons fo	r Creation		
Why is the	toxic substance crea	ated at the facility?:*	
As a by-pr	oduct		
		ance is created at the fa	acility:**
The 7H-Di	benzo(c,g)carbazole during thermal cracki	created onsite is a byping, and its creation is m	roduct of the complex chemical reaction ninimized.
oxic Reduc	tion Options for In	nplementation	
	•	on option(s) to be imp	lemented:
Is there a s	statement that no opt	ion will be implemented	! ?:*

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

Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of 7H-Dibenzo(c,g)carbazole at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of 7H-Dibenzo(c,g)carbazole at the Sarnia Refinery.

7H-Dibenzo(c,g)carbazole 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 7H-Dibenzo(c,g)carbazole 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
	12, Selenium (and its compounds)
	elenium (and its compounds)
Sub	stances Section Data
Sta	atement of Intent
U	lse
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No

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

If 'no', reasor the facility:**	n in the facility's TRA F	Plan for no intent to redu	uce the use of the toxic substa	ance at
	nd its compounds) is c n the crude oil and pur		lity and enters the refinery in	small
Selenium (ar refinery feed	nd its compounds) is n stock, which are requi	naturally occurring in trac red by the refinery to ru	ce quantities in crude oil and n its base business.	other
Creation				
	tement that the owner stance at the facility?:		ty intends to reduce the creat	ion of
No				
If 'yes', exact creation of th	statement of the inter e toxic substance at th	nt that is included in the ne facility:**	facility's TRA Plan to reduce	the
substance at	the facility:**	Plan for no intent to redunction for no intent to redunction for the facility	uce the creation of the toxic	
	. ,	·		
ojectives, Ta Objectives	rgets and Descript	ion		
Objectives in	nlan:*			
Selenium (arby the refine	nd its compounds) is n ry to run its base busir	naturally occurring in trachess. Selenium (and its No reduction objectives	ce quantities in the crude oil r compounds) is also found in have been identified.	equired trace
Jse Targets				
What is the ta	argeted reduction in us	se of the toxic substance	e at the facility?*	
		Quantity	Unit	
\boxtimes	No quantity ^O target	ır		
What is the ta	argeted timeframe for	this reduction?*		
\boxtimes	No timeline t	arget or	years	
Description of	f targets:			
•				

		Ouantitus	l lm!4
		Quantity	Unit
\boxtimes	No quantity target	or	
What is the	targeted timeframe	for this reduction?*	
X	No timelii	ne target or	years
Description	of targets:		
easons for	Use		
Why is the t	oxic substance use	d at the facility?:*	
As an impu		•	
As all illipui	iity		
Summarize	why the toxic substa	ance is used at the facility	/:**
Selenium (a	and its compounds)		ace quantities in crude oil and other
Selenium (a refinery feed	and its compounds) dstock, which are re	is naturally occurring in tr	ace quantities in crude oil and other
Selenium (a refinery feed easons for	and its compounds) dstock, which are re Creation	is naturally occurring in tr	ace quantities in crude oil and other
Selenium (a refinery feed easons for Why is the to	and its compounds) dstock, which are re Creation	is naturally occurring in trequired by the refinery to a	ace quantities in crude oil and other
Selenium (a refinery feed easons for Why is the to	and its compounds) dstock, which are re Creation oxic substance crea nce is not created a	is naturally occurring in trequired by the refinery to a	ace quantities in crude oil and other run its base business.
Selenium (a refinery feed easons for Why is the to This substa Summarize	and its compounds) dstock, which are re Creation oxic substance crea nce is not created a why the toxic substance	is naturally occurring in trequired by the refinery to reted at the facility?:* at the facility ance is created at the facility	ace quantities in crude oil and other run its base business.
Selenium (a refinery feed easons for Why is the to This substatic Reduction	and its compounds) dstock, which are re Creation oxic substance crea nce is not created a why the toxic substance	is naturally occurring in trequired by the refinery to detect at the facility?:* at the facility ance is created at the facility	ace quantities in crude oil and other run its base business.
Selenium (a refinery feedeasons for Why is the to This substate Summarize	and its compounds) dstock, which are re Creation oxic substance crea nce is not created a why the toxic substance fon Options for In	is naturally occurring in trequired by the refinery to reted at the facility?:* at the facility ance is created at the facility	ace quantities in crude oil and other un its base business. ility:**

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

Explanation of the reasons why no option will be implemented:**

No technically and economically feasible options were identified that would be expected to reduce the use of Selenium (and its compounds) at the facility. Selenium (and its compounds) is not created at the facility.

Selenium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business.

	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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
<u>NA - (</u>	08, Lead (and its compounds)
NA - 08, Le	ad (and its compounds)
Subs	stances Section Data
Sta	tement of Intent
U	se
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No
	If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

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

Lead (and its compounds) is currently used at the facility and enters the refinery in small amounts with the crude oil and purchased feed stocks.

Lead (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.

le thoro a e	tatement that the owner or one	orator of the facilit	ry intends to reduce the creation of
	bstance at the facility?:*	erator or the raciii	y interios to reduce the creation of
No			
	ct statement of the intent that i the toxic substance at the facil		facility's TRA Plan to reduce the
	on in the facility's TRA Plan for at the facility:**	r no intent to redu	ice the creation of the toxic
Lead (and	its compounds) is not created	at the facility.	
bjectives. T	argets and Description		
Objectives	<u> </u>		
Objectives i	in plan:*		
the refinery quantities in	to run its base business. Lean the purchased feed. No red	ad (and its compo	uantities in the crude oil required by unds) is also found in trace have been identified.
the refinery quantities in Use Targets	to run its base business. Lean the purchased feed. No red	ad (and its compo uction objectives	unds) is also found in trace have been identified.
the refinery quantities in Use Targets	to run its base business. Lean the purchased feed. No reduction in use of the	ad (and its compo uction objectives	unds) is also found in trace have been identified.
the refinery quantities in Use Targets	to run its base business. Lean the purchased feed. No reduction in use of the	ad (and its compouction objectives	unds) is also found in trace have been identified.
the refinery quantities in the Use Targets What is the	to run its base business. Lean the purchased feed. No reduction in use of the Quentity	ad (and its compouction objectives ne toxic substance antity	unds) is also found in trace have been identified.
the refinery quantities in the Use Targets What is the	to run its base business. Lean the purchased feed. No reduction in use of the Queen No quantity target	ad (and its compouction objectives ne toxic substance antity	unds) is also found in trace have been identified.
the refinery quantities in the Use Targets What is the	to run its base business. Lean the purchased feed. No reduction in use of the largeted largeted timeframe for this reduction. No timeline target	ad (and its compound to compound the control of the	unds) is also found in trace have been identified. e at the facility?* Unit

		Quantity		Unit
\boxtimes	No quantity or target			
What is the	e targeted timeframe for thi	s reduction?) *	
\boxtimes	No timeline tar	get or		years
Description	n of targets:			
Reasons fo	r Use			
Why is the	toxic substance used at th	e facility?:*		
As an imp	urity			
Lead (and	e why the toxic substance i	y occurring i	in trace quantities	
j	edstock, which are required	a by the reti	nery to run its bas	e dusiness.
Reasons fo Why is the	toxic substance created at	the facility?).*	
This subst	ance is not created at the f	acility		
Summarize	e why the toxic substance i	s created at	the facility:**	
oxic Reduc	tion Options for Impler	nentation		
Description	of the toxic reduction op	tion(s) to b	e implemented:	
Is there a s	statement that no option wi	ll be implem	ented?:*	
Yes				
Substance reformulati is not imple	vered "No" to this question. Reduction Categories (e.gon, etc.). If you answered the reasons why no or	j. Materials 'Yes" please	or feedstock subs provide an expla	

Explanation of the reasons why no option will be implemented:**

No technically and economically feasible options were identified that would be expected to reduce the use of Lead (and its compounds) at the facility. Lead (and its compounds) is not created at the facility.

Lead (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business.

	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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
129-0	00-0, Pyrene
129-00-0, I	Pyrene
Sub	stances Section Data
	atement of Intent
	Jse
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No
	If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

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

reation			
ls there a s the toxic su	statement that the ow obstance at the facilit	vner or operator of the facil ty?:*	ity intends to reduce the creation
No			
If 'yes', exa creation of	act statement of the in the toxic substance	ntent that is included in the at the facility:**	e facility's TRA Plan to reduce the
If 'no', reas substance	on in the facility's TR at the facility:**	RA Plan for no intent to red	uce the creation of the toxic
	created at the facility tic cracking unit and		ere thermal cracking occurs like t
			chemical reactions occurring during
tnermai cra	acking, and its creation	on is minimized.	
	acking, and its creation argets and Descr		
ectives, T	acking, and its creation		
	argets and Desci		
ectives, T bjectives Objectives Pyrene en	argets and Desci	ription rchased feedstock, and is o	created as a byproduct from therm
ectives, T bjectives Objectives Pyrene en cracking.	in plan:* ters the facility in pur	ription	created as a byproduct from therm ene were identified.
ectives, T bjectives Objectives Pyrene en cracking.	argets and Descr in plan:* ters the facility in pur No options to reduce	ription rchased feedstock, and is one the use or creation of Pyr	ene were identified.
ectives, T bjectives Objectives Pyrene en cracking.	argets and Descr in plan:* ters the facility in pur No options to reduce	ription rchased feedstock, and is one the use or creation of Pyrein use of the toxic substance.	ene were identified. ce at the facility?*
ectives, T bjectives Objectives Pyrene en cracking.	argets and Descr in plan:* ters the facility in pur No options to reduce	ription rchased feedstock, and is one the use or creation of Pyr	ene were identified.
ectives, T bjectives Objectives Pyrene en cracking.	argets and Descr in plan:* ters the facility in pur No options to reduce	ription rchased feedstock, and is one the use or creation of Pyrein use of the toxic substance.	ene were identified. ce at the facility?*
ectives, Tobjectives Objectives Pyrene encracking. Se Targets What is the	in plan:* ters the facility in pur No options to reduce targeted reduction i	rchased feedstock, and is on the use of the toxic substantity or	ene were identified. ce at the facility?*
ectives, Tobjectives Objectives Pyrene encracking. Se Targets What is the	in plan:* ters the facility in pur No options to reduce targeted reduction i	rchased feedstock, and is on the use of the toxic substant Quantity or for this reduction?*	ene were identified. ce at the facility?*

Quantity

Unit

X	No quantity or target	
What is the	targeted timeframe for this reduction?*	
\boxtimes	No timeline target or years	
Description	of targets:	
Reasons for	Use	_
Why is the	toxic substance used at the facility?:*	
As a by-pr	oduct	
Summarize	why the toxic substance is used at the facility:**	
	ed at the facility is a component of the purchased feedstock that is required to meet I contractual demands for the refinery's products.	
Reasons for	Creation	
Why is the	toxic substance created at the facility?:*	
As a by-pr	oduct	
Summarize	why the toxic substance is created at the facility:**	
	e created onsite is a byproduct of the complex chemical reactions occurring during acking, and its creation is minimized.	
Toxic Reduc	ion Options for Implementation	
	of the toxic reduction option(s) to be implemented:	
Is there a s	tatement that no option will be implemented?:*	
Yes		
If you ansv Substance reformulati	ered "No" to this question, please add the option(s) under the appropriate Toxic Reduction Categories (e.g. Materials or feedstock substitution, Product design or on, etc.). If you answered "Yes" please provide an explanation below why your facilimenting an option	t y

is not implementing an option.

Explanation of the reasons why no option will be implemented:**

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

Pyrene 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 Pyrene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
83-32	2-9, Acenaphthene
83-32-9, Ad	cenaphthene
Sub	stances Section Data
Sta	atement of Intent
U	Jse
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No
	If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

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

Acenaphthene is currently used at the facility and enters the refinery in purchased feed.

Acenaphthene 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.

the toxic st	tatement that the ow obstance at the facilit		cility intends to reduce the creation of
No			
If 'yes', exa creation of	ct statement of the i the toxic substance	ntent that is included in that the facility:**	ne facility's TRA Plan to reduce the
	on in the facility's TF at the facility:**	RA Plan for no intent to re	educe the creation of the toxic
		e facility in the conversion unit and the coker reactor	n units where thermal cracking occurs r.
		site is a byproduct of the s creation is minimized.	complex chemical reactions occurring
bjectives, T	argets and Desc	ription	
Objectives	•		
Objectives	in plan:*		
Acenaphth thermal cra	ene enters the facilitacking. No options to	ty in purchased feedstock o reduce the use or creat	k, and is created as a byproduct from tion of Acenaphthene were identified.
Use Targets			
		n use of the toxic substar	nce at the facility?*
		Quantity	Unit
\boxtimes	No quantity target	or	
	targeted timeframe	for this reduction?*	

Creation Targets

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

Quantity Unit

\boxtimes	No quantity or target				
What is the	targeted timeframe for this	reduction	?*		
		or or			
\boxtimes	No timeline tarç	jet ^{Oi}			years
Description	of targets:				
Reasons for	Use				
Why is the t	oxic substance used at the	e facility?:*			
As a by-pro	oduct				
Summarize	why the toxic substance is	s used at th	ne facility:**		
Acenaphthomeet marke	ene used at the facility is a et and contractual demand	componer s for the re	nt of the purcha finery's produc	ased feeds cts.	stock that is required to
Reasons for	Creation				
Why is the t	oxic substance created at	the facility	?:*		
As a by-pro	oduct				
Summarize	why the toxic substance is	s created a	t the facility:**		
The Acena during then	phthene created onsite is a mal cracking, and its creat	a byproduc on is minir	t of the comple	ex chemica	al reactions occurring
Toxic Reduct	ion Options for Implen	nentation			
	of the toxic reduction opt		e implemente	ed:	
Is there a st	atement that no option wil	be implen	nented?:*		
Yes					
Substance reformulation is not imple	ered "No" to this question, Reduction Categories (e.gon, etc.). If you answered " menting an option.	. Materials Yes" pleas	or feedstock s e provide an e	ubstitution xplanation	appropriate Toxic , Product design or below why your facility

Explanation of the reasons why no option will be implemented:

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

Acenaphthene 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 Acenaphthene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
208-9	96-8, Acenaphthylene
208-96-8, /	Acenaphthylene
Sub	stances Section Data
Sta	atement of Intent
	Jse
_	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No
	If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

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

0

Acenaphthylene is currently used at the facility and enters the refinery in purchased feed.

Acenaphthylene 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.

Is there a statement that the owner or operator of the facility intends to reduce the creation the toxic substance at the facility?:* No If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the creation of the toxic substance at the facility:** If 'no', reason in the facility's TRA Plan for no intent to reduce the creation of the toxic substance at the facility:** Acenaphthylene is created at the facility in the conversion units where thermal cracking occlike the fluid catalytic cracking unit and the coker reactor. The Acenaphthylene created onsite is a byproduct of the complex chemical reactions occuduring thermal cracking, and its creation is minimized. jectives, Targets and Description bejectives Objectives in plan:* Acenaphthylene enters the facility in purchased feedstock, and is created as a byproduct for the thermal cracking. No options to reduce the use or creation of Acenaphthylene were identified by the targeted reduction in use of the toxic substance at the facility?* Quantity Unit What is the targeted timeframe for this reduction?*	reation				
If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the creation of the toxic substance at the facility:** If 'no', reason in the facility's TRA Plan for no intent to reduce the creation of the toxic substance at the facility:** Acenaphthylene is created at the facility in the conversion units where thermal cracking occlike the fluid catalytic cracking unit and the coker reactor. The Acenaphthylene created onsite is a byproduct of the complex chemical reactions occur during thermal cracking, and its creation is minimized. Dijectives, Targets and Description Dijectives Objectives in plan:* Acenaphthylene enters the facility in purchased feedstock, and is created as a byproduct for thermal cracking. No options to reduce the use or creation of Acenaphthylene were identifies Targets What is the targeted reduction in use of the toxic substance at the facility?* Quantity Unit Or Quantity Unit			operator of the	facility intends	to reduce the creation o
If 'no', reason in the facility's TRA Plan for no intent to reduce the creation of the toxic substance at the facility:** Acenaphthylene is created at the facility in the conversion units where thermal cracking occlike the fluid catalytic cracking unit and the coker reactor. The Acenaphthylene created onsite is a byproduct of the complex chemical reactions occuduring thermal cracking, and its creation is minimized. jectives, Targets and Description objectives Objectives objectives Objectives in plan:* Acenaphthylene enters the facility in purchased feedstock, and is created as a byproduct frithermal cracking. No options to reduce the use or creation of Acenaphthylene were identified see Targets What is the targeted reduction in use of the toxic substance at the facility?* Quantity Unit No quantity The Acenaphthylene enters the facility in purchased feedstock, and is created as a byproduct frithermal cracking. No options to reduce the use or creation of Acenaphthylene were identified to the facility? Quantity Unit	No				
Acenaphthylene is created at the facility in the conversion units where thermal cracking occlike the fluid catalytic cracking unit and the coker reactor. The Acenaphthylene created onsite is a byproduct of the complex chemical reactions occuduring thermal cracking, and its creation is minimized. jectives, Targets and Description bejectives Objectives in plan:* Acenaphthylene enters the facility in purchased feedstock, and is created as a byproduct freshermal cracking. No options to reduce the use or creation of Acenaphthylene were identified to see Targets What is the targeted reduction in use of the toxic substance at the facility?* Quantity Unit What is the targeted timeframe for this reduction?*				the facility's T	RA Plan to reduce the
like the fluid catalytic cracking unit and the coker reactor. The Acenaphthylene created onsite is a byproduct of the complex chemical reactions occulduring thermal cracking, and its creation is minimized. jectives, Targets and Description bjectives Objectives in plan:* Acenaphthylene enters the facility in purchased feedstock, and is created as a byproduct frequency from thermal cracking. No options to reduce the use or creation of Acenaphthylene were identified see Targets What is the targeted reduction in use of the toxic substance at the facility?* Quantity Unit What is the targeted timeframe for this reduction?*			n for no intent to	reduce the cre	ation of the toxic
during thermal cracking, and its creation is minimized. ectives, Targets and Description bjectives Objectives in plan:* Acenaphthylene enters the facility in purchased feedstock, and is created as a byproduct frequency thermal cracking. No options to reduce the use or creation of Acenaphthylene were identified see Targets What is the targeted reduction in use of the toxic substance at the facility?* Quantity Unit No quantity target What is the targeted timeframe for this reduction?*					re thermal cracking occu
Objectives in plan:* Acenaphthylene enters the facility in purchased feedstock, and is created as a byproduct fr thermal cracking. No options to reduce the use or creation of Acenaphthylene were identified se Targets What is the targeted reduction in use of the toxic substance at the facility?* Quantity Unit No quantity target What is the targeted timeframe for this reduction?*					nemical reactions occurr
Objectives in plan:* Acenaphthylene enters the facility in purchased feedstock, and is created as a byproduct freshermal cracking. No options to reduce the use or creation of Acenaphthylene were identified by the set of the toxic substance at the facility?* Quantity Unit No quantity target What is the targeted timeframe for this reduction?*	ectives, Targets	and Description	1		
Acenaphthylene enters the facility in purchased feedstock, and is created as a byproduct frequency thermal cracking. No options to reduce the use or creation of Acenaphthylene were identified as a byproduct frequency thermal cracking. No options to reduce the use or creation of Acenaphthylene were identified as a byproduct frequency thermal cracking. No options to reduce the use or creation of Acenaphthylene were identified as a byproduct frequency frequency. **Quantity** Quantity** Quantity* Unit	ojectives				
thermal cracking. No options to reduce the use or creation of Acenaphthylene were identified to see Targets What is the targeted reduction in use of the toxic substance at the facility?* Quantity Unit No quantity target What is the targeted timeframe for this reduction?*	Objectives in plan:*				
What is the targeted reduction in use of the toxic substance at the facility?* Quantity Unit No quantity target What is the targeted timeframe for this reduction?*					
Quantity Unit No quantity or target What is the targeted timeframe for this reduction?*	se Targets				
No quantity or target What is the targeted timeframe for this reduction?*	What is the targeted	I reduction in use	of the toxic subs	tance at the fac	cility?*
What is the targeted timeframe for this reduction?*			Quantity		Unit
		quantity			
or .	Nhat is the targeted	I timeframe for this	s reduction?*		
No timeline target years	\boxtimes	No timeline targ	get or		years
Description of targets:	Description of targe	ts:			
reation Targets	eation Targets				

Quantity

Unit

X	No quantity or target			
What is the	targeted timeframe for this	s reduction?*		
×	No timeline targ	get or		years
Description	of targets:			
Reasons for	· Use			
Why is the	toxic substance used at the	e facility?:*		
As a by-pro	oduct			
Summarize	why the toxic substance is	s used at the	facility:**	
Acenaphth to meet ma	ylene used at the facility is arket and contractual dema	a componen ands for the re	t of the purchase efinery's products	d feedstock that is required
Reasons for	Creation			
Why is the	toxic substance created at	the facility?:	•	
As a by-pro	oduct			
Summarize	e why the toxic substance is	s created at t	he facility:**	
	phthylene created onsite is mal cracking, and its creat			chemical reactions occurring
Toxic Reduct	tion Options for Implem	nentation		
Description	of the toxic reduction opt	ion(s) to be	implemented:	
Is there a s	tatement that no option wil	l be impleme	nted?:*	
Yes				
Substance reformulation	vered "No" to this question, Reduction Categories (e.g on, etc.). If you answered " ementing an option.	. Materials or Yes" please p	he option(s) under feedstock substi provide an explar	er the appropriate Toxic tution, Product design or nation below why your facility

Explanation of the reasons why no option will be implemented:**

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

Acenaphthylene 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 Acenaphthylene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
120-1	2-7, Anthracene
120-12-7, /	Anthracene
Sub	stances Section Data
	atement of Intent
	Jse
_	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No
	If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

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

Anthracene is currently used at the facility and enters the refinery in purchased feed.

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		
Is there a statement the toxic substan	nt that the owner or operator of the facility intends to reduce the creation of at the facility?:*	
No		
	ment of the intent that is included in the facility's TRA Plan to reduce the c substance at the facility:**	
If 'no', reason in t substance at the	e facility's TRA Plan for no intent to reduce the creation of the toxic	

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 Anthracene created onsite is a byproduct of the complex chemical reactions occurring

jectives Objectives	in plan:*		
•	•	chased feedstock, and	d is created as a byproduct from
hermal cr	acking. No options to rec	luce the use or creation	n of Anthracene were identified.
e Targets	3		
Vhat is the	e targeted reduction in us	e of the toxic substanc	e at the facility?*
		Quantity	Unit
×	No quantity or target		
Vhat is the	e targeted timeframe for t	his reduction?*	
\boxtimes	No timeline ta	arget or	years
escription	n of targets:		

Quantity

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Unit

\boxtimes	No quantity or target				
What is the	targeted timeframe for this	reduction	?*		
		٥.			
X	No timeline targ	jet ^{or}			years
Description	of targets:				
Reasons for	Use				
Why is the t	toxic substance used at the	e facility?:*			
As a by-pro	oduct				
Summarize	why the toxic substance is	s used at th	e facility:**		
Anthracene	e used at the facility is a co et and contractual demand	mponent o	f the purchase	d feedsto cts.	ck that is required to
Reasons for	Creation				
Why is the t	toxic substance created at	the facility?	?:*		
As a by-pro	oduct				
Summarize	why the toxic substance is	s created at	the facility:**		
The Anthra during then	cene created onsite is a by mal cracking, and its creat	product of on is mining	the complex c	hemical r	reactions occurring
Toxic Reduct	ion Options for Implem	nentation			
	of the toxic reduction opt		e implemente	ed:	
Is there a st	atement that no option wil	be implem	ented?:*		
Yes					
Substance reformulation is not imple	ered "No" to this question, Reduction Categories (e.gon, etc.). If you answered " menting an option.	. Materials Yes" please	or feedstock s e provide an ex	ubstitution kplanation	e appropriate Toxic n, Product design or n below why your facility

Explanation of the reasons why no option will be implemented:

No reduction options were identified that are expected to reduce the use or creation of 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 Anthracene at the Sarnia Refinery.

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 Anthracene created at the facility is minimized.

Ma	aterials or feedstock substitution
Pr	roduct design or reformulation
Ed	quipment or process modifications
Sp	pill or leak prevention
Or	n-site reuse, recycling or recovery
lm	nproved inventory management or purchasing techniques
Go	ood operator practice or training
Ra	ationale for why the listed options were chosen for implementation:
	eneral description of any actions undertaken by the owner and operator of the facility to duce the use and creation of the toxic substance at the facility that are outside of the plan:
to	cense Number of the toxic substance reduction planner who made recommendations in the xic substance reduction plan for this substance (format TSRPXXXX):*
13	SRP0071
	cense Number of the toxic substance reduction planner who has certified the toxic substance duction plan for this substance (format TSRPXXXX):*
TS	SRP0071
W	hat version of the plan is this summary based on?:*
N	ew Plan
1332-21	1-4, Asbestos (friable form only)
1332-21-4, As	sbestos (friable form only)
Substa	ances Section Data
State	ment of Intent
Use	
ls	there a statement that the owner or operator of the facility intends to reduce the use of the xic substance at the facility?:*
N	o
If '	'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use the toxic substance at the facility:**

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

Asbestos (friable form only) is currently used at the facility only from historical installation. No new Asbestos (friable form only) enters the refinery.

Sarnia refinery will continue to eliminate Asbestos (friable form only) from the site and as a result it will continue to appear as a waste product from the refinery until such time as it is no longer present in the refinery.

Creation			
	statement that the owner ubstance at the facility?:		ity intends to reduce the creation of
No			
If 'yes', exa	act statement of the inter the toxic substance at the	nt that is included in the ne facility:**	facility's TRA Plan to reduce the
	son in the facility's TRA F at the facility:**	Plan for no intent to red	uce the creation of the toxic
Asbestos	(friable form only) is not	created at the facility.	
result it wi	inery will continue to elim Il continue to appear as a sent in the refinery.	ninate Asbestos (friable a waste product from th	form only) from the site and as a ne refinery until such time as it is no
bjectives, ⁷	Fargets and Descript	ion	
Objectives			
Objectives	in plan:*		
	no new uses of Asbesto (friable form only).	s (friable form only) and	d the refinery does not create
Use Targets	5		
What is the	e targeted reduction in us	se of the toxic substanc	ee at the facility?*
		Quantity	Unit
\boxtimes	No quantity ^O target	r	
What is the	e targeted timeframe for	this reduction?*	
\boxtimes	No timeline t	arget ^{or}	years
Description	n of targets:		
Creation Ta	rgets		

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		Quantity	Unit
\boxtimes	No quantity target	or	
What is the	targeted timeframe f	for this reduction?*	
X	No timelir	ne target or	years
Description	of targets:		
Reasons for	Use		
Why is the	toxic substance used	I at the facility?:*	
This substa	ance is not used at th	e facility	
Summarize	why the toxic substa	ance is used at the facility	y:**
Reasons for	Creation		
Why is the	toxic substance crea	ted at the facility?:*	
This substa	ance is not created at	t the facility	
Summarize	why the toxic substa	ance is created at the fac	ility:**
	tion Options for Im	nplementation on option(s) to be imple	amontod:
<u> </u>		on will be implemented?:	
	tatement that no opti	on will be implemented?.	•
Yes			
Substance reformulation is not imple	Reduction Categorie on, etc.). If you answermenting an option.	stion, please add the opt s (e.g. Materials or feeds ered "Yes" please provide no option will be impleme	tion(s) under the appropriate Toxic stock substitution, Product design or e an explanation below why your facilit ented:**
only) at Im	perial Oil's Sarnia ref	inery. Current presence	r creation of Asbestos (friable form of Asbestos (friable form only) at estance is not created by the facility.
Materials o	r 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
56-55	5-3, Benzo(a)anthracene
56-55-3, B	enzo(a)anthracene
Sub	stances Section Data
	atement of Intent
	Jse
_	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No
	If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**
	If 'no', reason in the facility's TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

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Benzo(a	a)anthracene	is currently	y used at the facility	and enters the	refinery in	purchased feed
---------	--------------	--------------	------------------------	----------------	-------------	----------------

Benzo(a)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			
	tement that the owr stance at the facility		cility intends to reduce the creation of
No			
If 'yes', exactor creation of the	t statement of the in ne toxic substance a	tent that is included in the tacility:**	he facility's TRA Plan to reduce the
If 'no', reason	n in the facility's TR/ the facility:**	A Plan for no intent to re	educe the creation of the toxic
		at the facility in the conv cking unit and the coker	version units where thermal cracking reactor.
The Benzo(a occurring du	a)anthracene create ring thermal crackin	d onsite is a byproduct	of the complex chemical reactions nimized.
Objectives, Ta	rgets and Descri	ption	
Objectives	•		
Objectives in	plan:*		
Benzo(a)ant from therma identified.	hracene enters the large	facility in purchased fee ns to reduce the use or	edstock, and is created as a byproduct creation of Benzo(a)anthracene were
Use Targets			
	argeted reduction in	use of the toxic substa	nce at the facility?*
	J	Quantity	Unit
×	No quantity target	or	
What is the t	argeted timeframe f	or this reduction?*	
\boxtimes	No timelin	e target or	years

Creation Targets

Description of targets:

What is the	targeted reduction in crea	ation of the toxic	substance at th	ne facility?*
		Quantity		Unit
X	No quantity or target			
What is the	targeted timeframe for th	is reduction?*		
\boxtimes	No timeline tar	get or		years
Description	of targets:			
Reasons for	Use			
Why is the t	oxic substance used at th	ne facility?:*		
As a by-pro	duct			
Benzo(a)ar	why the toxic substance of thracene used at the factories meet market and contractories. Creation	ility is a compone	ent of the purcha	ased feedstock that is products.
	oxic substance created a	t the facility?:*		
As a by-pro	duct			
Summarize	why the toxic substance	is created at the	facility:**	
The Benzo	(a)anthracene created on uring thermal cracking, a	site is a byprodu nd its creation is	ct of the comple minimized.	ex chemical reactions
oxic Reduct	ion Options for Implei	mentation		
Description of	of the toxic reduction op	otion(s) to be im	plemented:	
Is there a st	atement that no option w	ill be implemente	:d?:*	
Yes				
Substance I reformulation is not imple	ered "No" to this question Reduction Categories (e., n, etc.). If you answered menting an option. of the reasons why no o	g. Materials or fe "Yes" please pro	edstock substitu vide an explana	r the appropriate Toxic ution, Product design or ation below why your facility

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No reduction options were identified that are expected to reduce the use or creation of Benzo(a)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 Benzo(a)anthracene at the Sarnia Refinery.

Benzo(a)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 Benzo(a)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 why the listed options were chosen for implementation:					
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:					
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*					
	TSRP0071					
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*					
	TSRP0071					
	What version of the plan is this summary based on?:*					
	New Plan					
218-0	1-9, Benzo(a)phenanthrene					
-01-9, E	Benzo(a)phenanthrene					
Subs	stances Section Data					
	atement of Intent					
	Ise					
U						
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*					
	No					

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use

218-01-9,

	substance at the facility:**		
If 'no', reas the facility:		for no inte	ent to reduce the use of the toxic substance
Benzo(a)p feed.	henanthrene is currently use	ed at the fa	acility and enters the refinery in purchased
			omponent of the purchased feedstock that is is for the refinery's products.
reation			
	statement that the owner or obstance at the facility?:*	operator of	f the facility intends to reduce the creation of
No			
If 'yes', exacreation of	act statement of the intent the the toxic substance at the fa	at is includ acility:**	led in the facility's TRA Plan to reduce the
Benzo(a)p occurs like The Benzo occurring o	the fluid catalytic cracking t	unit and the	yproduct of the complex chemical reactions
bjectives			
Objectives	in plan:*		
byproduct	henanthrene enters the faci from thermal cracking. No o henanthrene were identified	options to r	hased feedstock, and is created as a reduce the use or creation of
se Targets	3		
What is the	targeted reduction in use o	f the toxic	substance at the facility?*
		Quantity	Unit
X	No quantity or target		
What is the	targeted timeframe for this	reduction?	?*
X	No timeline targe	et or	years

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Description	n of targets:		
Creation Ta		tion of the toxic ou	shotongo at the facility?*
vinal is the	e targeted reduction in crea		•
		Quantity	Unit
\boxtimes	No quantity or target		
What is the	e targeted timeframe for thi	s reduction?*	
\boxtimes	No timeline tar	get or	years
Description	n of targets:		
Reasons fo	r I loo		
why is the	toxic substance used at th	e facility?:	
As a by-pr	oduct		
Summarize	e why the toxic substance i	s used at the facilit	ty:**
Benzo(a)p	henanthrene used at the fa	acility is a componerual demands for the	ent of the purchased feedstock that is ne refinery's products.
Reasons fo	r Creation		
Why is the	toxic substance created at	the facility?:*	
As a by-pr	oduct		
Summarize	e why the toxic substance i	s created at the fac	cility:**
The Benzo	o(a)phenanthrene created of during thermal cracking, ar	onsite is a byprodu ad its creation is mi	uct of the complex chemical reactions inimized.
oxic Reduc	tion Options for Impler	nentation	
Description	of the toxic reduction op	tion(s) to be imple	emented:
Is there a s	statement that no option wi	II be implemented?	?:*
Yes			

No reduction options were identified that are expected to reduce the use or creation of Benzo(a)phenanthrene 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(a)phenanthrene at the Sarnia Refinery.

Benzo(a)phenanthrene 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(a)phenanthrene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
50-32	2-8, Benzo(a)pyrene
	enzo(a)pyrene
	stances Section Data
	atement of Intent
U	Jse
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No

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

	e targeted timeframe for	this reduction?*	
X	No quantity C target	or	
		Quantity	Unit
	e targeted reduction in u	se of the toxic substa	nce at the facility?*
	acking. No options to re		tion of Benzo(a)pyrene were identifie
Objectives	•	in nurchased feedsto	ock, and is created as a byproduct fro
ojectives			
ectives, 7	Targets and Descript	ion	
during the	rmal cracking, and its cr	eation is minimized.	e complex chemical reactions occur
	id catalytic cracking unit		or. ne complex chemical reactions occurr
Benzo(a)p	yrene is created at the f	acility in the conversi	on units where thermal cracking occu
	on in the facility's TRA In at the facility:**	Plan for no intent to re	educe the creation of the toxic
		-	
If 'yes', exa	act statement of the inter the toxic substance at t	nt that is included in t he facility:**	he facility's TRA Plan to reduce the
No			
	statement that the owner ubstance at the facility?:		cility intends to reduce the creation o
eation			
	yrene used at the facility arket and contractual de		he purchased feedstock that is requir ry's products.
		·	ers the refinery in purchased feed.
Benzo(a)p			

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Why is the toxic substance used at the facility?:* As a by-product Summarize why the toxic substance is used at the facility:** Benzo(a)pyrene used at the facility is a component of the purchased feedstock that is received market and contractual demands for the refinery's products. Reasons for Creation Why is the toxic substance created at the facility?:* As a by-product Summarize why the toxic substance is created at the facility:** The Benzo(a)pyrene created onsite is a byproduct of the complex chemical reactions occurring thermal cracking, and its creation is minimized. xic Reduction Options for Implementation	No quantity target No timeline target No tim				
What is the targeted timeframe for this reduction?* No timeline target Or years	No timeline target years years years the toxic substance used at the facility:** the toxic substance or the toxic substance is created at the facility:** The Benzo(a) pyrene created onsite is a byproduct of the complex chemical reactions occurring thermal cracking, and its creation is minimized. Reduction Options for Implementation coription of the toxic reduction option(s) to be implemented: there a statement that no option will be implemented?:*			Quantity	Unit
Description of targets: Why is the toxic substance used at the facility?:* As a by-product Summarize why the toxic substance is used at the facility:** Benzo(a)pyrene used at the facility is a component of the purchased feedstock that is rector meet market and contractual demands for the refinery's products. Description of Creation Why is the toxic substance created at the facility?:* As a by-product Summarize why the toxic substance is created at the facility:** The Benzo(a)pyrene created onsite is a byproduct of the complex chemical reactions occurring thermal cracking, and its creation is minimized. Description of the toxic reduction option(s) to be implemented:	No timeline target No timeline target or years escription of targets: sons for Use thy is the toxic substance used at the facility?:* so a by-product commarize why the toxic substance is used at the facility:** enzo(a)pyrene used at the facility is a component of the purchased feedstock that is required meet market and contractual demands for the refinery's products. Issons for Creation thy is the toxic substance created at the facility?:* so a by-product commarize why the toxic substance is created at the facility:** the Benzo(a)pyrene created onsite is a byproduct of the complex chemical reactions occurring thermal cracking, and its creation is minimized. Reduction Options for Implementation corription of the toxic reduction option(s) to be implemented: there a statement that no option will be implemented?:*	X		or	
Description of targets: Reasons for Use Why is the toxic substance used at the facility?:* As a by-product Summarize why the toxic substance is used at the facility:** Benzo(a)pyrene used at the facility is a component of the purchased feedstock that is rector meet market and contractual demands for the refinery's products. Reasons for Creation Why is the toxic substance created at the facility?:* As a by-product Summarize why the toxic substance is created at the facility:** The Benzo(a)pyrene created onsite is a byproduct of the complex chemical reactions occurring thermal cracking, and its creation is minimized. xic Reduction Options for Implementation Description of the toxic reduction option(s) to be implemented:	escription of targets: asons for Use hy is the toxic substance used at the facility?:* s a by-product ammarize why the toxic substance is used at the facility:** enzo(a)pyrene used at the facility is a component of the purchased feedstock that is require of meet market and contractual demands for the refinery's products. asons for Creation hy is the toxic substance created at the facility?:* s a by-product ammarize why the toxic substance is created at the facility:** the Benzo(a)pyrene created onsite is a byproduct of the complex chemical reactions occurring thermal cracking, and its creation is minimized. Reduction Options for Implementation accription of the toxic reduction option(s) to be implemented: there a statement that no option will be implemented?:*	What is the	e targeted timeframe	e for this reduction?*	
Reasons for Use Why is the toxic substance used at the facility?:* As a by-product Summarize why the toxic substance is used at the facility:** Benzo(a)pyrene used at the facility is a component of the purchased feedstock that is rector meet market and contractual demands for the refinery's products. Reasons for Creation Why is the toxic substance created at the facility?:* As a by-product Summarize why the toxic substance is created at the facility:** The Benzo(a)pyrene created onsite is a byproduct of the complex chemical reactions occurring thermal cracking, and its creation is minimized. Description of the toxic reduction option(s) to be implemented:	hy is the toxic substance used at the facility?:* Is a by-product Immarize why the toxic substance is used at the facility:** In a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products. Isons for Creation In the toxic substance created at the facility?:* Is a by-product Immarize why the toxic substance is created at the facility:** The Benzo(a)pyrene created onsite is a byproduct of the complex chemical reactions occurring thermal cracking, and its creation is minimized. Is Reduction Options for Implementation is cription of the toxic reduction option(s) to be implemented: The a statement that no option will be implemented?:*	X	No timel	ine target or	years
As a by-product Summarize why the toxic substance is used at the facility:** Benzo(a)pyrene used at the facility is a component of the purchased feedstock that is rector meet market and contractual demands for the refinery's products. Reasons for Creation Why is the toxic substance created at the facility?:* As a by-product Summarize why the toxic substance is created at the facility:** The Benzo(a)pyrene created onsite is a byproduct of the complex chemical reactions occurring thermal cracking, and its creation is minimized. Exic Reduction Options for Implementation Description of the toxic reduction option(s) to be implemented:	hy is the toxic substance used at the facility?:* s a by-product ummarize why the toxic substance is used at the facility:** enzo(a)pyrene used at the facility is a component of the purchased feedstock that is required meet market and contractual demands for the refinery's products. Isons for Creation thy is the toxic substance created at the facility?:* is a by-product ummarize why the toxic substance is created at the facility:** the Benzo(a)pyrene created onsite is a byproduct of the complex chemical reactions occurring thermal cracking, and its creation is minimized. Reduction Options for Implementation iccription of the toxic reduction option(s) to be implemented: there a statement that no option will be implemented?:*	Description	n of targets:		
Why is the toxic substance used at the facility?:* As a by-product Summarize why the toxic substance is used at the facility:** Benzo(a)pyrene used at the facility is a component of the purchased feedstock that is rector meet market and contractual demands for the refinery's products. Reasons for Creation Why is the toxic substance created at the facility?:* As a by-product Summarize why the toxic substance is created at the facility:** The Benzo(a)pyrene created onsite is a byproduct of the complex chemical reactions occurring thermal cracking, and its creation is minimized. xic Reduction Options for Implementation Description of the toxic reduction option(s) to be implemented:	hy is the toxic substance used at the facility?:* s a by-product ummarize why the toxic substance is used at the facility:** enzo(a)pyrene used at the facility is a component of the purchased feedstock that is required meet market and contractual demands for the refinery's products. Isons for Creation thy is the toxic substance created at the facility?:* is a by-product ummarize why the toxic substance is created at the facility:** the Benzo(a)pyrene created onsite is a byproduct of the complex chemical reactions occurring thermal cracking, and its creation is minimized. Reduction Options for Implementation iccription of the toxic reduction option(s) to be implemented: there a statement that no option will be implemented?:*				
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xic Reduction Options for Implementation Description of the toxic reduction option(s) to be implemented:	Reduction Options for Implementation scription of the toxic reduction option(s) to be implemented: there a statement that no option will be implemented?:*	to meet ma Reasons for Why is the As a by-pr Summarize	arket and contractual r Creation toxic substance created oduct why the toxic substance	al demands for the refinery's ated at the facility?:*	ity:**
Description of the toxic reduction option(s) to be implemented:	there a statement that no option will be implemented?:*	to meet made and to meet made as a by-process. The Benzo	arket and contractual r Creation toxic substance created why the toxic substance counter contractual contractual r Creation	ated at the facility?:* tance is created at the facility.	ity:**
· • • • • • • • • • • • • • • • • • • •	there a statement that no option will be implemented?:*	to meet made and to meet made as a by-process. The Benzo	arket and contractual r Creation toxic substance created why the toxic substance counter contractual contractual r Creation	ated at the facility?:* tance is created at the facility.	ity:**
Is there a statement that no option will be implemented?:*		to meet marked to meet marked Reasons for Why is the As a by-process. Summarized The Benzo during the	r Creation toxic substance created of the created	ated at the facility?:* tance is created at the facility is creation is minimized.	ity:**
The state of the s		to meet make a sons for Why is the As a by-property Summarized during the axic Reduction of the state of the	arket and contractual r Creation toxic substance created to the created of the cr	ated at the facility?:* tance is created at the facility on site is a byproduct of the is creation is minimized.	ity:** complex chemical reactions occurring
	es	to meet make as a by-pr Summarize The Benze during the exic Reduced the secription	arket and contractual r Creation toxic substance created of the toxic sectors and it of the toxic reduction.	ated at the facility?:* tance is created at the facility on site is a byproduct of the is creation is minimized. mplementation ion option(s) to be impler	ity:** complex chemical reactions occurring mented:
		to meet marked to meet marked Reasons for Why is the As a by-property Summarized The Benzo during the xic Reduction Rescription	arket and contractual r Creation toxic substance created of the toxic sectors and it of the toxic reduction.	ated at the facility?:* tance is created at the facility on site is a byproduct of the is creation is minimized. mplementation ion option(s) to be impler	ity:** complex chemical reactions occurring mented:

No reduction options were identified that are expected to reduce the use or creation of Benzo(a)pyrene 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(a)pyrene at the Sarnia Refinery.

Benzo(a)pyrene 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(a)pyrene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
205-9	99-2, Benzo(b)fluoranthene
-99-2, I	Benzo(b)fluoranthene
Sub	stances Section Data
	atement of Intent
	Jse
_	
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

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

205-99-2,

No

io iargotou timenanie 10	i ii ii o i o d d o ii o i i :	
No quantity target ne targeted timeframe fo		
	Quantity	Unit
e targeted reduction in	use of the toxic subst	•
ts		
t from thermal cracking.	No options to reduce	d feedstock, and is created as a see the use or creation of
s in plan:*		
rargets and Descrip	otion	
during thermal cracking	, and its creation is r	
e at the facility:**		
		the facility's TRA Plan to reduce the
		acility intends to reduce the creation of
)fluoranthene is currentl	ly used at the facility	and enters the refinery in purchased
·**	Plan for no intent to	
	i)fluoranthene is current i)fluoranthene used at the to meet market and confidence that the owner is substance at the facility? I sact statement of the interpretation of the toxic substance at the facility:** I)fluoranthene is created the end of the fluid catalytic crace (b/j)fluoranthene created during thermal cracking. Targets and Descriptions in plan:* I)fluoranthene enters the trom thermal cracking. I)fluoranthene were identification. Its in plan:* I)fluoranthene enters the trom thermal cracking. I)fluoranthene were identification. III is in plan:* III	influoranthene is currently used at the facility in purchased the facility: In the

Page 54 of 111

Description of targets:

	e targeted reduction	in creation of the toxic su	ubstance at the facility?*
		Quantity	Unit
\boxtimes	No quantity target	or	
What is the	e targeted timeframe	e for this reduction?*	
\boxtimes	No time	eline target or	years
Descriptio	n of targets:		
teasons fo	r Use		
Why is the	toxic substance use	ed at the facility?:*	
As a by-p	oduct		
Summariz	a why tha taxia aubs	atongo is used at the facili	i+1,1**
	•	stance is used at the facili	•
required to	o meet market and o	at the facility is a compone contractual demands for the	ent of the purchased feedstock that is he refinery's products.
	r Creation		
Reasons fo	toxic substance cre	eated at the facility?:*	
	toxio odbotarioo ore		
Why is the	roduct	stance is created at the fa	acility:**
Why is the As a by-post Summariz	oduct e why the toxic subs o(b/j)fluoranthene cr	reated onsite is a byprodu	uct of the complex chemical reactions
Why is the As a by-pi Summariz The Benz occurring	oduct e why the toxic subs o(b/j)fluoranthene cr during thermal cracl	reated onsite is a byprodu king, and its creation is m	uct of the complex chemical reactions
Why is the As a by-pa Summariz The Benz occurring	roduct e why the toxic subs o(b/j)fluoranthene cr during thermal crack	reated onsite is a byprodu king, and its creation is m	uct of the complex chemical reactions inimized.

No reduction options were identified that are expected to reduce the use or creation of Benzo(b/j)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(b/j)fluoranthene at the Sarnia Refinery.

Benzo(b/j)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(b/j)fluoranthene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
192-9	7-2, Benzo(e)pyrene
	Benzo(e)pyrene
•	
	stances Section Data
Sta	atement of Intent
<u>U</u>	se
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use

192-97-2,

	No quantity ^C	Quantity	Unit
What is the	e targeted reduction in u		<u>'</u>
Jse Target	S		
			tock, and is created as a byproduct from ation of Benzo(e)pyrene were identified.
Objectives	•		
Objectives			
ojectives, ⁻	Fargets and Descript	ion	
	o(e)pyrene created onsit rmal cracking, and its cr		the complex chemical reactions occurring
	id catalytic cracking unit		
substance	at the facility:**		reduce the creation of the toxic sion units where thermal cracking occurs
	act statement of the inter		the facility's TRA Plan to reduce the
No			the Coefficient TDA Division in the
the toxic s	ubstance at the facility?:	*	domity interior to reduce the creation of
Creation	statement that the owner	r or operator of the t	acility intends to reduce the creation of
	arket and contractual de		
, ,,	•	·	the purchased feedstock that is required
	**		reduce the use of the toxic substance at

Description of targets:

What is the	rgets e targeted reduction in c	reation of the toxic su	bstance at the facility?*
	Ü	Quantity	Unit
X	No quantity carget	or	
What is the	e targeted timeframe for	this reduction?*	
X	No timeline	target or	years
Description	of targets:		
Reasons for	r I lea		
	toxic substance used a	the facility?:*	
-		tile lacility!.	
As a by-pr	oduct		
Summarize	e why the toxic substance	e is used at the facilit	y:**
Benzo(e)p to meet ma	yrene used at the facility arket and contractual de	is a component of the mands for the refinery	ne purchased feedstock that is required y's products.
Reasons for	r Creation		
Why is the	toxic substance created	I at the facility?:*	
As a by-pr	oduct	•	
, is at by p.			
Summarize	e why the toxic substanc	e is created at the fac	cility:**
The Benzo during the	o(e)pyrene created onsit rmal cracking, and its cr	e is a byproduct of the eation is minimized.	e complex chemical reactions occurrin
xic Reduc	tion Options for Impl	ementation	
Description	of the toxic reduction	option(s) to be imple	emented:
lo thoro o c	statement that no option	will be implemented?	.*
is there a s	· · · · · · · · · · · · · · · · · · ·		

Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your facility is not implementing an option.

Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Benzo(e)pyrene 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(e)pyrene at the Sarnia Refinery.

Benzo(e)pyrene 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(e)pyrene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
191-2	24-2, Benzo(g,h,i)perylene
-24-2, E	Benzo(g,h,i)perylene
Subs	stances Section Data
Sta	atement of Intent
U	lse

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

Is there a statement that the owner or operator of the facility intends to reduce the use of the

191-24-2,

No

toxic substance at the facility?:*

If 'no', reason the facility:*		RA Plan for no intent to	reduce the use of the toxic substance a
•		ly used at the facility a	nd enters the refinery in purchased feed
Benzo(g,h,i	i)perylene used at th	ne facility is a compone	ent of the purchased feedstock that is the refinery's products.
Creation			
	atement that the ow bstance at the facilit		facility intends to reduce the creation of
No			
	ct statement of the i the toxic substance		n the facility's TRA Plan to reduce the
	on in the facility's TF	RA Plan for no intent to	reduce the creation of the toxic
		d at the facility in the co acking unit and the col	onversion units where thermal cracking ker reactor.
		ted onsite is a byprodu ing, and its creation is	ct of the complex chemical reactions minimized.
jectives, T	argets and Desc	ription	
Objectives			
Objectives i	n plan:*		
Benzo(g,h,i from therma identified.	i)perylene enters the al cracking. No opti	e facility in purchased for the use	eedstock, and is created as a byproductor or creation of Benzo(g,h,i)perylene were
Jse Targets			
What is the	targeted reduction i	in use of the toxic subs	stance at the facility?*
		Quantity	Unit
\boxtimes	No quantity target	or	
What is the	targeted timeframe	for this reduction?*	
		no target Or	
\boxtimes	No timeli	ne target	years
Description	of targets:		

Page 60 of 110

	targeted reduction in creat	tion of the toxic si	ubstance at the facility?*
		Quantity	Unit
X	No quantity or target		
What is the	targeted timeframe for this	reduction?*	
X	No timeline targ	get or	years
Description	of targets:		
easons for	Use		
Why is the	toxic substance used at the	e facility?:*	
As a by-pro	oduct		
Summarize	why the toxic substance is	s used at the facil	ity:**
	i)nervlene used at the facil	ity is a componer	nt of the purchased feedstock that is
Benzo(g,h, required to	meet market and contract	ual demands for t	the refinery's products.
Benzo(g,h, required to easons for	meet market and contract	ual demands for t	the refinery's products.
required to	meet market and contract	ual demands for t	the refinery's products.
required to	Creation toxic substance created at	ual demands for t	the refinery's products.
required to easons for Why is the As a by-pro	Creation toxic substance created at	ual demands for t	the refinery's products.
required to easons for Why is the As a by-pro	Creation toxic substance created at oduct why the toxic substance is	the facility?:* s created at the facility is a byproduction.	the refinery's products. acility:** t of the complex chemical reactions
required to easons for Why is the As a by-pro Summarize The Benzo occurring o	Creation toxic substance created at oduct why the toxic substance is (g,h,i)perylene created ons during thermal cracking, and	the facility?:* s created at the facility is a byproducted its creation is m	the refinery's products. acility:** t of the complex chemical reactions
required to easons for Why is the As a by-pro Summarize The Benzo occurring of the Reduction	Creation toxic substance created at oduct why the toxic substance is (g,h,i)perylene created ons	the facility?:* s created at the facility is a byproducted its creation is mentation	acility:** t of the complex chemical reactions ninimized.
required to easons for Why is the As a by-pro Summarize The Benzo occurring of the Reduction of the secription of the secreption of the se	Creation toxic substance created at oduct why the toxic substance is (g,h,i)perylene created ons during thermal cracking, and tion Options for Implementation	the facility?:* s created at the facility is a byproduced its creation is mentation ion(s) to be imp	the refinery's products. acility:** t of the complex chemical reactions ninimized.

No reduction options were identified that are expected to reduce the use or creation of Benzo(g,h,i)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 Benzo(g,h,i)perylene at the Sarnia Refinery.

Benzo(g,h,i)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 Benzo(g,h,i)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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
	2-3, Benzo(j)fluoranthene
Subs	stances Section Data
	tement of Intent
U	Se
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No

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

205-82-3,

ed as a	
nical read	Utions
	- ()
hermal c	rackin
ne toxic	
o reduce	the
the crea	tion of
edstock [·]	that is
n purcha	iseu
xic subst	tance

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vvnat is the	targeted reduction in	creation of the toxic su	ubstance at the facility?*
		Quantity	Unit
\boxtimes	No quantity target	or	
What is the	e targeted timeframe fo	or this reduction?*	
×	No timelin	e target or	years
Description	n of targets:		
Reasons fo	r Use		
Why is the	toxic substance used	at the facility?:*	
As a by-pr	oduct		
Summorize	a why the toxic cubata	noo is used at the facili	j4,,,**
	•	nce is used at the facili	•
required to	meet market and cor	ntractual demands for the	ent of the purchased feedstock that is he refinery's products.
easons fo	r Creation		
Why is the	toxic substance creat	ed at the facility?:*	
As a by-pr	oduct		
	e why the toxic substa	nce is created at the fa	acility:**
Summarize		stad anaita ia a byzarodu	uct of the complex chemical reactions
The Benzo	o(b/j)fluoranthene crea during thermal crackin	g, and its creation is m	ninimized.
The Benzo	during thermal crackin	g, and its creation is m	inimized.
The Benzo occurring	during thermal crackin tion Options for Im	g, and its creation is m	ninimized.

No reduction options were identified that are expected to reduce the use or creation of Benzo(b/j)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(b/j)fluoranthene at the Sarnia Refinery.

Benzo(b/j)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(b/j)fluoranthene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
92-52	2-4, Biphenyl
92-52-4, Bi	phenyl
Sub	stances Section Data
Sta	atement of Intent
	lse
_	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No

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

\boxtimes	No timel	ine target or	years
What is the	e targeted timeframe	for this reduction?*	
\boxtimes	No quantity target	or	
		Quantity	Unit
What is the	targeted reduction	in use of the toxic substan	ce at the facility?*
Jse Targets	3		
Biphenyl a fugitive em	t the Sarnia refinery nissions of Biphenyl	, various projects at Sarnia	to reduce the use or creation of a refinery are expected to reduce se projects include but are not limited sion monitoring program.
Objectives	•		
Objectives			
jectives, T	argets and Desc	ription	
		ss of extracting and produ industrial applications.	cing Biphenyl from crude oil to be
processes.		.,	
	•	ity in the conversion units	through both cracking and reforming
If 'no', reas	on in the facility's TI at the facility:**	RA Plan for no intent to red	duce the creation of the toxic
If 'yes', exa creation of	act statement of the the toxic substance	intent that is included in th at the facility:**	e facility's TRA Plan to reduce the
No			
the toxic su	statement that the ovubstance at the facili	vner or operator of the fac ty?:*	ility intends to reduce the creation of
Creation			
used in oth	nery is in the busine ner commercial and	ss of extracting and produ industrial applications.	cing Biphenyl from crude oil to be
crude oil.	·	·	
,		ne facility and enters the re	finery in various feedstock including
If 'no', reas the facility:			

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Creation Ta	rgets		
What is the	targeted reduction	in creation of the toxic su	ubstance at the facility?*
		Quantity	Unit
X	No quantity target	or	
What is the	e targeted timeframe	for this reduction?*	
×	No timel	ine target or	years
Description	of targets:		
Reasons for	· Use		
Why is the	toxic substance use	d at the facility?:*	
For sale/di	stribution		
Summarize	e why the toxic subs	tance is used at the facilit	ty:**
Sarnia refinused in oth	nery is in the busine ner commercial and	ss of extracting and prod industrial applications.	lucing Biphenyl from crude oil to be
Reasons for	· Creation		
Why is the	toxic substance crea	ated at the facility?:*	
For sale/di	stribution		
Summarize	e why the toxic subs	tance is created at the fa	cility:**
Sarnia refinused in oth	nery is in the busine ner commercial and	ss of extracting and prod industrial applications.	lucing Biphenyl from crude oil to be
xic Reduc	tion Options for I	mplementation	
Description	of the toxic reducti	on option(s) to be impl	emented:
Is there a s	tatement that no op	tion will be implemented?	?:*
Yes			

Sarnia refinery is in the business of producing Biphenyl from crude oil to be used in other commercial and industrial applications. No reduction options were identified to reduce the use or creation of Biphenyl at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Biphenyl 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
106-9	99-0, 1,3-Butadiene
-99-0, 1	1,3-Butadiene
Subs	stances Section Data
Sta	atement of Intent

Use

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

No

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

106-99-0.

If 'no', reason the facility:*		A Plan for no intent to re	duce the use of the toxic substance
1, 3-Butadio		at the facility and enters	the refinery in various feedstock
Sarnia refin	ery is in the business	s of extracting and produding industrial applications.	ucing 1, 3-Butadiene from crude oil t
reation			
	atement that the owr		ility intends to reduce the creation o
No			
	ct statement of the in he toxic substance a		ne facility's TRA Plan to reduce the
If 'no', reasonsubstance a		A Plan for no intent to re	duce the creation of the toxic
	it the facility.		
reforming p	ene is created at the rocesses.	•	units through both cracking and ucing 1, 3-Butadiene from crude oil t
reforming p Sarnia refin	ene is created at the rocesses. ery is in the busines:	•	units through both cracking and ucing 1, 3-Butadiene from crude oil t
Sarnia refinde used in ectives, Ta	ene is created at the rocesses. ery is in the busines:	s of extracting and produdindustrial applications.	Ç Ç
sarnia refinde used in ectives, Tablectives	ene is created at the rocesses. ery is in the busines other commercial and argets and Descri	s of extracting and produdindustrial applications.	Ç Ç
reforming p Sarnia refin be used in	ene is created at the rocesses. ery is in the busines other commercial and argets and Descri	s of extracting and produdindustrial applications.	Ç Ç
reforming p Sarnia refin be used in jectives, Tabjectives Objectives i While Impe Butadiene a fugitive emi	ene is created at the rocesses. ery is in the business other commercial and argets and Description plan:* rial Oil has not identiat the Sarnia refinery ssions of 1, 3-Butadi	s of extracting and product industrial applications. iption ified any feasible options y various projects at Sarriene in the coming years	Ç Ç
reforming p Sarnia refinde used in the use	ene is created at the rocesses. ery is in the business other commercial and argets and Description plan:* rial Oil has not identiat the Sarnia refinery ssions of 1, 3-Butadi	s of extracting and product industrial applications. iption ified any feasible options y various projects at Sarriene in the coming years	to reduce the use or creation of 1, 3 in a refinery are expected to reduce. These projects include but are not
reforming p Sarnia refin be used in iectives, Tabjectives Objectives i While Impe Butadiene a fugitive emi limited to ta	ene is created at the rocesses. ery is in the business other commercial and argets and Description plan:* rial Oil has not identiat the Sarnia refinery ssions of 1, 3-Butadink upgrades and impressions and impressions of the sarnia refinery saions of the saions of th	s of extracting and product industrial applications. iption ified any feasible options y various projects at Sarriene in the coming years	to reduce the use or creation of 1, 3 in a refinery are expected to reduce. These projects include but are not re emission monitoring program.
reforming p Sarnia refin be used in ectives, Tabjectives Objectives i While Impe Butadiene a fugitive emi limited to ta	ene is created at the rocesses. ery is in the business other commercial and argets and Description plan:* rial Oil has not identiat the Sarnia refinery ssions of 1, 3-Butadink upgrades and impressions and impressions of the sarnia refinery saions of the saions of th	s of extracting and product industrial applications. iption ified any feasible options y various projects at Sarriene in the coming years provements to the fugitive	to reduce the use or creation of 1, 3 in a refinery are expected to reduce. These projects include but are not re emission monitoring program.
reforming p Sarnia refin be used in iectives, Tabjectives Objectives i While Impe Butadiene a fugitive emi limited to ta	ene is created at the rocesses. ery is in the business other commercial and argets and Description plan:* rial Oil has not identiat the Sarnia refinery ssions of 1, 3-Butadink upgrades and impressions and impressions of the sarnia refinery saions of the saions of th	s of extracting and product industrial applications. iption ified any feasible options at Sarrieus projects at Sarrieus in the coming years provements to the fugitive ause of the toxic substantial	to reduce the use or creation of 1, 3 in a refinery are expected to reduce. These projects include but are not re emission monitoring program.
reforming p Sarnia refin be used in jectives, Tabjectives Objectives i While Impe Butadiene a fugitive emi limited to ta se Targets What is the	ene is created at the rocesses. ery is in the business other commercial and argets and Descring plan:* rial Oil has not identiat the Sarnia refinery ssions of 1, 3-Butadink upgrades and implementation in the commercial process.	s of extracting and product industrial applications. iption ified any feasible options y various projects at Samiene in the coming years provements to the fugitive use of the toxic substant Quantity or	to reduce the use or creation of 1, 3 in a refinery are expected to reduce. These projects include but are not re emission monitoring program.
reforming p Sarnia refin be used in jectives, Tabjectives Objectives i While Impe Butadiene a fugitive emi limited to ta se Targets What is the	ene is created at the rocesses. ery is in the business other commercial and argets and Description plan:* rial Oil has not identified the Sarnia refinery ssions of 1, 3-Butadink upgrades and implementation of the commercial argeted reduction in the No quantity target	s of extracting and product industrial applications. iption ified any feasible options y various projects at Samiene in the coming years provements to the fugitive use of the toxic substant Quantity or	to reduce the use or creation of 1, 3 in a refinery are expected to reduce. These projects include but are not re emission monitoring program.

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Creation Ta	ırgets		
What is the	e targeted reduction in o	creation of the toxic su	ubstance at the facility?*
		Quantity	Unit
\boxtimes	No quantity target	or	
What is the	e targeted timeframe for	this reduction?*	
\boxtimes	No timeline	target or	years
Description	n of targets:		
Dagage fo	* l lo o		
Reasons fo		t the facility O.*	
	toxic substance used a	it the facility?.	
For on-site	e use/processing		
Summarize	e why the toxic substan	ce is used at the facili	ity:**
Sarnia refi be used in	nery is in the business other commercial and	of extracting and procindustrial applications	ducing 1, 3-Butadiene from crude oil to s.
Reasons fo	r Creation		
Why is the	toxic substance create	d at the facility?:*	
For sale/d	istribution		
Summarize	e why the toxic substan	ce is created at the fa	acility:**
Sarnia refi be used in	nery is in the business other commercial and	of extracting and procindustrial applications	ducing 1, 3-Butadiene from crude oil to s.
xic Reduc	tion Options for Imp	lementation	
Description	of the toxic reduction	option(s) to be impl	lemented:
Is there a s	statement that no option	will be implemented	o.*
10 111010 0 1	statement that no option	i wiii be implemented	f.

Sarnia refinery is in the business of producing 1, 3-Butadiene from crude oil to be used in other commercial and industrial applications. No reduction options were identified to reduce the use or creation of 1, 3-Butadiene at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of 1, 3-Butadiene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
NA -	03, Cadmium (and its compounds)
NA - 03, C	admium (and its compounds)
Sub	stances Section Data
Sta	atement of Intent
	Jse
_	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

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

No

	oon in the facility's TDA Dlan for no intent to r	raduos the use of the toxic substance of
the facility:	son in the facility's TRA Plan for no intent to r .**	reduce the use of the toxic substance a
	(and its compounds) is currently used at the with the crude oil and purchased feed stocks.	
Cadmium refinery fe	(and its compounds) is naturally occurring in edstock, which are required by the refinery to	n trace quantities in crude oil and other orun its base business.
reation		
	statement that the owner or operator of the fauther ubstance at the facility?:*	acility intends to reduce the creation of
No		
If 'yes', exacreation of	act statement of the intent that is included in the toxic substance at the facility:**	the facility's TRA Plan to reduce the
	son in the facility's TRA Plan for no intent to r at the facility:**	reduce the creation of the toxic
Cadmium	(and its compounds) is not created at the fac	cility.
iectives ⁻	Towarts and Decembring	
ICCLIVCS.	rargets and Description	
bjectives	Targets and Description	
Objectives Cadmium by the refi		d its compounds) is also found in trace
Objectives Cadmium by the refi	in plan:* (and its compounds) is naturally occurring in nery to run its base business. Cadmium (and in the purchased feed. No reduction objective	d its compounds) is also found in trace
Objectives Objectives Cadmium by the refi quantities se Targets	in plan:* (and its compounds) is naturally occurring in nery to run its base business. Cadmium (and in the purchased feed. No reduction objective	d its compounds) is also found in trace ves have been identified.
Objectives Objectives Cadmium by the refi quantities se Targets	in plan:* (and its compounds) is naturally occurring in nery to run its base business. Cadmium (and in the purchased feed. No reduction objectives.	d its compounds) is also found in trace ves have been identified.
Objectives Objectives Cadmium by the refi quantities se Targets	s in plan:* (and its compounds) is naturally occurring in nery to run its base business. Cadmium (and in the purchased feed. No reduction objectives e targeted reduction in use of the toxic substa	d its compounds) is also found in trace ves have been identified. ance at the facility?*
Objectives Objectives Cadmium by the refit quantities se Targets What is the	(and its compounds) is naturally occurring in nery to run its base business. Cadmium (and in the purchased feed. No reduction objectives e targeted reduction in use of the toxic substance. Quantity No quantity	d its compounds) is also found in trace ves have been identified. ance at the facility?*
Objectives Objectives Cadmium by the refit quantities se Targets What is the	(and its compounds) is naturally occurring in nery to run its base business. Cadmium (and in the purchased feed. No reduction objectives e targeted reduction in use of the toxic substance. Quantity No quantity target	d its compounds) is also found in trace ves have been identified. ance at the facility?*
Objectives Cadmium by the refi quantities se Targets What is the	(and its compounds) is naturally occurring in nery to run its base business. Cadmium (and in the purchased feed. No reduction objectives e targeted reduction in use of the toxic substance. Quantity No quantity target e targeted timeframe for this reduction?*	d its compounds) is also found in trace ves have been identified. ance at the facility?* Unit

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		Quantity	Unit
\boxtimes	No quantity target	or	
What is the	e targeted timeframe fo	or this reduction?*	
\boxtimes	No timeline	e target or	years
Description	of targets:		
easons for	· Use		
Why is the	toxic substance used	at the facility?:*	
As an impu	urity		
Summarize	e why the toxic substan	nce is used at the facility:	**
Cadmium	(and its compounds) is		ace quantities in crude oil and other
easons for	· Creation		
Why is the	toxic substance create	ed at the facility?:*	
This substa	ance is not created at	the facility	
	ance is not created at	the facility	ity:**
Summarize	ance is not created at	nce is created at the facil	ity:**
Summarize	ance is not created at why the toxic substantion Options for Im	nce is created at the facil	
Summarize kic Reduct escription	ance is not created at why the toxic substant tion Options for Important of the toxic reduction	nce is created at the facil	mented:

No technically and economically feasible options were identified that would be expected to reduce the use of Cadmium (and its compounds) at the facility. Cadmium (and its compounds) is not created at the facility.

Cadmium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business.

	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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
,	What version of the plan is this summary based on?:*
	New Plan
189-5	5-9, Dibenzo(a,i)pyrene
189-55-9, D	ibenzo(a,i)pyrene
Subs	stances Section Data
Stat	tement of Intent
Us	Se
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No
	If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

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

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

Dibenzo(a,i)pyrene 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
Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*
No
If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the creation of the toxic substance at the facility:**
If 'no', reason in the facility's TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**
Dibenzo(a,i)pyrene 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,i)pyrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.
Objectives, Targets and Description
Objectives
Objectives in plan:*
Dibenzo(a,i)pyrene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking. No options to reduce the use or creation of Dibenzo(a,i)pyrene were identified.

Use Targets

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

		Qu	antity	•	Unit	
I	No quantity target	or				
at is the ta	rgeted timeframe	for this re	ductio	n?*		
	No timeli	ne target	or		years	S
cription of	targets:					

		Quantity	Unit
X	No quantity target	or	
What is the	e targeted timeframe	for this reduction?*	
X	No timelir	ne target or	years
Description	of targets:		
easons for	r Use		
Why is the	toxic substance used	d at the facility?:*	
	toxiio odbotai ioo doot	· ··· · · · · · · · · · · · · · · · ·	
As a by-pro		,	
<u> </u>	oduct	ance is used at the facility:	**
Summarize	oduct why the toxic substa	ance is used at the facility:	the purchased feedstock that is
Summarize	oduct why the toxic substantial, i)pyrene used at the omeet market and co	ance is used at the facility:	the purchased feedstock that is
Summarize Dibenzo(a required to	oduct why the toxic substantial, i)pyrene used at the omeet market and co	ance is used at the facility: facility is a component of ontractual demands for the	the purchased feedstock that is
Summarize Dibenzo(a required to	oduct why the toxic substantial why the toxic substantial property in the content of the cont	ance is used at the facility: facility is a component of ontractual demands for the	the purchased feedstock that is
Summarized Dibenzo(a required to Reasons for Why is the As a by-pression of the Summarized Pression of	oduct why the toxic substantial why the toxic substantial pyrene used at the owneet market and contact Creation toxic substance creation oduct	ance is used at the facility: facility is a component of ontractual demands for the	the purchased feedstock that is refinery's products.
Summarized Dibenzo(a required to Reasons for Why is the As a by-pressummarized The Dibenzon Summarized The Dibenzon Summarized The Dibenzon Summarized Summarized The Dibenzon Summarized S	oduct why the toxic substantial i)pyrene used at the owneet market and control toxic substance created and control why the toxic substance created and control c	ance is used at the facility: facility is a component of ontractual demands for the ated at the facility?:*	the purchased feedstock that is refinery's products. ity:** he complex chemical reactions
Summarized Dibenzo(a required to Reasons for Why is the As a by-processing of the Dibent occurring occ	e why the toxic substantial in the substantial in the substance creation in the substance creati	ance is used at the facility: facility is a component of ontractual demands for the atted at the facility?:* ance is created at the facility on the facility?:*	the purchased feedstock that is refinery's products. ity:** he complex chemical reactions
Summarized Dibenzo(a required to Reasons for Why is the As a by-processing to the Dibent occurring to the Reduction	e why the toxic substantial pyrene used at the owner market and control of the co	ance is used at the facility: facility is a component of ontractual demands for the atted at the facility?:* ance is created at the facility on the facility?:*	the purchased feedstock that is refinery's products. ity:** he complex chemical reactions mized.
Summarized The Dibentoccurring of escription	e why the toxic substantial in the toxic substantial in the toxic substance created why the toxic substance created and content in the toxic substance created in the toxic substantial in the toxic substantial in the toxic substantial in the toxic reduction of the toxic reduction	ance is used at the facility: facility is a component of ontractual demands for the ated at the facility?:* ance is created at the facility on the facility of the facility on the facility on the facility of the facility of the facility on the facility of the facility o	the purchased feedstock that is refinery's products. ity:** he complex chemical reactions mized.

No reduction options were identified that are expected to reduce the use or creation of Dibenzo(a,i)pyrene 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,i)pyrene at the Sarnia Refinery.

Dibenzo(a,i)pyrene 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,i)pyrene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
	2-0, Dibenzo(a,j)acridine
-42-0, [Dibenzo(a,j)acridine
Sub	stances Section Data
Sta	atement of Intent
L	Jse
_	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No

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

224-42-0,

Dibenzo(a,j			
	acridine is currently	y used at the facility and e	enters the refinery in purchased feed.
required to		e facility is a component contractual demands for the	of the purchased feedstock that is e refinery's products.
Creation			
	atement that the ow estance at the facility		ility intends to reduce the creation of
No			
If 'yes', exaction of the	et statement of the in the toxic substance a	ntent that is included in th at the facility:**	ne facility's TRA Plan to reduce the
substance a Dibenzo(a,j)	t the facility:**)acridine is created	at the facility in the conve	duce the creation of the toxic ersion units where thermal cracking
occurs like t	he fluid catalytic cra	acking unit and the coker	reactor.
		ed onsite is a byproduct ong, and its creation is mir	f the complex chemical reactions
	argets and Descr	•	
•	argets and Descr	прион	
Joiecuves			
•	 า plan:*		
Objectives in Dibenzo(a,j))acridine enters the	facility in purchased feed ons to reduce the use or	Istock, and is created as a byproduct creation of Dibenzo(a,j)acridine were
Objectives in Dibenzo(a,j) from thermal identified.)acridine enters the	facility in purchased feed ons to reduce the use or	Istock, and is created as a byproduct creation of Dibenzo(a,j)acridine were
Dibenzo(a,j) from therma identified. Jse Targets)acridine enters the all cracking. No option	facility in purchased feed ons to reduce the use or one n use of the toxic substar	creation of Dibenzo(a,j)acridine were
Objectives in Dibenzo(a,j) from thermal identified. Jse Targets)acridine enters the all cracking. No option	ons to reduce the use or o	creation of Dibenzo(a,j)acridine were
Objectives in Dibenzo(a,j) from thermal identified. Jse Targets)acridine enters the all cracking. No option	ons to reduce the use or one of the toxic substan	creation of Dibenzo(a,j)acridine were
Objectives in Dibenzo(a,j) from thermal identified. Jse Targets What is the	acridine enters the all cracking. No option targeted reduction in No quantity	n use of the toxic substar Quantity or	creation of Dibenzo(a,j)acridine were

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what is the	targeted reduction in crea	tion of the toxic su	bstance at the facility?*
		Quantity	Unit
X	No quantity or target		
What is the	targeted timeframe for this	s reduction?*	
X	No timeline tarç	get or	years
Description	of targets:		
asons fo	Use		
	toxic substance used at th	e facility?:*	
As a by-pr		,	
<u> </u>			**
	why the toxic substance is		•
Dibenzo(a required to	meet market and contract	ity is a component tual demands for th	of the purchased feedstock that is ne refinery's products.
easons for	Creation		
Why is the	toxic substance created at	the facility?:*	
111y 10 ti 10	oduct		
As a by-pr	why the toxic substance is	s created at the fac	cility:**
As a by-pr Summarize		site is a byproduct o	of the complex chemical reactions
As a by-pr Summarize The Diben occurring o	zo(a,j)acridine created ons	ite is a byproduct on its creation is mi	of the complex chemical reactions
As a by-pr Summarize The Diben occurring o	zo(a,j)acridine created ons luring thermal cracking, an	ite is a byproduct on its creation is minentation	of the complex chemical reactions nimized.

No reduction options were identified that are expected to reduce the use or creation of Dibenzo(a,j)acridine 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,j)acridine at the Sarnia Refinery.

Dibenzo(a,j)acridine 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,j)acridine 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
	1-4, Ethylbenzene
-41-4, E	Ethylbenzene
Sub	stances Section Data
Sta	atement of Intent
U	lse
_	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No

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

100-41-4,

If 'no', reason in the facility:**	n the facility's TRA	A Plan for no inten	t to reduce the use	of the toxic substance at
Ethylbenzene including crude		at the facility and e	nters the refinery in	n various feedstock
Sarnia refinery used in other of	is in the business ommercial and in	s of extracting and dustrial application	producing Ethylbe s.	nzene from crude oil to be
Creation				
	ment that the own		ne facility intends t	o reduce the creation of
No				
If 'yes', exact s creation of the	tatement of the intoxic substance a	tent that is include t the facility:**	d in the facility's TF	RA Plan to reduce the
If 'no', reason in substance at the		A Plan for no inten	t to reduce the crea	ation of the toxic
reforming proc Sarnia refinery	esses. is in the business	of extracting and	producing Ethylbe	both cracking and nzene from crude oil to be
used in other of	ommercial and in	dustrial applicatior	is.	
bjectives, Targ	ets and Descri	ption		
Objectives				
Objectives in p	an:*			
Ethylbenzene fugitive emissi	at the Sarnia refin ons of Ethylbenze	ery, various projed ne in the coming y	ets at Sarnia refinei rears. These proje	e use or creation of ry are expected to reduce cts include but are not nonitoring program.
Use Targets				
	geted reduction in	use of the toxic su	ubstance at the fac	ility?*
		Quantity		Unit
\boxtimes	No quantity target	or		
What is the tar	geted timeframe fo	or this reduction?*		
\boxtimes	No timeline	e target or		years
Description of t	argets:			

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	e targeted reduction	in creation of the toxic su	ubstance at the facility?*
		Quantity	Unit
\boxtimes	No quantity target	or	
What is th	e targeted timeframe	e for this reduction?*	
X	No time	line target or	years
Description	n of targets:		
Reasons fo	or Use		
	e toxic substance use	ed at the facility?:*	
•	distribution		
Summariz	e why the toxic subs	stance is used at the facili	ity:**
Sarnia re	inery is in the busine ther commercial and	ess of extracting and prod industrial applications.	ducing Ethylbenzene from crude oil to b
	or Creation		
toasons it		eated at the facility?:*	
Why is the		oatou at the raemty	
-			
Why is the	JISTIDUTION		
For sale/o		stance is created at the fa	acility:**
For sale/o	e why the toxic subs	ess of extracting and proc	acility:** ducing Ethylbenzene from crude oil to b
For sale/o Summariz Sarnia re used in o	e why the toxic subs finery is in the busine ther commercial and	ess of extracting and prod industrial applications.	·
For sale/o Summariz Sarnia re used in o	te why the toxic substinery is in the busine ther commercial and ction Options for I	ess of extracting and prod industrial applications.	ducing Ethylbenzene from crude oil to b

Sarnia refinery is in the business of producing Ethylbenzene from crude oil to be used in other commercial and industrial applications. No reduction options were identified to reduce the use or creation of Ethylbenzene at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Ethylbenzene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
206-4	4-0, Fluoranthene
-44-0, F	Fluoranthene
Subs	stances Section Data
	atement of Intent
	lse
<u> </u>	
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No

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

206-44-0,

the facility:	on in the facility's TR		
Fluoranthe	ne is currently used a	at the facility and enters t	he refinery in purchased feed.
		y is a component of the permands for the refinery's	urchased feedstock that is required products.
Creation			
	tatement that the own		ility intends to reduce the creation of
No			
If 'yes', exa creation of	ct statement of the in the toxic substance a	ntent that is included in that the facility:**	e facility's TRA Plan to reduce the
If 'no' reas	on in the facility's TR	A Plan for no intent to re	duce the creation of the toxic
substance	at the facility:**		
substance Fluoranthe	at the facility:** ne is created at the f		units where thermal cracking occurs
Fluoranthe like the fluoranthe	at the facility:** ne is created at the faction of the catalytic cracking unthene created onsite	acility in the conversion ເ unit and the coker reactor	units where thermal cracking occurs
Fluoranthe like the fluoraduring ther	at the facility:** ne is created at the faction of the catalytic cracking unthene created onsite	acility in the conversion unit and the coker reactor is a byproduct of the cocreation is minimized.	units where thermal cracking occurs
Fluoranthe like the fluoraduring ther	at the facility:** ne is created at the factorial distribution of	acility in the conversion unit and the coker reactor is a byproduct of the cocreation is minimized.	units where thermal cracking occurs
Fluoranthe like the fluora during ther pjectives, T	at the facility:** The is created at the facility cracking unthene created onsity mal cracking, and its Targets and Descr	acility in the conversion unit and the coker reactor is a byproduct of the cocreation is minimized.	units where thermal cracking occurs
Fluoranthe like the fluid The Fluoraduring ther ojectives, Tobjectives Objectives Fluoranthe	at the facility:** The is created at the folding use the catalytic cracking use the catalytic cracking use the created onsite and cracking, and its cargets and Description plan:*	acility in the conversion unit and the coker reactor is a byproduct of the cocreation is minimized.	units where thermal cracking occurs
Fluoranthe like the fluid The Fluoraduring ther ojectives, Tobjectives Objectives Fluoranthe	at the facility:** ne is created at the factorial cracking unthene created onsity and its argets and Description plan:* ne enters the facility acking. No options to	acility in the conversion unit and the coker reactor is a byproduct of the cocreation is minimized.	units where thermal cracking occurs complex chemical reactions occurring and is created as a byproduct from
Fluoranthe like the fluir The Fluora during ther ojectives, Tobjectives Objectives Fluoranthe thermal cra	at the facility:** The is created at the fid catalytic cracking unthene created onsitemal cracking, and its Targets and Description plan:* The enters the facility acking. No options to	acility in the conversion unit and the coker reactor is a byproduct of the cocreation is minimized.	units where thermal cracking occurs complex chemical reactions occurring and is created as a byproduct from on of Fluoranthene were identified.
Fluoranthe like the fluir The Fluora during ther ojectives, Tobjectives Objectives Fluoranthe thermal cra	at the facility:** The is created at the fid catalytic cracking unthene created onsitemal cracking, and its Targets and Description plan:* The enters the facility acking. No options to	acility in the conversion unit and the coker reactor is a byproduct of the cocreation is minimized.	units where thermal cracking occurs complex chemical reactions occurring and is created as a byproduct from on of Fluoranthene were identified.
Fluoranthe like the fluir The Fluora during ther ojectives, Tobjectives Objectives Fluoranthe thermal cra	at the facility:** The is created at the fid catalytic cracking unthene created onsitemal cracking, and its Targets and Description plan:* The enters the facility acking. No options to	acility in the conversion unit and the coker reactor is a byproduct of the concreation is minimized. Tiption In purchased feedstock, or reduce the use or creation is muse of the toxic substantal acids.	units where thermal cracking occurs complex chemical reactions occurring and is created as a byproduct from on of Fluoranthene were identified.
Fluoranthe like the fluid The Fluora during there ojectives, Tobjectives Objectives Fluoranthe thermal crass What is the	at the facility:** The is created at the find catalytic cracking unthene created onsity and cracking, and its Targets and Description in plan:* The enters the facility acking. No options to entered the facility acking.	acility in the conversion unit and the coker reactor is a byproduct of the concreation is minimized. Tiption in purchased feedstock, or reduce the use or creation is minimized. Quantity or	units where thermal cracking occurs complex chemical reactions occurring and is created as a byproduct from on of Fluoranthene were identified.

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vvnat is the	e targeted reduction in crea	ition of the toxic subs	•
		Quantity	Unit
X	No quantity or target		
What is the	e targeted timeframe for thi	s reduction?*	
\boxtimes	No timeline tar	get or	years
Description	n of targets:		
Reasons for	r Use		
Why is the	toxic substance used at th	e facility?:*	
As a by-pr	oduct		
Summarize	e why the toxic substance i	s used at the facility:	**
Fluoranthe meet mark	ene used at the facility is a set and contractual demand	component of the pure ds for the refinery's pr	rchased feedstock that is required to roducts.
Reasons for	r Creation		
Why is the	toxic substance created at	t the facility?:*	
As a by-pr	oduct		
Summarize	e why the toxic substance i	s created at the facili	ty:**
The Fluora	anthene created onsite is a rmal cracking, and its creat	byproduct of the contion is minimized.	nplex chemical reactions occurring
via Dadua	tion Options for Implen	nentation	
xic Reduc			

No reduction options were identified that are expected to reduce the use or creation of 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 Fluoranthene at the Sarnia Refinery.

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 Fluoranthene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
86-73	-7, Fluorene
86-73-7, Flo	uorene
Subs	stances Section Data
Sta	atement of Intent
	lse
_	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No

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

the facility:	on in the facility's TR		
Fluorene is	s currently used at the	e facility and enters the re	efinery in purchased feed.
Fluorene u market and	ised at the facility is a d contractual demand	a component of the purchads for the refinery's product	ased feedstock that is required to mects.
Creation			
	statement that the own substance at the facility		ility intends to reduce the creation of
No			
If 'yes', exacreation of	act statement of the in the toxic substance a	ntent that is included in that the facility:**	e facility's TRA Plan to reduce the
16.6	on in the facility of TD	A Plan for no intent to rec	duce the creation of the toxic
substance	at the facility:**	A Flati for no intent to rec	addo the ordation of the texts
substance Fluorene is	at the facility:**	y in the conversion units	where thermal cracking occurs like th
Fluorene is fluid cataly The Fluore	at the facility:** s created at the facility tic cracking unit and the ene created onsite is a	y in the conversion units the coker reactor. a byproduct of the comple	
Fluorene is fluid cataly The Fluorethermal cra	at the facility:** s created at the facility tic cracking unit and the ene created onsite is a acking, and its creation	y in the conversion units the coker reactor. a byproduct of the completon is minimized.	where thermal cracking occurs like th
Fluorene is fluid cataly The Fluorethermal crapicatives, Tojectives,	at the facility:** s created at the facility tic cracking unit and the ene created onsite is a	y in the conversion units the coker reactor. a byproduct of the completon is minimized.	where thermal cracking occurs like th
Fluorene is fluid cataly The Fluore thermal crappectives, Tobjectives	at the facility:** s created at the facility rtic cracking unit and the created onsite is a cacking, and its creation argets and Description	y in the conversion units the coker reactor. a byproduct of the completon is minimized.	where thermal cracking occurs like th
substance Fluorene is fluid cataly The Fluore thermal cra Djectives, Dbjectives Objectives Fluorene e	at the facility:** s created at the facility rtic cracking unit and the ene created onsite is a acking, and its creation argets and Description in plan:*	ry in the conversion units the coker reactor. a byproduct of the comple on is minimized. ription	where thermal cracking occurs like the ex chemical reactions occurring during the created as a byproduct from therm
Fluorene is fluid cataly The Fluore thermal crappectives, Tobjectives Objectives Fluorene ecracking.	at the facility:** s created at the facility rtic cracking unit and the ene created onsite is a acking, and its creation argets and Description in plan:* enters the facility in put No options to reduce	ry in the conversion units the coker reactor. a byproduct of the completon is minimized. ription	where thermal cracking occurs like the ex chemical reactions occurring during the created as a byproduct from therm
substance Fluorene is fluid cataly The Fluore thermal cracking. Objectives Objectives Fluorene ecracking.	at the facility:** s created at the facility rtic cracking unit and the ene created onsite is a acking, and its creation argets and Description in plan:* enters the facility in put No options to reduce	ry in the conversion units the coker reactor. a byproduct of the completon is minimized. ription	where thermal cracking occurs like the ex chemical reactions occurring during the created as a byproduct from therm to the extreme were identified.
substance Fluorene is fluid cataly The Fluore thermal cracking. Objectives Objectives Fluorene ecracking.	at the facility:** s created at the facility rtic cracking unit and the ene created onsite is a acking, and its creation argets and Description in plan:* enters the facility in put No options to reduce	ry in the conversion units the coker reactor. a byproduct of the completon is minimized. ription urchased feedstock, and in the use or creation of Flu	where thermal cracking occurs like the ex chemical reactions occurring during the created as a byproduct from therm to the extreme were identified.
substance Fluorene is fluid cataly The Fluore thermal cracking. Objectives Objectives Fluorene ecracking.	at the facility:** s created at the facility rtic cracking unit and the ene created onsite is a acking, and its creation argets and Description in plan:* enters the facility in put No options to reduce	ry in the conversion units the coker reactor. a byproduct of the completon is minimized. ription urchased feedstock, and if the use or creation of Fluin use of the toxic substant	where thermal cracking occurs like the ex chemical reactions occurring during its created as a byproduct from therm to be one were identified.
Fluorene is fluid cataly The Fluore thermal crackings Objectives Cobjectives Fluorene ecracking. Jse Targets What is the	at the facility:** s created at the facility rtic cracking unit and the ene created onsite is a acking, and its created argets and Descri- in plan:* enters the facility in put No options to reduce a targeted reduction in	y in the conversion units the coker reactor. a byproduct of the completon is minimized. ription urchased feedstock, and it the use or creation of Fluin use of the toxic substant Quantity or	where thermal cracking occurs like the ex chemical reactions occurring during its created as a byproduct from therm to be one were identified.

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	e targeted reduction	in creation of the toxic su	ubstance at the facility?*
		Quantity	Unit
\boxtimes	No quantity target	or	
What is th	e targeted timeframe	e for this reduction?*	
×	No time	line target or	years
Descriptio	n of targets:		
leasons fo			
Why is the	toxic substance use	ed at the facility?:*	
As a by-p	roduct		
Summariz	e why the toxic subs	stance is used at the facili	ity:**
Fluorene	used at the facility is	a component of the purc	chased feedstock that is required to mee
market ar	ia contractuai demar	ius ioi tile relifiery's prod	JUCIS.
market ar	or Creation	ius for the refinery's prod	ducts.
market ar	r Creation	eated at the facility?:*	ducts.
market ar	or Creation e toxic substance cre		ducts.
market and easons for Why is the As a by-p	or Creation e toxic substance cre roduct	eated at the facility?:*	
market and easons for Why is the As a by-p	or Creation e toxic substance cre roduct e why the toxic subs	eated at the facility?:* stance is created at the fa	acility:**
market and Reasons for Why is the As a by-p Summariz	or Creation e toxic substance cre roduct e why the toxic subs	eated at the facility?:* stance is created at the factors and the stance is a byproduct of the comp	
market and easons for Why is the As a by-p Summarize The Fluor thermal contracts	e toxic substance cre roduct e why the toxic substance created onsite is racking, and its creat	eated at the facility?:* stance is created at the faction is minimized.	acility:**
Market and Reasons for Why is the As a by-p Summariz The Fluor thermal contact Reduction	er Creation toxic substance cre roduct e why the toxic substance created onsite is racking, and its created ction Options for I	eated at the facility?:* stance is created at the faction is minimized.	acility:** plex chemical reactions occurring durin

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

Fluorene 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 Fluorene 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 why the listed options were chosen for implementation: General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan: License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):* TSRP0071 License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):* **TSRP0071** What version of the plan is this summary based on?:* New Plan

193-39-5, Indeno(1,2,3-c,d)pyrene

193-39-5, Indeno(1,2,3-c,d)pyrene

Substances Section Data

Statement of Intent

Use

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

No

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

feed. Indeno(1,2	2,3-c,d)pyrene used at	t the facility is a compo	and enters the refinery in purchased onent of the purchased feedstock that is the refinery's products.
Creation			
	statement that the own ubstance at the facility		acility intends to reduce the creation of
No			
	act statement of the int the toxic substance a		the facility's TRA Plan to reduce the
	son in the facility's TRA at the facility:**	A Plan for no intent to	reduce the creation of the toxic
occurs like	e the fluid catalytic crac o(1,2,3-c,d)pyrene cre	cking unit and the coke	duct of the complex chemical reactions
occurs like	e the fluid catalytic crac o(1,2,3-c,d)pyrene cre	cking unit and the coke eated onsite is a bypro ig, and its creation is n	er reactor. duct of the complex chemical reactions
occurs like	e the fluid catalytic crac o(1,2,3-c,d)pyrene cre during thermal crackin	cking unit and the coke eated onsite is a bypro ig, and its creation is n	er reactor. duct of the complex chemical reactions
occurs like The Indenoccurring of	e the fluid catalytic crace o(1,2,3-c,d)pyrene cre during thermal crackin Fargets and Descri	cking unit and the coke eated onsite is a bypro ig, and its creation is n	er reactor. duct of the complex chemical reactions
occurs like The Indenoccurring of the occurring of the occurrence of the occurre	e the fluid catalytic crace o(1,2,3-c,d)pyrene cre during thermal crackin Fargets and Descri in plan:* 2,3-c,d)pyrene enters t	cking unit and the cokerated onsite is a byprong, and its creation is not perform the facility in purchase	er reactor. duct of the complex chemical reactions
occurs like The Indenoccurring of the occurring of the occurrence of the occurre	e the fluid catalytic crace o(1,2,3-c,d)pyrene cre during thermal crackin Fargets and Descri in plan:* 2,3-c,d)pyrene enters t from thermal cracking e were identified.	cking unit and the cokerated onsite is a byprong, and its creation is not perform the facility in purchase	er reactor. duct of the complex chemical reactions ninimized. ed feedstock, and is created as a
occurs like The Indenoccurring of the Dijectives, Tobjectives Objectives Indeno(1,2 byproduct c,d)pyrene	e the fluid catalytic crace o(1,2,3-c,d)pyrene creduring thermal crackin Fargets and Description in plan:* 2,3-c,d)pyrene enters the from thermal cracking were identified.	cking unit and the cokerated onsite is a byprong, and its creation is not perform the facility in purchase	er reactor. duct of the complex chemical reactions ninimized. ed feedstock, and is created as a e the use or creation of Indeno(1,2,3-
occurs like The Indenoccurring of the Dijectives, Tobjectives Objectives Indeno(1,2 byproduct c,d)pyrene	e the fluid catalytic crace o(1,2,3-c,d)pyrene creduring thermal crackin Fargets and Description in plan:* 2,3-c,d)pyrene enters the from thermal cracking were identified.	cking unit and the cokerated onsite is a byprong, and its creation is notion	er reactor. duct of the complex chemical reactions ninimized. ed feedstock, and is created as a e the use or creation of Indeno(1,2,3-
occurs like The Indenoccurring of the Dijectives, Tobjectives Objectives Indeno(1,2 byproduct c,d)pyrene	e the fluid catalytic crace o(1,2,3-c,d)pyrene creduring thermal crackin Fargets and Description in plan:* 2,3-c,d)pyrene enters the from thermal cracking were identified.	eated onsite is a byproing, and its creation is numbers of the facility in purchase g. No options to reduce the use of the toxic substitute of the toxic substitute.	er reactor. duct of the complex chemical reactions ninimized. ed feedstock, and is created as a e the use or creation of Indeno(1,2,3- eance at the facility?*
occurs like The Indenoccurring of occurring occurri	e the fluid catalytic crace o(1,2,3-c,d)pyrene creduring thermal crackin Fargets and Description in plan:* 2,3-c,d)pyrene enters the from thermal cracking were identified. Example targeted reduction in No quantity	eated onsite is a byproing, and its creation is not its creation is not its creation. In the facility in purchase is not options to reduce the use of the toxic substance. Quantity or	er reactor. duct of the complex chemical reactions ninimized. ed feedstock, and is created as a e the use or creation of Indeno(1,2,3- eance at the facility?*

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	e targeted reduction	in creation of the toxic su	ubstance at the facility?*
		Quantity	Unit
×	No quantity target	or	
What is the	e targeted timeframe	e for this reduction?*	
X	No timel	line target or	years
Description	n of targets:		
leasons fo			
Why is the	toxic substance use	ed at the facility?:*	
As a by-pi	oduct		
Summariz	e why the toxic subs	stance is used at the facili	ity:**
Indeno(1,	2,3-c,d)pyrene used o meet market and c	at the facility is a compor contractual demands for t	nent of the purchased feedstock that is the refinery's products.
required to			
•	r Creation		
Reasons fo		eated at the facility?:*	
Reasons fo	toxic substance cre	eated at the facility?:*	
Reasons fo	toxic substance cre	eated at the facility?:*	
Reasons fo Why is the As a by-pr	toxic substance cre	eated at the facility?:* stance is created at the fa	acility:**
Reasons fo Why is the As a by-pi Summariz	toxic substance cre roduct e why the toxic subs	stance is created at the fa	duct of the complex chemical reactions
Reasons for Why is the As a by-property Summarize The Indendoccurring	toxic substance cre roduct e why the toxic subs to(1,2,3-c,d)pyrene c during thermal crack	stance is created at the fa created onsite is a byproc king, and its creation is m	duct of the complex chemical reactions
Reasons for Why is the As a by-property Summarize The Indense occurring the Reduction Research Control of the Reduction Research	toxic substance cre roduct e why the toxic subs o(1,2,3-c,d)pyrene of during thermal crack	stance is created at the fa created onsite is a byproc king, and its creation is m	duct of the complex chemical reactions inimized.

No reduction options were identified that are expected to reduce the use or creation of Indeno(1,2,3-c,d)pyrene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Indeno(1,2,3-c,d)pyrene at the Sarnia Refinery.

Indeno(1,2,3-c,d)pyrene 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 Indeno(1,2,3-c,d)pyrene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
NA -	10, Mercury (and its compounds)
	1ercury (and its compounds)
Sub	estances Section Data
	atement of Intent
<u> </u>	Jse
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No

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

se Targets What is the	e targeted reduction in the targeted reducti	Quantity or	Unit
			Unit
		n lise of the toyic slibsta	nce at the facility?*
	3		
by the refir	nery to run its base b	d. No reduction objective	s compounds) is also found in trace
Objectives Mercury (a	•	s naturally occurring in tr	ace quantities in the crude oil require
bjectives			
ectives, T	argets and Descr	ription	
Mercury (a	and its compounds) is	s not created at the facilit	у.
	on in the facility's TR at the facility:**	RA Plan for no intent to re	educe the creation of the toxic
	act statement of the in		ne facility's TRA Plan to reduce the
No			
	statement that the ow ubstance at the facilit		cility intends to reduce the creation of
reation			
Mercury (a refinery fee	and its compounds) is edstock, which are re	s naturally occurring in tra equired by the refinery to	ace quantities in crude oil and other run its base business.
	rith the crude oil and	purchased feed stocks.	clility and enters the refinery in small
amounts w		s currently used at the fa	cility and enters the refinery in small

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		Quantity	Unit
		Quantity	Offic
X	No quantity target	or	
What is the	targeted timeframe	for this reduction?*	
\boxtimes	No timeli	ne target or	years
Description	of targets:		
easons for	Use		
Why is the	toxic substance use	d at the facility?:*	
As an impu	ıritv	<u> </u>	
7.0 dir iii pe	arity		
•	•	ance is used at the facility	/:**
Summarize Mercury (a	why the toxic subst		ce quantities in crude oil and other
Summarize Mercury (a refinery fee	why the toxic subst nd its compounds) is edstock, which are re	s naturally occurring in tra	ce quantities in crude oil and other
Summarize Mercury (a refinery fee	why the toxic subst nd its compounds) is edstock, which are re	s naturally occurring in tra equired by the refinery to I	ce quantities in crude oil and other
Summarize Mercury (a refinery fee easons for Why is the	why the toxic subst nd its compounds) is edstock, which are re Creation toxic substance crea	s naturally occurring in tra equired by the refinery to refine the facility?:*	ce quantities in crude oil and other
Summarize Mercury (a refinery fee easons for Why is the This substa	why the toxic substand its compounds) is edstock, which are reconstituted toxic substance created ance is not created a	s naturally occurring in tra equired by the refinery to react atted at the facility?:*	ce quantities in crude oil and other run its base business.
Summarize Mercury (a refinery fee easons for Why is the This substa	why the toxic substand its compounds) is edstock, which are reconstituted toxic substance created ance is not created a	s naturally occurring in tra equired by the refinery to refine the facility?:*	ce quantities in crude oil and other run its base business.
Summarize Mercury (a refinery fee easons for Why is the This substa	why the toxic substand its compounds) is edstock, which are reconstituted toxic substance created ance is not created a	s naturally occurring in tra equired by the refinery to react atted at the facility?:*	ce quantities in crude oil and other run its base business.
Summarize Mercury (a refinery fee easons for Why is the This substa	why the toxic substand its compounds) is edstock, which are reconstituted toxic substance created ance is not created a	s naturally occurring in tra equired by the refinery to reated at the facility?:* at the facility tance is created at the facility	ce quantities in crude oil and other run its base business.
Summarize Mercury (a refinery fee easons for Why is the This substa Summarize	why the toxic substand its compounds) is edstock, which are reconstructed is not created as why the toxic substance substance substance is not created as why the toxic substance is not created as wh	s naturally occurring in tra equired by the refinery to reated at the facility?:* at the facility tance is created at the facility	ce quantities in crude oil and other run its base business.
Summarize Mercury (a refinery fee easons for Why is the This substa Summarize tic Reduct escription	why the toxic substand its compounds) is edstock, which are reconstructed in the toxic substance created as why the toxic substance is not created as why the toxic substance for Ir of the toxic reduction	s naturally occurring in tra equired by the refinery to reacted at the facility?:* at the facility tance is created at the facility mplementation	ce quantities in crude oil and other run its base business. ility:**

No technically and economically feasible options were identified that would be expected to reduce the use of Mercury (and its compounds) at the facility. Mercury (and its compounds) is not created at the facility.

Mercury (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business.

	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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
91-20	0-3, Naphthalene
91-20-3, N	laphthalene
Sub	stances Section Data
Sta	atement of Intent
	Jse
_	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No
	If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

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

Naphthalene is currently used at the facility and enters the refinery in purchased feed.

Naphthalene 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.

	statement that the own ubstance at the facility		ity intends to reduce the creation o
No			
	act statement of the integration that integrate a		facility's TRA Plan to reduce the
	son in the facility's TRA at the facility:**	A Plan for no intent to red	uce the creation of the toxic
	ene is created at the fa		its where thermal cracking occurs
and maid of			nplex chemical reactions occurring
The Naph	thalene created onsite	is a dybloductol lie com	
	thalene created onsite rmal cracking, and its		iplex chemical reactions occurring
during the		creation is minimized.	iplex chemical reactions occurring
during the	rmal cracking, and its	creation is minimized.	iplex chemical reactions occurring
during the	rmal cracking, and its Targets and Descri	creation is minimized.	iplex chemical reactions occurring
during the jectives, Dijectives Objectives Naphthale	rmal cracking, and its Targets and Descri in plan:* ene enters the facility ir	ption purchased feedstock, a	nd is created as a byproduct from n of Naphthalene were identified.
during the bjectives, Dbjectives Objectives Naphthale thermal cr	rmal cracking, and its Targets and Descri in plan:* ene enters the facility ir acking. No options to	ption purchased feedstock, a	nd is created as a byproduct from
during the pjectives, Discrives Objectives Naphthale thermal cr	rmal cracking, and its Targets and Descri in plan:* ene enters the facility ir acking. No options to	ption purchased feedstock, a	nd is created as a byproduct from n of Naphthalene were identified.
during the pjectives, Discrives Objectives Naphthale thermal cr	rmal cracking, and its Targets and Descri in plan:* ene enters the facility ir acking. No options to	ption purchased feedstock, an reduce the use or creation	nd is created as a byproduct from n of Naphthalene were identified.
during the pjectives, Discrives Objectives Naphthale thermal cr	rmal cracking, and its Targets and Descri in plan:* ene enters the facility ir acking. No options to	ption n purchased feedstock, and reduce the use or creation use of the toxic substance.	nd is created as a byproduct from n of Naphthalene were identified.
during the bjectives, Dbjectives Objectives Naphthale thermal cr Use Target: What is the	rmal cracking, and its Targets and Descri in plan:* The enters the facility in acking. No options to set targeted reduction in the No quantity	n purchased feedstock, and reduce the use or creation use of the toxic substant Quantity	nd is created as a byproduct from n of Naphthalene were identified.

		Quantity	Unit
\boxtimes	No quantity target	or	
What is the	e targeted timeframe	for this reduction?*	
\boxtimes	No timeli	ne target or	years
Description	n of targets:		
easons fo	r Use		
Why is the	toxic substance use	d at the facility?:*	
As a by-pr	oduct		
		ance is used at the facility:	**
Summarize	e why the toxic subst	•	rchased feedstock that is required to
Summarize	e why the toxic subst ene used at the facility ket and contractual do	y is a component of the pu	rchased feedstock that is required to
Summarize Naphthale meet mark	e why the toxic subst ene used at the facility ket and contractual do	y is a component of the pure emands for the refinery's p	rchased feedstock that is required to
Summarize Naphthale meet mark	e why the toxic substene used at the facility ket and contractual don't creation toxic substance creation	y is a component of the pure emands for the refinery's p	rchased feedstock that is required to
Summarize Naphthale meet mark easons fo Why is the As a by-pr	e why the toxic substene used at the facility ket and contractual dear Creation toxic substance created	y is a component of the pure emands for the refinery's p	rchased feedstock that is required to roducts.
Summarized Naphthale meet mark teasons for Why is the As a by-process. Summarized The Naphthale Summarized The Naphthale Summarized The Naphthale Summarized The Naphthale Summarized Summarized The Naphthale Summarized Su	e why the toxic substance used at the facility ket and contractual donor creation toxic substance created why the toxic substance substance created onsit	y is a component of the puremands for the refinery's pated at the facility?:*	rchased feedstock that is required to roducts.
Summarized Naphthale meet mark teasons for Why is the As a by-process. Summarized The Naphthale the	e why the toxic substance used at the facility ket and contractual donor creation toxic substance created why the toxic substance substance created onsit	y is a component of the puremands for the refinery's parted at the facility?:* ance is created at the facilities is a byproduct of the construction is minimized.	rchased feedstock that is required to roducts.
Summarized Naphthale meet mark teasons for Why is the As a by-process. The Naphthale wic Reductions the state of the state	e why the toxic substance used at the facility ket and contractual description. Toxic substance created why the toxic substance thalene created onsite thalene cracking, and its extion Options for In	y is a component of the puremands for the refinery's parted at the facility?:* ance is created at the facilities is a byproduct of the construction is minimized.	rchased feedstock that is required to roducts. ity:** nplex chemical reactions occurring
Summarized Naphthale meet mark teasons for Why is the As a by-process Summarized The Naphthale the N	e why the toxic substance used at the facility ket and contractual description. Toxic substance created why the toxic substance thalene created onsite thalene cracking, and its ction Options for Info the toxic reduction.	y is a component of the puremands for the refinery's parted at the facility?:* ance is created at the facilities is a byproduct of the conscreation is minimized.	rchased feedstock that is required to roducts. ity:** nplex chemical reactions occurring mented:

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

Naphthalene 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 Naphthalene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
NA -	11, Nickel (and its compounds)
NA - 11, N	ickel (and its compounds)
Sub	stances Section Data
	atement of Intent
	Jse
<u></u>	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No

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

.	of targets:		
\boxtimes	No timeline t	arget ^{or}	years
What is the	targeted timeframe for	this reduction?*	
X	No quantity ^O target	r	
		Quantity	Unit
What is the	targeted reduction in us	se of the toxic substance	•
e Targets			
the refinery	to run its base busines	rally occurring in trace on s. Nickel (and its compous No reduction objectives	quantities in the crude oil required ounds) is also found in trace have been identified.
Objectives i	•		
ojectives			
ectives, T	argets and Descripti	ion	
Nickel (and	its compounds) is not of	created at the facility.	
	at the facility:**		
f 'no' reasc	on in the facility's TRA F	Plan for no intent to redu	ice the creation of the toxic
		-	
	ct statement of the inter he toxic substance at th		facility's TRA Plan to reduce the
No			
	atement that the owner bstance at the facility?:*		ty intends to reduce the creation
eation			
refinery fee		red by the refinery to rul	
	•		quantities in crude oil and other
	th the crude oil and pur		,
	its compounds) is curre	ently used at the facility	and enters the refinery in small

vviiat is the	targeted reduction in t	creation of the toxic sub	•
		Quantity	Unit
\boxtimes	No quantity target	or	
What is the	e targeted timeframe fo	r this reduction?*	
X	No timeline	target or	years
Description	of targets:		
Reasons for	Use		
Why is the	toxic substance used a	at the facility?:*	
As an impu	urity		
	·		
Summarize	e why the toxic substan	ce is used at the facility	·**
		turally occurring in trace uired by the refinery to r	e quantities in crude oil and other run its base business.
Reasons for	•		
	toxic substance create	nd at the facility?:*	
_		•	
This substa	ance is not created at t	ne facility	
Summarize	why the toxic substan	ce is created at the faci	ility:**
vio Poduo	tion Ontions for Imp	lomontation	
	tion Options for Imp	option(s) to be imple	mented:
		n will be implemented?:	
	nation that no option	T will be implemented:.	
Yes			

No technically and economically feasible options were identified that would be expected to reduce the use of Nickel (and its compounds) at the facility. Nickel (and its compounds) is not created at the facility.

Nickel (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business.

	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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
85-01	-8, Phenanthrene
85-01-8, Ph	nenanthrene
Subs	stances Section Data
Sta	atement of Intent
U	lse
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No
	If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

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

Phenanthrene is currently used at the facility and enters the refinery in purchased feed.

Phenanthrene 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.

the toxic s	ubstance at the facility	y'?: *		
No				
If 'yes', exacreation of	act statement of the in the toxic substance a	ntent that is included in the at the facility:**	facility's TRA Plan to reduce the	Э
	son in the facility's TR at the facility:**	A Plan for no intent to red	uce the creation of the toxic	
Phenanthi	rene is created at the identified in its reactions in the identified in its reactions.	facility in the conversion unit and the coker reactor.	nits where thermal cracking occu	urs
	anthrono croated ansi	ite is a byproduct of the co	mplex chemical reactions occurr	
The Phena	anunche Gealeu onsi	, p		rinç
The Phena during the	rmal cracking, and its	creation is minimized.	•	rin
during the	rmal cracking, and its	creation is minimized.	•	rin
during the	rmal cracking, and its	creation is minimized.	•	ring
during the ectives, ⁻ bjectives	rmal cracking, and its	creation is minimized.		rin
during the ectives, bjectives Objectives Phenanthi	rmal cracking, and its Targets and Descri in plan:* rene enters the facility	iption iption in purchased feedstock, a	and is created as a byproduct fro n of Phenanthrene were identifie	om
during the ectives, bjectives Objectives Phenanthi thermal cr	Targets and Description in plan:* rene enters the facility acking. No options to	iption iption in purchased feedstock, a	and is created as a byproduct fro	om
ectives, bjectives Objectives Phenanthithermal cr	rmal cracking, and its Targets and Description in plan:* rene enters the facility racking. No options to	iption iption in purchased feedstock, a reduce the use or creation	and is created as a byproduct fro n of Phenanthrene were identifie	om
ectives, bjectives Objectives Phenanthithermal cr	rmal cracking, and its Targets and Description in plan:* rene enters the facility racking. No options to	iption iption in purchased feedstock, a	and is created as a byproduct fro n of Phenanthrene were identifie	om
ectives, bjectives Objectives Phenanthithermal cr	rmal cracking, and its Fargets and Description in plan:* rene enters the facility acking. No options to set targeted reduction in	iption in purchased feedstock, as reduce the use or creation	and is created as a byproduct fro n of Phenanthrene were identifie se at the facility?*	om
ectives, bjectives Objectives Phenanthithermal cr	rmal cracking, and its Targets and Description in plan:* rene enters the facility racking. No options to	iption in purchased feedstock, a reduce the use or creation use of the toxic substance Quantity	and is created as a byproduct fro n of Phenanthrene were identifie se at the facility?*	om
during the ectives, bjectives Objectives Phenanthithermal cr se Targets What is the	rmal cracking, and its Targets and Description in plan:* rene enters the facility acking. No options to set targeted reduction in the control of the cont	iption in purchased feedstock, a reduce the use or creation quantity or	and is created as a byproduct fro n of Phenanthrene were identifie se at the facility?*	om

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		Quantity	Unit
\boxtimes	No quantity target	or	
What is the	e targeted timeframe fo	or this reduction?*	
\boxtimes	No timeline	e target or	years
Descriptior	n of targets:		
easons fo	r Use		
	toxic substance used	at the facility?:*	
As a by-pr			
Summarize	e why the toxic substa	nce is used at the facility	.**
			ourchased feedstock that is required products.
meet mark	ket and contractual der	y is a component of the p mands for the refinery's p	
meet mark	ket and contractual der r Creation	mands for the refinery's p	
meet markeasons fo	r Creation toxic substance create	mands for the refinery's p	
meet mark	r Creation toxic substance create	mands for the refinery's p	
meet mark easons fo Why is the As a by-pr	cet and contractual der r Creation toxic substance create roduct	mands for the refinery's p	oroducts.
meet mark easons fo Why is the As a by-pr Summarize The Phena	r Creation toxic substance createred why the toxic substance	mands for the refinery's ped at the facility?:* nce is created at the facility at the facilit	lity:**
meet mark easons fo Why is the As a by-pr Summarize The Phena during the	r Creation toxic substance create coduct why the toxic substance anthrene created onsite rmal cracking, and its	mands for the refinery's ped at the facility?:* nce is created at the facilities a byproduct of the concreation is minimized.	oroducts.
meet mark easons fo Why is the As a by-pr Summarize The Phena during the ic Reduc	r Creation toxic substance create roduct why the toxic substance anthrene created onsite rmal cracking, and its etion Options for Im	mands for the refinery's ped at the facility?:* nce is created at the facilities a byproduct of the concreation is minimized.	lity:** omplex chemical reactions occurring
meet mark easons fo Why is the As a by-pr Summarize The Phena during the ic Reduct escription	r Creation toxic substance create roduct why the toxic substance anthrene created onsit rmal cracking, and its stion Options for Im of the toxic reduction	mands for the refinery's ped at the facility?:* nce is created at the facilities is a byproduct of the concreation is minimized.	lity:** omplex chemical reactions occurring mented:

Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your facility is not implementing an option.

Explanation of the reasons why no option will be implemented:**

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

Phenanthrene 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 Phenanthrene 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
108-9	95-2, Phenol (and its salts)
-95-2, F	Phenol (and its salts)
Sub	stances Section Data
	atement of Intent
	Jse
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No

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

108-95-2,

If 'no', reas the facility:		an for no intent to	reduce the use of the toxic substance at
	unts Phenol (and its salts)		on of lubricants on site. Currently, only as a component in some finished
Creation			
	statement that the owner outsite owner of the stance at the facility?:*	or operator of the f	acility intends to reduce the creation of
No			
	act statement of the intent the toxic substance at the		the facility's TRA Plan to reduce the
	son in the facility's TRA Pla at the facility:**	an for no intent to	reduce the creation of the toxic
Phenol (ar	nd its salts) is not created	at the facility.	
oiectives. 7	Targets and Description	on	
Objectives			
Objectives	in plan:*		
	finery has already elimina Phenol (and its salts).	ted the primary us	e of Phenol (and its salts) and does not
Jse Targets	8		
	e targeted reduction in use	of the toxic subst	ance at the facility?*
		Quantity	Unit
X	No quantity or target		
What is the	e targeted timeframe for th	is reduction?*	
X	No timeline ta	rget or	years
Description	n of targets:		
Creation Ta			
What is the	e targeted reduction in cre	ation of the toxic s	substance at the facility?*
		Quantity	Unit

\boxtimes	No quantity or target
What is the	e targeted timeframe for this reduction?*
×	No timeline target or years
Description	n of targets:
Reasons fo	r Use
•	toxic substance used at the facility?:*
As a physi	ical or chemical processing aid
Summarize	e why the toxic substance is used at the facility:**
Phenol (ar trace amo product ac	nd its salts) is no longer used in the production of lubricants on site. Currently, only unts Phenol (and its salts) enter the refinery as a component in some finished dditives.
Reasons fo	r Creation
Why is the	toxic substance created at the facility?:*
This subst	ance is not created at the facility
Summarize	e why the toxic substance is created at the facility:**
Toxic Reduc	tion Options for Implementation
	of the toxic reduction option(s) to be implemented:
Is there a	statement that no option will be implemented?:*
Yes	
Substance reformulati is not imple	vered "No" to this question, please add the option(s) under the appropriate Toxic Reduction Categories (e.g. Materials or feedstock substitution, Product design or on, etc.). If you answered "Yes" please provide an explanation below why your faci ementing an option. n of the reasons why no option will be implemented:**
Sarnia refi	nery has already eliminated the primary use of Phenol (and its salts).
Phenol (ar facility.	nd its salts) used onsite is found in additives of finished product produced by the
Materials o	or feedstock substitution
Product de	esign 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 why the listed options were chosen for implementation:
	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
7004	
	93-9, Sulphuric acid
	Sulphuric acid
Subs	stances Section Data
Sta	tement of Intent
<u>U</u>	se
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No
	If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**
	If 'no', reason in the facility's TRA Plan for no intent to reduce the use of the toxic substance at the facility:**
	Sulphuric acid is not used at the Sarnia Refinery.
С	reation
	Is there a statement that the owner or operator of the facility intends to reduce the creation of

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the toxic su	bstance at the facility?:	•	
No			
If 'yes', exa creation of	ct statement of the inter the toxic substance at th	nt that is included in the facility:**	ne facility's TRA Plan to reduce the
	on in the facility's TRA F at the facility:**	Plan for no intent to re	duce the creation of the toxic
is present.	acid is created at the fac The combustion of cok urces of Sulphuric acid	e from the fluid cataly	combustion processes where sulphur tic cracking unit and the coker are the
bjectives, T	argets and Descript	ion	
Objectives			
Objectives	in plan:*		
in the comi emissions	ing years. These project objectives not directly respond to the project of the pr	ts are being evaluated elated to Toxic Substa	ce fugitive emissions of Sulphuric acid d in support of environmental ince Reductions. Sarnia Refinery does ions to reduce Sulphuric acid creation
Use Targets	i		
	targeted reduction in us	se of the toxic substar	nce at the facility?*
		Quantity	Unit
\boxtimes	No quantity ^o target	r	
What is the	targeted timeframe for	this reduction?*	
vinacio ino	targetea amename re-	ano roadonom	
\boxtimes	No timeline t	arget ^{or}	years
Description	of targets:		
Creation Tai	rgets		
What is the	targeted reduction in cr	eation of the toxic sub	ostance at the facility?*
		Quantity	Unit
\boxtimes	No quantity of target	r	
What is the	targeted timeframe for	this reduction?*	

X	No timeline target	or		years	
Description of	of targets:				
Reasons for U	Jse				
Why is the to	xic substance used at the fac	cility?:*			
This substan	nce is not used at the facility				
Summarize v	why the toxic substance is use	ed at th	ne facility:**		
Reasons for C	Creation				
Why is the to	xic substance created at the	facility	?:*		
As a by-prod	luct				
Summarize v	vhy the toxic substance is cre	ated a	t the facility:**		
Sulphuric ac is present.	id is created at the facility prin	narily	through combus	stion processes where sulp	phur
oxic Reductio	on Options for Implement	ation			
Description of	the toxic reduction option(s) to b	e implemente	d:	
Is there a sta	tement that no option will be	implen	nented?:*		
Yes					
Substance R reformulation is not implem	red "No" to this question, plea eduction Categories (e.g. Ma , etc.). If you answered "Yes' nenting an option. of the reasons why no option	iterials ' pleas	or feedstock su e provide an ex	ibstitution, Product design planation below why your	or
No technical reduce the c	ly and economically feasible reation of Sulphuric acid at the	options ne facil	s were identified ity. Sulphuric a	I that would be expected to cid is not used at the facili	o ty.
Materials or f	eedstock substitution				
Product design	gn or reformulation				
Equipment of	r process modifications				
Spill or leak p	prevention				
On-site reuse	e, recycling or recovery				
Improved inv	entory management or purch	asing	techniques		
Good operate	or practice or training				
Rationale for	why the listed options were o	choser	for implementa	ation:	

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	General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:
	License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*
	TSRP0071
	What version of the plan is this summary based on?:*
	New Plan
744	0-62-2, Vanadium (and its compounds)
	2, Vanadium (and its compounds)
Su	bstances Section Data
5	statement of Intent
	Use
	Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
	No
	If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**
	If 'no', reason in the facility's TRA Plan for no intent to reduce the use of the toxic substance at the facility:**
	Vanadium (and its compounds) is currently used at the facility and enters the refinery in small amounts with the crude oil and purchased feed stocks.
	Vanadium (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.
	Creation
	Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

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variaululli	(and its compounds) is not created at the facil	ity.
iootiyoo T	Forgote and Dose	rintian	•
)bjectives, i	argets and Desc	прион	
Objectives	in nlan·*		
Vanadium required by	and its compounds y the refinery to run i	its base business. Vanadi	race quantities in the crude oil um (and its compounds) is also four bjectives have been identified.
lse Targets	3		
		in use of the toxic substan	ce at the facility?*
		Quantity	Unit
\boxtimes	No quantity target	or	
What is the	e targeted timeframe	for this reduction?*	
×	No timeli	ine target or	years
			youre
Description	of targets:	_	youro
Description	<u> </u>	_	youro
reation Ta	rgets	in creation of the toxic sub	
reation Ta	rgets	in creation of the toxic sub Quantity	
reation Ta	rgets		stance at the facility?*
reation Ta What is the	rgets e targeted reduction No quantity	Quantity or	stance at the facility?*
reation Ta What is the	rgets e targeted reduction No quantity target e targeted timeframe	Quantity or	stance at the facility?*

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

Summarize why the toxic substance is used at the facility:** Vanadium (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business. Reasons for Creation Why is the toxic substance created at the facility?:* This substance is not created at the facility Summarize why the toxic substance is created at the facility:** Oxic Reduction Options for Implementation Description of the toxic reduction option(s) to be implemented: Is there a statement that no option will be implemented?:* Yes If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your fac is not implementing an option. Explanation of the reasons why no option will be implemented:** No technically and economically feasible options were identified that would be expected to reduce the use of Vanadium (and its compounds) at the facility. Vanadium (and its compounds) is not created at the facility. Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business. 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 why the listed options were chosen for implementation:	As an impurity	
refinery feedstock, which are required by the refinery to run its base business. Reasons for Creation Why is the toxic substance created at the facility?:* This substance is not created at the facility Summarize why the toxic substance is created at the facility:** Description Options for Implementation Description of the toxic reduction option(s) to be implemented: Is there a statement that no option will be implemented?:* Yes If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your fac is not implementing an option. Explanation of the reasons why no option will be implemented:** No technically and economically feasible options were identified that would be expected to reduce the use of Vanadium (and its compounds) at the facility. Vanadium (and its compounds) is not created at the facility. Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business. 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	Summarize why the toxic substance is used at the facility:**	
Why is the toxic substance created at the facility?:* This substance is not created at the facility Summarize why the toxic substance is created at the facility:** Exercise Reduction Options for Implementation Description of the toxic reduction option(s) to be implemented: Is there a statement that no option will be implemented?:* Yes If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your fac is not implementing an option. Explanation of the reasons why no option will be implemented:** No technically and economically feasible options were identified that would be expected to reduce the use of Vanadium (and its compounds) at the facility. Vanadium (and its compounds) is not created at the facility. Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business. 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	Vanadium (and its compounds) is naturally occurring in trace quantities in crefinery feedstock, which are required by the refinery to run its base busine	crude oil and other ess.
This substance is not created at the facility Summarize why the toxic substance is created at the facility:** Description Options for Implementation Description of the toxic reduction option(s) to be implemented: Is there a statement that no option will be implemented?:* Yes If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your fac is not implementing an option. Explanation of the reasons why no option will be implemented:** No technically and economically feasible options were identified that would be expected to reduce the use of Vanadium (and its compounds) at the facility. Vanadium (and its compounds) is not created at the facility. Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business. 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	Reasons for Creation	
Summarize why the toxic substance is created at the facility:** Description of the toxic reduction option(s) to be implemented: Is there a statement that no option will be implemented?:* Yes If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your fac is not implementing an option. Explanation of the reasons why no option will be implemented:** No technically and economically feasible options were identified that would be expected to reduce the use of Vanadium (and its compounds) at the facility. Vanadium (and its compounds) is not created at the facility. Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business. 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	Why is the toxic substance created at the facility?:*	
oxic Reduction Options for Implementation Description of the toxic reduction option(s) to be implemented: Is there a statement that no option will be implemented?:* Yes If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your fac is not implementing an option. Explanation of the reasons why no option will be implemented:** No technically and economically feasible options were identified that would be expected to reduce the use of Vanadium (and its compounds) at the facility. Vanadium (and its compounds) is not created at the facility. Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business. 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	This substance is not created at the facility	
Description of the toxic reduction option(s) to be implemented: Is there a statement that no option will be implemented?:* Yes If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your fac is not implementing an option. Explanation of the reasons why no option will be implemented:** No technically and economically feasible options were identified that would be expected to reduce the use of Vanadium (and its compounds) at the facility. Vanadium (and its compounds) is not created at the facility. Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business. 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	Summarize why the toxic substance is created at the facility:**	
Description of the toxic reduction option(s) to be implemented: Is there a statement that no option will be implemented?:* Yes If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your fac is not implementing an option. Explanation of the reasons why no option will be implemented:** No technically and economically feasible options were identified that would be expected to reduce the use of Vanadium (and its compounds) at the facility. Vanadium (and its compounds) is not created at the facility. Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business. 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		
If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your fac is not implementing an option. Explanation of the reasons why no option will be implemented:** No technically and economically feasible options were identified that would be expected to reduce the use of Vanadium (and its compounds) at the facility. Vanadium (and its compounds) is not created at the facility. Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business. 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	oxic Reduction Options for Implementation	
If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your fac is not implementing an option. Explanation of the reasons why no option will be implemented:** No technically and economically feasible options were identified that would be expected to reduce the use of Vanadium (and its compounds) at the facility. Vanadium (and its compounds) is not created at the facility. Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business. 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	Description of the toxic reduction option(s) to be implemented:	
If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your fac is not implementing an option. Explanation of the reasons why no option will be implemented:** No technically and economically feasible options were identified that would be expected to reduce the use of Vanadium (and its compounds) at the facility. Vanadium (and its compounds) is not created at the facility. Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business. 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	Is there a statement that no option will be implemented?:*	
Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your fac is not implementing an option. Explanation of the reasons why no option will be implemented:** No technically and economically feasible options were identified that would be expected to reduce the use of Vanadium (and its compounds) at the facility. Vanadium (and its compounds) is not created at the facility. Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business. 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	Yes	
Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business. 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	reformulation, etc.). If you answered "Yes" please provide an explanation be is not implementing an option. Explanation of the reasons why no option will be implemented:** No technically and economically feasible options were identified that would reduce the use of Vanadium (and its compounds) at the facility. Vanadium	elow why your facilit
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	Vanadium (and its compounds) is naturally occurring in trace quantities in t	he crude oil that is
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	Materials or feedstock substitution	
Spill or leak prevention On-site reuse, recycling or recovery Improved inventory management or purchasing techniques Good operator practice or training	Product design or reformulation	
On-site reuse, recycling or recovery Improved inventory management or purchasing techniques Good operator practice or training	Equipment or process modifications	
Improved inventory management or purchasing techniques Good operator practice or training	Spill or leak prevention	
Good operator practice or training	On-site reuse, recycling or recovery	
<u> </u>	Improved inventory management or purchasing techniques	
Rationale for why the listed options were chosen for implementation:	Good operator practice or training	
	Rationale for why the listed options were chosen for implementation:	
reduce the use and creation of the toxic substance at the facility that are outside of the plan:	reduce the use and creation of the toxic substance at the facility that are ou	itside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the

toxic substance reductio	plan for this substance	(format TSRPXXXX):*

TSRP0071

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

TSRP0071

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

New Plan

NA - 14, Zinc (and its compounds)

NA - 14, Zinc (and its compounds)

Substances Section Data

Statement of Intent

Use

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

No

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

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

Zinc (and its compounds) is currently used at the facility and enters the refinery in small amounts with the crude oil and purchased feed stocks. Additionally Zinc (and its compounds) enters the site as a finished product blending additive used at the Lubes Marketing Blending Packaging and Shipping (BP&S) facilities.

Zinc (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business. The Zinc containing additive used at BP&S is required to ensure finished product specifications are achieved, and no acceptable commercial alternatives were identified.

Creation

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

No

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

If 'no', reason in the facility's TRA Plan for no intent to reduce the creation of the toxic

substance at	the facility:**		
Zinc (and its	compounds) is not crea	ted at the facility	y.
Obiectives. Ta	rgets and Descriptio	n	
Objectives			
Objectives in	plan:*		
the refinery t in the purcha achieve finis	o run its base business. ased feed. Additionally,	Zinc (and its co the Zinc (and its	ace quantities in the crude oil required by ompounds) is also found in trace quantities s compounds) used at BP&S is required to reduction objectives have been identified.
Use Targets		- f (b -)	
vvnat is the ta	argeted reduction in use	Of the toxic sub	Unit
\boxtimes	No quantity or target		
What is the ta	argeted timeframe for th	is reduction?*	
×	No timeline tar	get or	years
Description of	of targets:		
Creation Targ			
What is the to	argeted reduction in crea	ation of the toxic	c substance at the facility?*
		Quantity	Unit
X	No quantity or target		
What is the ta	argeted timeframe for th	is reduction?*	
		or Or	
\boxtimes	No timeline tar	get	years
Description of	of targets:		
Reasons for U	Jse		
	xic substance used at th	ne facility?:*	
As a formula	ition component		

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

Zinc (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business. Additionally a Zinc containing additive is used at BP&S to ensure finished product specifications are achieved.

Reasons for	Creation
Why is the t	toxic substance created at the facility?:*
This substa	ance is not created at the facility
Summarize	why the toxic substance is created at the facility:**
xic Reduct	ion Options for Implementation
Description of	of the toxic reduction option(s) to be implemented:
Is there a st	tatement that no option will be implemented?:*
Yes	
Substance I reformulation is not imple	ered "No" to this question, please add the option(s) under the appropriate Toxic Reduction Categories (e.g. Materials or feedstock substitution, Product design or on, etc.). If you answered "Yes" please provide an explanation below why your facilit menting an option. In of the reasons why no option will be implemented:**
No technica reduce the created at t	ally and economically feasible options were identified that would be expected to use of Zinc (and its compounds) at the facility. Zinc (and its compounds) is not the facility.
required by required to	s compounds) is naturally occurring in trace quantities in the crude oil that is the refinery to run its base business. The Zinc containing additive used at BP&S is ensure finished product specifications are achieved, and no acceptable commercials were identified.
Materials or	r feedstock substitution
Product des	sign or reformulation
Equipment	or process modifications
Spill or leak	prevention
On-site reus	se, recycling or recovery
Improved in	ventory management or purchasing techniques
Good opera	ator practice or training
Rationale fo	or why the listed options were chosen for implementation:
General des	scription of any actions undertaken by the owner and operator of the facility to use and creation of the toxic substance at the facility that are outside of the plan:

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

TSRP0071	

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

TSRP0071

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

New Plan

Highest Ranking Employee
As of 12/14/2012, 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.
• 92-52-4 Biphenyl
Bu for 12/14/2012
Brian Fairley Date Refinery Manager, Sarnia Refinery
,
Toxic Substance Reduction Planner
As of 12/11/2012, 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</i> Act, 2009 that are set out in the plan dated and that the plan complies with tha
Act and Ontario Regulation 455/09 (General) made under that Act.
• 92-52-4 Biphenyl
Sut Mar. TSRP0071 12/11/2012
Scott Manser License Number Date
Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• 71-43-2 Benzene
Brian Fairley Refinery Manager, Sarnia Refinery
As of 12/11/2012, 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 12/11/2012 and that the plan complies with the Act and Ontario Regulation 455/09 (General) made under that Act.
• 71-43-2 Benzene
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• 100-41-4 Ethylbenzene
Bus for 12/14/2012
Brian Fairley Date Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/11/26/2, 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 $12/11/2012$ and that the plan complies with tha Act and Ontario Regulation 455/09 (General) made under that Act.
• 100-41-4 Ethylbenzene
l . M
/pol //n. 13RP007/ 12/11/2012
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• 108-88-3 Toluene
Bin fa 9 12/14/2012
Brian Fairley / Date Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/11/2012, 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 12/1/20/2 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
• 108-88-3 Toluene
Ist Man 13RP 0071 12/11/2012
Scott Manser License Number Date
Toxic Substance Reduction Planner

Highest Ranking Employee
As of 14/2012, 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.
• 1330-20-7 Xylene (all isomers)
Brian Fairley Refinery Manager, Sarmia Refinery 12/14/2012 Date
Toxic Substance Reduction Planner
As of 12/11/26/2, 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 Toxics Reduction Act, 2009 that are set out in the plan dated 12/11/2012 and that the plan complies with tha Act and Ontario Regulation 455/09 (General) made under that Act.
• 1330-20-7 Xylene (all isomers)
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
N/A Cadmium (and its compounds)
Brian Fairley Date
Brian Fairley Date
Refinery Manager, Sarnia Refinery
As of 12/11/2012, 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 Toxics Reduction Act, 2009 that are set out in the plan dated 12/11/20/2 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
N/A Cadmium (and its compounds)
Ast Man. 15RP 6071 12/11/2012 Scott Manser License Number Date
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee
As of 2012/14/12, 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.
• N/A Lead (and its compounds)
Brian Fairley Refinery Manager, Sarnia Refinery 12/14/2012 Date
Toxic Substance Reduction Planner
As of 12 (11/2018, 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 12/1/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
N/A Lead (and its compounds)
Sist Ma 15RP6071 12/11/2012
Scott Manser License Number Date
Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• N/A Mercury (and its compounds)
Bu Lord 12/14/2012 Date Date
Briain Fairley / Date
Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12 /11/2012, 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 <i>Toxics Reduction</i> Act, 2009 that are set out in the plan dated 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
N/A Mercury (and its compounds)
1 Am
Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• N/A Nickel (and its compounds)
Brian Fairley Date
Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/11/20/2, 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 $\frac{12/11/2012}{12/12012}$ and that the plan complies with that
Act and Ontario Regulation 455/09 (General) made under that Act.
N/A Nickel (and its compounds)
let Man, 15270071 12/11/2012
Scott Manser License Number Date
Toxic Substance Reduction Planner

Tignesi Kanking Employee
As of 2012/14/12, 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.
• N/A Selenium (and its compounds)
Brian Fairley Refinery Manager, Sarnia Refinery 12/14/2012 Date
Toxic Substance Reduction Planner
As of 12/11/2018, 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 12/11/20/2 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
N/A Selenium (and its compounds)
15RP0071 12/11/2012 Scott Manser License Number Date
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• 7440-62-2 Vanadium (and its compounds)
Brian Fairley Date
Refinery Manager, Sarnia Refinery
As of 12/11/20/2, 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 Toxics Reduction
Act, 2009 that are set out in the plan dated $12/11/2012$ and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
• 7440-62-2 Vanadium (and its compounds)
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• N/A Zinc (and its compounds)
Brian Fairley Refinery Manager, Sarnia Refinery 12/14/2012 Date
Toxic Substance Reduction Planner
As of 12/11/2012, 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 Toxics Reduction Act, 2009 that are set out in the plan dated 12/11/20/2 and that the plan complies with the Act and Ontario Regulation 455/09 (General) made under that Act.
• N/A Zinc (and its compounds)
13R9607/ 12/11/2012 Scott Manser License Number Date
Toxic Substance Reduction Planner

Tr. L. of B. L. of F. of L.
Highest Ranking Employee
As of 12/14/2012, 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.
• 67-56-1, Methanol
Brian Fairley Refinery Manager, Sarnia Refinery 12 /14/2012 Date
Toxic Substance Reduction Planner
As of 12/11/2012, 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 <i>Toxics Reduction</i>
Act, 2009 that are set out in the plan dated $12/11/20/2$ and that the plan complies with the Act and Ontario Regulation 455/09 (General) made under that Act.
• 67-56-1, Methanol
Sot Man. 13RP6071 12/11/2012
Scott Manser License Number Date
Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• 1332-21-4 Asbestos (friable form only)
Brian Fairley Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12 /11/2012, 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 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
• 1332-21-4 Asbestos (friable form only)
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• 108-95-2 Phenol (and its salts)
Buin Fairley 12/14/2012
Brian Fairley Date
Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/11/2012, 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 <i>Toxics Reduction</i>
Act, 2009 that are set out in the plan dated $12/11/20/2$ and that the plan complies with the
Act and Ontario Regulation 455/09 (General) made under that Act.
• 108-95-2 Phenol (and its salts)
15RP007/ 12/11/2012
Scott Manser License Number Date Toxic Substance Reduction Planner
LOYIC MUNIPOCE REGUCTION PIANNET

Highest Ranking Employee
As of $12/14/2012$, 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.
• 50-00-0 Formaldehyde
Bus fairley Date 12/14/2012
Briain Fairley / Bate
Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/11/2012, 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 Toxics Reduction
Act, 2009 that are set out in the plan dated $12/11/20/2$ and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
• 50-00-0 Formaldehyde
30-00-0 I offiniately ac
15RP 0071 12/11/2012 Scott Manser License Number Date
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee			
As of 12/14/2012, I, B	rian Fairley, certify that I	I have read the toxic substance	
reduction plan for the toxic substance	e referred to below and an rate and complies with the	m familiar with its contents, and to my e Toxics Reduction Act, 2009 and Ontario	0
• 7664-93-9, Sulphuric Acid	I		
Buntaly	2012,	114/12	
Brian Fairley Refinery Manager, Sarnia Refinery	Date		
Toxic Substance Reduction Planner			
As of 12/11/26/2, I,, I,	Scott Manser certify that	nt I am familiar with the processes	
at Imperial Oil's Sarnia Refinery that	use or create the toxic su	ubstances referred to below, that I agree	
with the estimates referred to in subplace 2000 that are set out in the plan.	aragraphs 7 iii, iv and v o	of subsection 4 (1) of the <i>Toxics Reduction</i> and that the plan complies with the	n
Act and Ontario Regulation 455/09 (6	General) made under that	Act.	Ia
• 7664-93-9, Sulphuric Acid			
A Manser	13RP 007/ License Number		
Toxic Substance Reduction Planner	Dicense Number	Date	

Highest Ranking Employee		
As of 12/14/12, I, Brian F	airley, certify that I h	ave read the toxic substance
reduction plan for the toxic substance refer knowledge the plan is factually accurate an Regulation 455/09 (General) made under the	d complies with the I	•
• 194-59-2 7H-Dibenzo(c,g)carba	zole	
Buin tang	12 /14 / Date	12_
Brian Fairley	Date	
Refinery Manager, Sarnia Refinery		
Toxic Substance Reduction Planner		
As of 12/11/26/2, I, Scott	Manser certify that I	am familiar with the processes
Date Planner at Imperial Oil's Sarnia Refinery that use o		
with the estimates referred to in subparagra		
Act, 2009 that are set out in the plan dated	12/11/2012	and that the plan complies with tha
Act and Ontario Regulation 455/09 (Gener	al) made under that A	ct.
• 194-59-2 7H-Dibenzo(c,g)carba	zole	
	20071	12/11/2012
	cense Number	Date
Toxic Substance Reduction Planner		

Highest Ranking Employee	
As of 12/14/2012, I, Brian F	Fairley, certify that I have read the toxic substance
reduction plan for the toxic substance refer	rred to below and am familiar with its contents, and to my ad complies with the <i>Toxics Reduction Act</i> , 2009 and Ontario hat Act.
• 83-32-9 Acenaphthene	
Bus for T	12/14/2012
Brian Fairley	Date
Refinery Manager, Sarnia Refinery	
Toxic Substance Reduction Planner As of 12 /11/2012, I, Scott	Manser certify that I am familiar with the processes
	Name or create the toxic substances referred to below, that I agree
with the estimates referred to in subparagra	aphs 7 iii, iv and v of subsection 4 (1) of the Toxics Reduction
Act, 2009 that are set out in the plan dated Act and Ontario Regulation 455/09 (Gener	and that the plan complies with that al) made under that Act.
• 83-32-9 Acenaphthene	
Sed Mm. TS	RP 0071 12/11/2012
	icense Number Date
Toxic Substance Reduction Planner	

Highest Ranking Employee
As of 12/14/2012, 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.
• 120-12-7 Anthracene
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/11/2012, 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
• 120-12-7 Anthracene
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• 56-55-3 Benzo(a)anthracene
Bin Forty 12/14/2012
Brian Fairley Date
Refinery Manager, Sarnia Refinery
As of 12/11/2012, 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
• 56-55-3 Benzo(a)anthracene
Shot Man. 15870071 12/11/2012
Scott Manser License Number Date
Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• 218-01-9 Benzo(a)phenanthrene
Brian Fairley Refinery Manager, Sarnia Refinery 12/14/2012 Date
Toxic Substance Reduction Planner
As of 12/11/2012, 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 Toxics Reduction Act, 2009 that are set out in the plan dated 12/11/2012 and that the plan complies with tha Act and Ontario Regulation 455/09 (General) made under that Act.
• 218-01-9 Benzo(a)phenanthrene
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee		
As of 12/14/2012, I, Brian Fairly Date reduction plan for the toxic substance referred knowledge the plan is factually accurate and concept Regulation 455/09 (General) made under that A	omplies with the To.	minar with its contents, and to my
• 50-32-8 Benzo(a)pyrene		
Bui Faily	12/14	12012
Brian Fairley	Date	
Toxic Substance Reduction Planner		
As of 12/11/20/2, I, Scott Man	nser_ certify that I a	m familiar with the processes
at Imperial Oil's Sarnia Refinery that use or cr with the estimates referred to in subparagraphs Act, 2009 that are set out in the plan dated	reate the toxic substa s 7 iii, iv and v of su a ////20/2	ances referred to below, that I agree absection 4 (1) of the <i>Toxics Reduction</i> and that the plan complies with tha
• 50-32-8 Benzo(a)pyrene		
	00 7 se Number	12/11/2012 Date
Toxic Substance Reduction Planner		

Highest Ranking Employee
As of 12/14/2012, 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.
• 205-99-2 / 205-82-3 Benzo(b/j)fluoranthene
Brian Fairley Refinery Manager, Sarnia/Refinery
Toxic Substance Reduction Planner As of 12/1/2012 I. Scott Manser, certify that I am familiar with the processes
As of 12/1/20/2, 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 12/1/20/2 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
• 205-99-2 / 205-82-3 Benzo(b/j)fluoranthene
Scott Manser License Number Date
Foxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• 192-97-2 Benzo(e)pyrene
R: 7 ln
Brian Fairley Date 12 /14 /2012 Date
Brian Fairley Date Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/11/2012, 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 Toxics Reduction
Act, 2009 that are set out in the plan dated $12/11/20/2$ and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
The tild Children regulation 155/05 (Contral) made disast tild free
• 192-97-2 Benzo(e)pyrene
Sed Man. 15RP007/ 12/11/2012
Scott Manser License Number Date
Toxic Substance Reduction Planner

Highest Ranking Employee
As of 2012/14/12, 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
reduction plan for the toxic substance referred to below and ann 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.
• 191-24-2 Benzo(g,h,i)perylene
Brian Fairley Date
Brian Fairley Date
Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/11/2012, 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</i>
Act, 2009 that are set out in the plan dated $12/11/2012$ and that the plan complies with that
Act and Ontario Regulation 455/09 (General) made under that Act.
• 191-24-2 Benzo(g,h,i)perylene
Set Man. 15RP0071. 12/11/2012
Scott Manser 15RP 0071 12 /11/2012 Date
Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• 224-42-0 Dibenzo(a,j)acridine
Brian Fairley 12/14/2012 Date
Brian Fairley Date Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/11/2012, 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</i>
Act, 2009 that are set out in the plan dated $\frac{12}{11/2012}$ and that the plan complies with that
Act and Ontario Regulation 455/09 (General) made under that Act.
• 224-42-0 Dibenzo(a,j)acridine
Scott Manser License Number Date Toxic Substance Reduction Planner
Scott Mansér License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee	
As of 12/14/2013, I, Brian Fairley, certify that I have read the reduction plan for the toxic substance referred to below and am familiar with knowledge the plan is factually accurate and complies with the <i>Toxics Reduc</i> Regulation 455/09 (General) made under that Act.	its contents, and to my
• 189-55-9 Dibenzo(a,i)pyrene	
Brian Fairley Refinery Manager, Sarnia Refinery 12 /14 /2012 Date	—
Toxic Substance Reduction Planner As of 12/11/2012, I, Scott Manser certify that I am familiar Date Planner Name	
at Imperial Oil's Sarnia Refinery that use or create the toxic substances referr with the estimates referred to in subparagraphs 7 iii, iv and v of subsection 4 Act, 2009 that are set out in the plan dated 12/11/2012 and that Act and Ontario Regulation 455/09 (General) made under that Act.	
• 189-55-9 Dibenzo(a,i)pyrene	
Scott Manser License Number D Toxic Substance Reduction Planner	2012 ate

Highest Ranking Employee
As of 12/14/2012, 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.
• 206-44-0 Fluoranthene
Brian Fairley Refinery Manager, Sarnia Refinery Date
Toxic Substance Reduction Planner
As of 12/11/2012, 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 12/11/20/2 and that the plan complies with tha Act and Ontario Regulation 455/09 (General) made under that Act.
• 206-44-0 Fluoranthene
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee			
As of 12/14/2012, I, B	Brian Fairley, certify that	I have read the toxic substance	
reduction plan for the toxic substance	e referred to below and ar rate and complies with the		
• 86-73-7 Fluorene			
Brian Fairley Refinery Manager, Sarnia Refinery		4/2012	
Toxic Substance Reduction Planner	Scott Manser certify tha	at I am familiar with the processes	
As of <u>12/11/2012</u> , I, <u>Date</u> , at Imperial Oil's Sarnia Refinery that with the estimates referred to in subp <i>Act</i> , 2009 that are set out in the plan of Act and Ontario Regulation 455/09 (6)	t use or create the toxic su paragraphs 7 iii, iv and v o dated	ubstances referred to below, that I agr of subsection 4 (1) of the <i>Toxics Redu</i> and that the plan complies with	ction
• 86-73-7 Fluorene			
Scott Manser	15RP0071 License Number	12/11/2012 Date	
Toxic Substance Reduction Planner			

Highest Ranking Employee
As of 12/14/2012, 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.
• 193-39-5 Indeno(1,2,3-c,d)pyrene
Brian Fairley Brian Fairley Refinery Manager, Sarnia Refinery Date
Toxic Substance Reduction Planner
As of 12/11/2012, 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 12/11/2012 and that the plan complies with tha Act and Ontario Regulation 455/09 (General) made under that Act.
• 193-39-5 Indeno(1,2,3-c,d)pyrene
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Kanking Employee
As of 12/14/2012, 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.
• 91-20-3 Naphthalene
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/11/2012, 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 12/11/2012 and that the plan complies with tha Act and Ontario Regulation 455/09 (General) made under that Act.
• 91-20-3 Naphthalene Ash Mar. 1588 6071 12/11/2012
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• 85-01-8 Phenanthrene
Brian Fairley 12/14/2012 Date
Brian Fairley Date Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/11/2012, 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.
• 85-01-8 Phenanthrene
Scott Manser License Number Date Toxic Substance Reduction Planner

Highest Ranking Employee
As of 12/14/2012, 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.
• 129-00-0 Pyrene
Brian Fairley Refinery Manager, Sarnia Refinery
Toxic Substance Reduction Planner
As of 12/11/26/12, 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 12/11/2012 and that the plan complies with the Act and Ontario Regulation 455/09 (General) made under that Act.
• 129-00-0 Pyrene
Scott Manser License Number Date Toxic Substance Reduction Planner