Toxics Reduction Act Public Annual Report Calendar 2016

The legal and trade names of the owner and the operator of the facility, the street address of the facility and, if the mailing address of the facility is different from the street address, the mailing address.(See below)	Asahi Refining Canada Limited 130 Glidden Road Brampton ON L6W 3M8
Facility NPRI identification number	0000003991
The identification number assigned to the facility by the Ministry of the Environment for the purposes of Ontario Regulation 127/01.	-
Number of full-time employees	114
North American Industry Classification System (NAICS) - 2, 4, and 6 digit codes	31 - 33 Manufacturing 3314 - Non-Ferrous (exc. Al) Production & Processing 331410 - Non-Ferrous (except Al) Smelting & Refining

If applicable, the name, position and telephone number of the individual who is the contact at the facility for the public:

Public Contact (if applicable)	Andy Calovini
Title	Environmental, Health and Safety Manager
Phone Number	905-454-6851

Address of each person below if not the same as the facility

Facility Name	Asahi Refining Canada Limited
Address 1	130 Glidden Road
Address 2	
City	Brampton
Province	ON
Postal Code	L6W 3M8

UTM coordinates, x and y	X	603005	Y	4838353
Datum				WGS84

Legal name of Canadian parent company, if your facility is a subsidiary of a Canadian parent company

Parent company name	Asahi Refining Canada Limited
Address 1	130 Glidden Road
Address 2	
City	Brampton
Province	ON
Postal Code	L6W 3M8
Percent Ownership	100%

Substance Accounting

Substance:	Chlorine
CAS Number:	7782-50-5

On a facility-wide basis:	Amount	Units
Amount that entered the facility as the substance itself or as a constituent of another substance:	>10 - 100	tonnes
The amount of substance that was created:	0.000	tonnes
The amount of substance that was contained in product:	0.000	tonnes

On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at http://www.ec.gc.ca/inrp-npri/default.asp?lang=en

Substance:	Copper and its compounds
CAS Number:	NA - 06

On a facility-wide basis:	Amount	Units
Amount that entered the facility as the substance itself or as a constituent of another substance:	>100 - 1000	tonnes
The amount of substance that was created:	0.000	tonnes
The amount of substance that was contained in product:	>10 - 100	tonnes

On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at http://www.ec.gc.ca/inrp-npri/default.asp?lang=en

Substance:	Hydrochloric Acid
CAS Number:	7647-01-0

On a facility-wide basis:	Amount	Units
Amount that entered the facility as the substance itself or as a constituent of another substance:	>100 - 1000	tonnes
The amount of substance that was created:	0.000	tonnes
The amount of substance that was contained in product:	0.000	tonnes

On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at http://www.ec.gc.ca/inrp-npri/default.asp?lang=en

Substance:	Nitrate ion (in solution at a pH of 6.0 or greater)
CAS Number:	NA - 17

On a facility-wide basis:	Amount	Units
Amount that entered the facility as the substance itself or as a constituent of another substance:	>100 - 1000	tonnes
The amount of substance that was created:	0.000	tonnes
The amount of substance that was contained in product:	0.000	tonnes

On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at http://www.ec.gc.ca/inrp-npri/default.asp?lang=en

Substance Accounting

Substance:	Nitric Acid
CAS Number:	7697-37-2

On a facility-wide basis:	Amount	Units
Amount that entered the facility as the substance itself or as a constituent of another substance:	>100 - 1000	tonnes
The amount of substance that was created:	0.000	tonnes
The amount of substance that was contained in product:	0.000	tonnes

On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at http://www.ec.gc.ca/inrp-npri/default.asp?lang=en

Substance:	Silver and its compounds
CAS Number:	NA - 13

On a facility-wide basis:	Amount	Units
Amount that entered the facility as the substance itself or as a constituent of another substance:	>1000 - 10000	tonnes
The amount of substance that was created:	0.000	tonnes
The amount of substance that was contained in product:	>1000 - 10000	tonnes

On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at http://www.ec.gc.ca/inrp-npri/default.asp?lang=en

Substance:	Zinc and its compounds
CAS Number:	NA - 14

On a facility-wide basis:	Amount	Units
Amount that entered the facility as the substance itself or as a constituent of another substance:	>10 - 100	tonnes
The amount of substance that was created:	0.000	tonnes
The amount of substance that was contained in product:	>10 - 100	tonnes

On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at http://www.ec.gc.ca/inrp-npri/default.asp?lang=en

Substance:	Arsenic and its compounds
CAS Number:	NA - 02

On a facility-wide basis:	Amount	Units
Amount that entered the facility as the substance itself or as a constituent of another substance:	>1000 - 10000	kg
The amount of substance that was created:	0.000	kg
The amount of substance that was contained in product:	>1000 - 10000	kg

On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at http://www.ec.gc.ca/inrp-npri/default.asp?lang=en

Substance Accounting

Substance:	Cadmium and its compounds
CAS Number:	NA - 03

On a facility-wide basis:	Amount	Units
Amount that entered the facility as the substance itself or as a constituent of another substance:	>1000 - 10000	kg
The amount of substance that was created:	0.000	kg
The amount of substance that was contained in product:	>100 - 1000	kg

On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at http://www.ec.gc.ca/inrp-npri/default.asp?lang=en

Substance:	Lead and its compounds
CAS Number:	NA - 08

On a facility-wide basis:	Amount	Units
Amount that entered the facility as the substance itself or as a constituent of another substance:	>10000 - 100000	kg
The amount of substance that was created:	0.000	kg
The amount of substance that was contained in product:	>1000 - 10000	kg

On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at http://www.ec.gc.ca/inrp-npri/default.asp?lang=en

Substance:	Selenium and its compounds
CAS Number:	NA - 12

On a facility-wide basis:	Amount	Units
Amount that entered the facility as the substance itself or as a constituent of another substance:	>1000 - 10000	kg
The amount of substance that was created:	0.000	kg
The amount of substance that was contained in product:	>1000 - 10000	kg

On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at http://www.ec.gc.ca/inrp-npri/default.asp?lang=en

Annual Progress Report - Calendar 2016

Substances for which toxic substance reduction plans have been prepared:

Substance	CASRN
Chlorine	7782-50-5
Copper and its compounds	NA - 06
Hydrochloric Acid	7647-01-0
Silver and its compounds	NA - 13
Zinc and its compounds	NA - 14
Arsenic and its compounds	NA - 02
Cadmium and its compounds	NA - 03
Lead and its compounds	NA - 08
Selenium and its compounds	NA - 12
Nitrate ion (in solution at a pH of 6.0 or greater)	NA-17
Nitric Acid	7697-37-2

Plan Objectives

Asahi Refining Canada Limited's goal is to reduce the use and release of the above noted substances where technically and economically feasible. Based on currently available information and technologies, there are no technically and economically reduction options currently available for these substance. However, Asahi will continue to explore and investigate potential options as they arise as part of their sustainability program. It is also important to note that many of these substances are naturally occurring in trace amounts in many of the materials received and processed by the facility (e.g., primary doré) and that most current research seeks to abate these emissions using end of pipe controls.

Toxics Reduction Progress

Variations in the reported quantities of all substances were observed during the reporting period relative to the previous year due in part to the overall changes in the annual production values in which gold refining quantities decreased slightly and silver refining quantities increased slightly. In general, changes in the quantities of most metals were due to varying concentrations of these trace metals in the feedstock processed by the facility. Decreases in the quantity of Zinc used by the facility are due to a process change in which the facility is switching from using Zinc in their residues treatment operations to using an Iron based material. Changes in the quantities of materials sent to recycling are due to a decrease in the quantity of filter cake sent to Glencore which was offset by an increase in the quantity of material sent to Chimet for outside refining. Increase quantities of substances released to water are due to an increase in the estimated quantity of treated effluent released by the facility.

As with previous assessments, the quantity of metals contained in final product is based on a mass balance approach in which the difference between the total metal processed less the total quantity of that metal released was deemed to be contained in the final product. Note that the quantities of these same metals in the materials received and processed are, in many cases, based on average concentrations of these substances in the various feedstock materials received and processed by the facility. However, the information is still considered to be the best available for completing the annual assessments.

Plan Implementation Progress

There were no reduction options identified in any of the plans for the above noted substances that were identified as being both technically and economically feasible. As such, there were no timelines presented in the reduction plans for the above noted substances. However, Asahi Refining Canada Limited will continue to explore and investigate potential reduction options as they arise as part of their sustainability program.

As there were no anticipated reductions noted in each of the plans for the toxic substances noted above, there were no reductions of any toxic substances during the reporting period that would be attributable to any reduction plan.

Certification Statement

As of May 26, 2017, I certify that I have read the reports on the toxic substance reduction plans for the above noted substances and am familiar with their contents and to my knowledge the information contained in the reports is factually accurate and the reports comply with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under the Act.

The original version of this report is signed off by: Highest Ranking Employee:	Dave Murray
Title:	Operations Manager
Phone Number:	905-454-6897

I, the highest ranking employee, agree with the certification statement(s) above and acknowledge that by checking the box I am electronically signing the statement(s). I also acknowledge that by pressing the 'Submit Report(s)' button I am submitting the facility record(s)/report(s) for the identified facility to the Director under the Toxics Reduction Act, 2009. I also acknowledge that the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 provide the authority to the Director under the Act to make certain information as specified in subsection 27(5) of Ontario Regulation 455/09 available to the public.

Comparison of Reported Quantities

Substance	CASRN	Report Year	Used	Created	In Product	Air	Water	Disposal	Recycle
Arsenic	NA - 02	2015	>1000 - 10000	0.000	>1000 - 10000	>0 - 1	>0 - 1	0.000	>100 - 1000
(Units kg)		2016	>1000 - 10000	0.000	>1000 - 10000	>0 - 1	>0 - 1	0.000	>100 - 1000
		Change	>10 - 100	0.000	>100 - 1000	>0 - 1	>0 - 1	0.000	>10 - 100
		% Change	-2.7%	0.0%	-10.1%	0.0%	23.9%	0.0%	14.9%
Cadmium	NA - 03	2015	>1000 - 10000	0.000	>100 - 1000	>0 - 1	>0 - 1	0.000	>1000 - 10000
(Units kg)		2016	>1000 - 10000	0.000	>100 - 1000	>0 - 1	>0 - 1	0.000	>1000 - 10000
		Change	>100 - 1000	0.000	>100 - 1000	>0 - 1	>0 - 1	0.000	>100 - 1000
		% Change	9.8%	0.0%	76.6%	0.0%	23.9%	0.0%	-9.4%
Chlorine	7782-50-5	2015	>10 - 100	0.000	>0 - 1	>0 - 1	>0 - 1	0.000	>10 - 100
(Units Mg)		2016	>10 - 100	0.000	>0 - 1	>0 - 1	>0 - 1	0.000	>10 - 100
		Change	>1 - 10	0.000	>0 - 1	>0 - 1	>0 - 1	0.000	>1 - 10
		% Change	-2.2%	0.0%	0.0%	0.0%	0.0%	0.0%	-11.2%
Copper	NA - 06	2015	>10 - 100	0.000	>10 - 100	>0 - 1	>0 - 1	0.000	>10 - 100
(Units Mg)		2016	>100 - 1000	0.000	>10 - 100	>0 - 1	>0 - 1	0.000	>10 - 100
		Change	>10 - 100	0.000	>10 - 100	>0 - 1	>0 - 1	0.000	>1 - 10
		% Change	21.7%	0.0%	71.9%	0.0%	23.9%	0.0%	-13.5%
Hydrochloric Acid	7647-01-0	2015	>100 - 1000	0.000	>0 - 1	>1 - 10	>0 - 1	0.000	0.000
(Units Mg)		2016	>100 - 1000	0.000	>0 - 1	>1 - 10	>0 - 1	0.000	0.000
		Change	>10 - 100	0.000	>0 - 1	>0 - 1	>0 - 1	0.000	0.000
		% Change	-24.4%	0.0%	0.0%	21.1%	0.0%	0.0%	0.0%
Lead	NA - 08	2015	>10000 - 100000	0.000	>1000 - 10000	>1 - 10	>0 - 1	>1000 - 10000	>1000 - 10000
(Units kg)		2016	>10000 - 100000	0.000	>1000 - 10000	>1 - 10	>0 - 1	>1000 - 10000	>1000 - 10000
		Change	>10 - 100	0.000	>100 - 1000	>0 - 1	>0 - 1	>0 - 1	>100 - 1000
		% Change	-0.3%	0.0%	-5.5%	0.1%	23.9%	0.0%	13.4%
Selenium	NA - 12	2015	>1000 - 10000	0.000	>1000 - 10000	>0 - 1	>1 - 10	0.000	>10 - 100
(Units kg)		2016	>1000 - 10000	0.000	>1000 - 10000	>0 - 1	>1 - 10	0.000	>10 - 100
		Change	>100 - 1000	0.000	>100 - 1000	>0 - 1	>0 - 1	0.000	>10 - 100
		% Change	9.7%	0.0%	9.3%	0.0%	23.9%	0.0%	24.3%
Silver	NA - 13	2015	>1000 - 10000	0.000	>1000 - 10000	>0 - 1	>0 - 1	0.000	>10 - 100
(Units Mg)		2016	>1000 - 10000	0.000	>1000 - 10000	>0 - 1	>0 - 1	0.000	>10 - 100
		Change	>100 - 1000	0.000	>100 - 1000	>0 - 1	>0 - 1	0.000	>1 - 10
		% Change	12.4%	0.0%	12.8%	0.0%	23.9%	0.0%	-7.3%
Zinc	NA - 14	2015	>10 - 100	0.000	>10 - 100	>0 - 1	>0 - 1	0.000	>10 - 100
(Units Mg)		2016	>10 - 100	0.000	>10 - 100	>0 - 1	>0 - 1	0.000	>10 - 100
		Change	>10 - 100	0.000	>10 - 100	>0 - 1	>0 - 1	0.000	>1 - 10
		% Change	-32.3%	0.0%	-43.8%	0.0%	23.9%	0.0%	-11.0%
Nitrate ion (in solution	NA - 17	2015	>100 - 1000	0.000	0.000	0.000	0.000	0.000	0.000
at a pH of 6.0 or		2016	>100 - 1000	0.000	0.000	0.000	0.000	0.000	0.000
(Units Mg)		Change	>1 - 10	0.000	0.000	0.000	0.000	0.000	0.000
		% Change	-2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Nitric Acid	7697-37-2	2015	>100 - 1000	0.000	0.000	0.000	0.000	>0 - 1	0.000
(Units Mg)		2016	>100 - 1000	0.000	0.000	0.000	0.000	>0 - 1	0.000
		Change	>1 - 10	0.000	0.000	0.000	0.000	>0 - 1	0.000
		% Change	-2.3%	0.0%	0.0%	0.0%	0.0%	-100.0%	0.0%

Note: Red values indicate a decrease in the quantity reported in the current year relative to the previous year.