GOLDCORP
PORCUPINE GOLD MINES

PORCUPINE GOLD MINES
4315 Gold Mine Road
South Porcupine, ON
P0N 1H0

Stephanie Thibeault
Senior Environmental Coordinator

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June 1st, 2016

RE: Goldcorp Canada Ltd., Porcupine Gold Mines
Annual Toxic Reduction Act Report for 2015

To Whom It May Concern:

As per Section 10 of the Toxic Reduction Act (S.O., 2009) and Section 47 of Ontario's Toxic Reduction Program (O. Reg. 455/09), please find a signed hard copy of the *Annual Toxic Reduction Act Report* for the year 2015 for Goldcorp Canada Ltd., Porcupine Gold Mines.

The report includes all toxic substances for which Toxic Substance Reduction Plans have been prepared to date including Arsenic, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Nickel, Zinc, Cyanides (Ionic), Particulate Matter, PM10, PM2.5, Ammonia (Total), Nitrate Ion, Mercury, Vanadium, Hydrochloric Acid, Nitrogen Oxides, and Carbon Monoxide.

If you require further information and/or clarification on the information included in this report, please do not hesitate to contact me by telephone at (707) 235-6581 or by e-mail at stephanie.thibeault@goldcorp.com.

Sincerely,

S. Thibeault

Stephanie Thibeault, M.Sc., QEP
Senior Environmental Coordinator
Goldcorp – Porcupine Gold Mines

Enc. Annual Toxic Reduction Act Report for 2015

cc. Bryan Neeley, Sustainability Manager, Goldcorp Canada Ltd., PGM

TRA ANNUAL REPORT (2015 Reporting Year)

This *Toxics Reduction Act* (TRA) Annual Report has been prepared in accordance with, and satisfies the requirements of Section 10 of the TRA and Section 27 of Ontario Regulation (O.Reg.) 455/09 for all TRA toxic substances for which Toxic Substance Reduction Plans have been prepared to date.

Basic Facility Information

Mandatory Basic Facility Information Item	Details
Substance Name and Chemical Abstracts Service (CAS) Registry Number for the Substances whose Toxic Substance Reduction Plans are covered by this Report on Toxic Substance Reduction Plans	This Report on Toxic Substance Reduction Plans applies to the Toxic Substance Reduction Plans for the following prescribed Toxic Substances: **Arsenic, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Nickel, Zinc, Cyanides (Ionic), Particulate Matter, PM10, PM2.5, Ammonia (Total), Nitrate Ion, Mercury** (Per O.Reg.455/09; "no single CAS numbers apply to these substances"), **Vanadium** (CAS number 7440-62-2), **Hydrochloric Acid** (CAS number 7467-01-0) **Nitrogen Oxides** (CAS number 11104-93-1), and **Carbon Monoxide** (CAS number 630-08-0).
National Pollutant Release Inventory (NPRI) and O.Reg.127/01 Identification Numbers	NPRI ID: 1941 O.Reg. 127/01 ID: 9490
The legal and trade names of the owner and the operator of the facility, the street address of the facility and the mailing address of the facility, if different	Goldcorp Porcupine Gold Mines Goldcorp Canada Ltd. 4315 Gold Mine Road, South Porcupine, ON P0N1H0 Canada
The number of full time employee equivalents at the facility	791
The two- and four-digit North American Industry Classification System (NAICS) codes and the six-digit NAICS Canada code	21 – Mining & Oil & Gas Extraction 2122 – Metal Ore Mining 212220 – Gold & Silver Ore Mining
Public contact	Stephanie Thibeault Senior Environmental Coordinator Goldcorp Canada Inc. [address per above] (705) 235-6581
The spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) datum	UTM Zone 17 482866 E, 5368194 N
Parent Company Information	Goldcorp Inc. Suite 3400-666 Burrard Street, Park Place Vancouver, BC V6C 2X8 (604) 696-3000

List of All Substances for which Toxic Substance Reduction Plans Have Been Prepared at the Facility

The Facility has prepared Toxic Substance Reduction Plans for the following prescribed Toxic Substances:

Arsenic*

Cadmium*

Chromium*

Cobalt*

Copper*

Lead*

Manganese*

Nickel*

Zinc*

Vanadium [CAS number 7440-62-2]

Mercury*

Cyanides (Ionic)*

Hydrochloric Acid [CAS number 7647-01-0]

Particulate Matter*

PM-10*

PM-2.5*

Ammonia*

Nitrate Ion*

Nitrogen Oxides (CAS number 11104-93-1)

Carbon Monoxide (CAS number 630-08-0)

*Per O.Reg.455/09, "no single CAS numbers apply to these substances"

Toxic Substance Accounting Information

Refer to Appendix A: TRA Toxic Substance Quantification and Accounting Summary for the information required under s.12(1) of O.Reg.455/09.

Comparison of Toxic Substance Accounting to the Previous Calendar Year

Refer to Appendix B: Comparison of Toxic Substance Quantification and Accounting to the Previous Calendar Year for the information required by s.26(2) of O.Reg.455/09.

Changes in Quantification Methods

There were no changes made to any quantification methods since the preparation of the Toxic Substance accounting information for the previous calendar year and therefore no changes outlined in the above comparison occurred due to changes in quantification methods.

Objectives of Toxic Substance Reduction Plans

Refer to Appendix C: Plan Summaries which contains objectives of the respective Toxic Substance Reduction Plans covered by this Report, as required by s.26(2)3 of O.Reg. 455/09.

Toxic Substance Reduction Options Identified in Toxic Substance Reduction Plans

As outlined in the Plan Summaries attached in Appendix C, no toxic substance reduction options were identified in any of the respective Plans and therefore the information required by s.26(2)4, s.26(2)5 and s.26(2)6 is not applicable for this Report.

Amendments to Toxic Substance Reduction Plans

No Amendments have been made to any Toxic Substance Reduction Plans.

Certification Statement

As of June 1 2016, I certify that I have read the 2015 TRA Annual Report for the substances listed below and am familiar with its content and to my knowledge the information contained in the Report is factually accurate and the Report complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under the Act.

Arsenic*

Cadmium*

Chromium*

Cobalt*

Copper*

Lead*

Manganese*

Nickel*

Zinc*

Vanadium [CAS number 7440-62-2]

Mercury*

Cyanides (Ionic)*

Hydrochloric Acid [CAS number 7647-01-0]

Particulate Matter*

PM-10*

PM-2.5*

Ammonia*

Nitrate Ion*

Nitrogen Oxides (CAS number 11104-93-1)

Carbon Monoxide (CAS number 630-08-0)

*Per O.Reg.455/09, "no single CAS numbers apply to these substances"

Brendan Zuidema

May 30/2016

Date

APPENDIX A: TRA TOXIC SUBSTANCE QUANTIFICATION AND ACCOUNTING SUMMARY

TRA Toxic Substance Quantification and Accounting Summary

Substance	CAS No.*	TRA Reportable Values (SWIM & Public Report)			
		Unit	Use	Created	Contained in Product
Arsenic	N/A-2	kg	1,254,708.073	0.000	68,469.863
Cadmium	N/A-3	kg	3,843.650	0.000	593.828
Chromium	N/A-4	tonnes	668.184	0.000	18.235
Cobalt	N/A-5	tonnes	137.253	0.000	3.738
Copper	N/A-6	tonnes	381.750	0.000	10.416
Lead	N/A-8	kg	58,237.773	0.000	3,497.671
Manganese	N/A-9	tonnes	3,816.909	0.000	104.164
Nickel	N/A-10	tonnes	721.928	0.000	19.699
Vanadium	7440-62-2	tonnes	501.139	0.000	13.676
Zinc	N/A-14	tonnes	684.720	0.000	18.686
Mercury	N/A-15	kg	140.162	0.000	3.785
Cyanides	N/A-7	tonnes	439.043	0.000	0.000
Hydrochloric acid	7647-01-0	tonnes	11.904	0.000	0.000
Ammonia (Total)	N/A	tonnes	0.000	24.252	0.000
Nitrate Ion	N/A-11	tonnes	0.000	11.335	0.000
Carbon Monoxide	630-08-0	tonnes	0.000	303.921	0.000
Oxides Of Nitrogen (Expressed As NO2)	11104-93-1	tonnes	0.000	759.294	0.000
PM - Particulate Matter	N/A - M08	tonnes	0.000	122.432	0.000
PM10 - Particulate Matter <=10 Micrometers	N/A - M09	tonnes	0.000	80.567	0.000
PM2.5 - Particulate Matter <=2.5 Micrometers	N/A - M10	tonnes	0.000	57.626	0.000

* Substances with CAS Numbers starting with "N/A" do not have CAS Numbers in NPRI or TRA guidance. The CAS Numbers assigned to these substances are arbitrary CAS Numbers used for the purpose of this workbook.

APPENDIX B: COMPARISON OF TOXIC SUBSTANCE QUANTIFICATION AND ACCOUNTING TO THE PREVIOUS CALENDAR YEAR

TRA Quantification, Accounting and Reporting Comparison

The table below provides a comparison between the three TRA reportable activity quantities for each substance (Use, Creation, Contained in Product) for the current and previous year. The TRA requires a comment in the SWIM report for increases or decreases in these activities as compared to the previous year and therefore the comment provided on the column on the far right of each table should be provided within SWIM.

USE

Substance	CAS	Reporting Units	Reported Value for the Current Year	Reported Value for the Previous Year	% Change	Comment if Change +/- 10%
Arsenic	N/A-2	kg	1,254,708,073	1,357,883,138	-8%	—
Cadmium	N/A-3	kg	3,843,650	2,655,922	45%	Increase in waste rock generation
Chromium	N/A-4	tonnes	668,184	689,991	-3%	—
Cobalt	N/A-5	tonnes	137,253	141,433	-3%	—
Copper	N/A-6	tonnes	381,750	393,693	-3%	—
Lead	N/A-8	kg	58,237,773	79,864,049	-27%	New assay data for 2015
Manganese	N/A-9	tonnes	3,816,909	3,936,319	-3%	—
Nickel	N/A-10	tonnes	721,928	744,489	-3%	—
Vanadium	7440-62-2	tonnes	501,139	516,818	-3%	—
Zinc	N/A-14	tonnes	684,720	706,129	-3%	—
Mercury	N/A-15	kg	140,162	144,475	-3%	—
Cyanides	N/A-7	tonnes	439,043	439,043	—	—
Hydrochloric acid	7647-01-0	tonnes	11,904	13,874	-14%	Decrease in usage of hydrochloric acid
Ammonia (Total)	N/A	tonnes	0	0	—	—
Nitrate Ion	N/A-11	tonnes	0	0	—	—
Carbon Monoxide	630-08-0	tonnes	0	0	—	—
Oxides Of Nitrogen (Expressed As NO2)	11104-93-1	tonnes	0	0	—	—
PM - Particulate Matter	N/A - M08	tonnes	0	0	—	—
PM10 - Particulate Matter <=10 Micrometers	N/A - M09	tonnes	0	0	—	—
PM2.5 - Particulate Matter <=2.5 Micrometers	N/A - M10	tonnes	0	0	—	—

CREATION

Substance	CAS*	Reporting Units	Reported Value for the Current Year	Reported Value for the Previous Year	% Change	Comment if Change +/- 10%
Arsenic	N/A-2	kg	0	0	—	—
Cadmium	N/A-3	kg	0	0	—	—
Chromium	N/A-4	tonnes	0	0	—	—
Cobalt	N/A-5	tonnes	0	0	—	—
Copper	N/A-6	tonnes	0	0	—	—
Lead	N/A-8	kg	0	0	—	—
Manganese	N/A-9	tonnes	0	0	—	—
Nickel	N/A-10	tonnes	0	0	—	—
Vanadium	7440-62-2	tonnes	0	0	—	—
Zinc	N/A-14	tonnes	0	0	—	—
Mercury	N/A-15	kg	0	0	—	—
Cyanides	N/A-7	tonnes	0	0	—	—
Hydrochloric acid	7647-01-0	tonnes	0	0	—	—
Ammonia (Total)	N/A	tonnes	24,252	15,330	58%	Increased presence in monitoring data
Nitrate Ion	N/A-11	tonnes	11,335	9,436	20%	Increased presence in monitoring data
Carbon Monoxide	630-08-0	tonnes	303,931	178,073	71%	Increase in explosive usage
Oxides Of Nitrogen (Expressed As NO2)	11104-93-1	tonnes	759,294	567,033	34%	Increase in explosive usage
PM - Particulate Matter	N/A - M08	tonnes	122,432	88,541	38%	Addition of aggregate pits at Doms Mill and Pamour, addition of Hollinger Mine activities
PM10 - Particulate Matter <=10 Micrometers	N/A - M09	tonnes	80,567	57,540	40%	Addition of aggregate pits at Doms Mill and Pamour, addition of Hollinger Mine activities
PM2.5 - Particulate Matter <=2.5 Micrometers	N/A - M10	tonnes	57,626	44,924	28%	Addition of aggregate pits at Doms Mill and Pamour, addition of Hollinger Mine activities

CONTAINED IN PRODUCT

Substance	CAS*	Reporting Units	Reported Value for the Current Year	Reported Value for the Previous Year	% Change	Comment if Change +/- 10%
Arsenic	N/A-2	kg	68,469,843	179,236,363	-62%	Decrease in use of previously stockpiled waste rock
Cadmium	N/A-3	kg	593,828	749,384	-20%	Decrease in use of previously stockpiled waste rock
Chromium	N/A-4	tonnes	18,235	14,559	25%	Increase in use of historical tailings
Cobalt	N/A-5	tonnes	3,738	2,984	25%	Increase in use of historical tailings
Copper	N/A-6	tonnes	10,416	8,316	25%	Increase in use of historical tailings
Lead	N/A-8	kg	3,497,671	23,091,951	-85%	Decrease in use of previously stockpiled waste rock
Manganese	N/A-9	tonnes	104,164	83,164	25%	Increase in use of historical tailings
Nickel	N/A-10	tonnes	19,699	15,728	25%	Increase in use of historical tailings
Vanadium	7440-62-2	tonnes	13,676	10,919	25%	Increase in use of historical tailings
Zinc	N/A-14	tonnes	18,688	14,918	25%	Increase in use of historical tailings
Mercury	N/A-15	kg	3,785	3,022	25%	Increase in use of historical tailings
Cyanides	N/A-7	tonnes	0.000	0.000	—	—
Hydrochloric acid	7647-01-0	tonnes	0.000	0.000	—	—
Ammonia (Total)	N/A	tonnes	0.000	0.000	—	—
Nitrate Ion	N/A-11	tonnes	0.00	0.00	—	—
Carbon Monoxide	630-08-0	tonnes	0.00	0.00	—	—
Oxides Of Nitrogen (Expressed As NO2)	11104-93-1	tonnes	0.00	0.00	—	—
PM - Particulate Matter	N/A - M08	tonnes	0.00	0.00	—	—
PM10 - Particulate Matter <=10 Micrometers	N/A - M09	tonnes	0.00	0.00	—	—
PM2.5 - Particulate Matter <=2.5 Micrometers	N/A - M10	tonnes	0.00	0.00	—	—

*NR= Not Reportable

APPENDIX C: PLAN SUMMARIES

TOXIC SUBSTANCE REDUCTION PLAN SUMMARY – Cyanides (Ionic)

This Toxic Substance Reduction Plan Summary has been prepared in accordance with Section 8(2) of the *Toxics Reduction Act* and satisfies the minimum Plan Summary content requirements stipulated in Section 24 of Ontario Regulation (O.Reg.) 455/09.

Basic Facility Information

Mandatory Basic Facility Information Item	Details
Substance Name and Chemical Abstracts Service (CAS) Registry Number for the Toxic Substance	Cyanides (Ionic) [Per O.Reg.455/09; no single CAS number applies to this substance]
National Pollutant Release Inventory (NPRI) and O.Reg.127/01 Identification Numbers	NPRI ID: 1941 O.Reg.127/01 ID: 9490
The legal and trade names of the owner and the operator of the facility, the street address of the facility and the mailing address of the facility, if different	Goldcorp Canada Inc. 4315 Gold Mine Road, South Porcupine, ON P0N1H0 Canada
The number of full time employee equivalents at the facility	643
The two- and four-digit North American Industry Classification System (NAICS) codes and the six-digit NAICS Canada code	21 – Mining & Oil & Gas Extraction 2122 – Metal Ore Mining 212220 – Gold & Silver Ore Mining
Public contact	László Götz Environmental Manager Goldcorp Canada Inc. [address per above] (705) 235-6720
The spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) datum	UTM Zone 17 482866 E, 5368194 N
Parent Company Information	N/A

List of All Substances for which Toxic Substance Reduction Plans Have Been Prepared at the Facility

The Facility has prepared Toxic Substance Reduction Plans for the following prescribed Toxic Substances:

Arsenic*

Cadmium*

Chromium*

Cobalt*

Copper*

Lead*

Manganese*

Nickel*

Zinc*

Vanadium (CAS number 7440-62-2)

Cyanides (Ionic)*

Hydrochloric Acid (CAS number 7647-01-0)

*Per O.Reg.455/09, no single CAS numbers apply to these substances

Statement of Intent

As required by s.4(1) of the TRA, a Plan must include either a statement of the Facility's intent to reduce the use and/or creation of the Toxic Substance at the Facility, or the reasons for not including this statement, as well as objectives of the Plan.

A statement of the Facility's intent to reduce use of the Toxic Substance has not been included as a part of this Plan. The Toxic Substance is never created within the Facility's process and therefore no statement with respect to intent to reduce creation of the Toxic Substance is required.

The Facility is of the opinion that it has previously optimized its use of the Toxic Substance using the best available technology and practices that are economically achievable at this time. This opinion is supported by the following three aspects which influence the way in which the Facility uses the Toxic Substance:

1) Cyanide Code Certification

The Facility has voluntarily obtained certification under The International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (the Cyanide Code). The Cyanide Code is a voluntary industry program for the gold mining industry to promote

- Responsible management of cyanide used in gold mining;
- Enhance the protection of human health; and
- Reduce the potential for environmental impacts.

Therefore the measures adopted by the Facility under the Cyanide Code apply directly to how Facility uses the Toxic Substance. Companies that adopt the Cyanide Code must have their operations that use cyanide to recover gold audited by an independent third party to determine the status of Cyanide Code implementation. Those operations that meet the Cyanide Code requirements can be certified, then require ongoing audits to maintain certification. The Code also requires certified operations to procure and transport cyanide through a Cyanide Code certified producer and transporter. It is the Facility's opinion that the level of process and practice optimization required to maintain Cyanide Code certification is the highest level that the Facility can reasonably be expected to achieve.

2) Compliance with Environmental Legislation Pertaining to the Toxic Substance

The Facility currently complies with all environmental regulations that control the release and disposal of the Toxic Substance, and possesses all applicable environmental approvals including:

- Air and Noise Approvals under s.9 of the Ontario *Environmental Protection Act*;
- Water Discharge Permit under the Ontario *Water Resources Act*; and
- Waste Permit under s.V of the Ontario *Environmental Protection Act*.

The Ontario Ministry of the Environment has stated that the TRA is not intended to focus on these "end of pipe" emissions, however, the fact that the Facility meets or exceeds the strict release limits imposed by these regulations, despite the relatively large amount of the Toxic Substance that is required to be used in order to operate the Facility, is a further indication of optimal use of the Toxic Substance at the Facility.

3) Economic Factors Associated with the Use of the Toxic Substance

The purchase of the lone product that is used at the Facility which contains the Toxic Substance is a significant capital expenditure and therefore optimizing the use of the product which contains the Toxic Substance is in the Facility's best interest as it is directly related to cost control.

Throughout the course of achieving the current level of process and practice optimization with respect to the Toxic Substance, and considering the above noted aspects which influence the Facility's use of the Toxic Substance, the Facility has considered many options to reduce its use of the Toxic Substance and has already completed internal assessments of some initiatives which could constitute toxic substance reduction options that could otherwise be identified for the purposes of this Plan. Some of these initiatives are mentioned within this Plan, however, they have not been provided as toxic substance reduction options for the purposes of this Plan since they have previously been deemed not to be feasible or implemented.

In addition, the Facility is aware that various toxic substance reduction options have been identified for the Toxic Substance by another regulated Goldcorp Facility within Ontario. These options have been reviewed by Facility personnel and are either not applicable to the Facility due to differences in processes or have already been identified for implementation at the Facility. Therefore the toxic substance reduction options for the Toxic Substance that have been identified by another Goldcorp Facility have not been identified for the purpose of the Plan for the Facility. Following current practices, process improvements pertaining to the Toxic Substance that are undertaken at other Goldcorp Facilities are reviewed for feasibility by PGM.

Objectives of the Toxic Substance Reduction Plan

The objectives of this Plan are as follows:

- provide the reader with information on measures currently in place at the Facility which influence the way in which the Toxic Substance is used at the Facility;
- provide support for the Facility's position with respect to the Statement of Intent of this Plan; and
- document how, by preparing this Plan, the Facility has fulfilled the applicable requirements under the TRA and O.Reg.455/09 with respect to the Toxic Substance.

Description of Why the Toxic Substance Is Used or Created

The Toxic Substance is a component of sodium cyanide which is the key reagent used for gold recovery in the Facility's gold milling process. Currently no other reagent is known in the gold ore processing industry to be as effective as sodium cyanide for gold ore processing applications, and therefore this substance is widely used in gold ore processing operations the world over. The Toxic Substance is never created at the Facility.

Rationale for Not Implementing Toxic Substance Reduction Options

As required by s.18(4) of O.Reg.455/09 (as amended by s.9(3) of O.Reg.214/11), a Plan must contain an explanation of why no toxic substance reduction options will be implemented.

Facility personnel have carefully examined each of the seven categories for toxic substance reduction options, and, in light of the information provided in the Statement of Intent section of this Plan, the Facility feels that no toxic substance reduction options can be identified in any of the seven toxic substance reduction categories at this time.

Therefore the rationale for not implementing toxic substance reduction options is that no toxic substance reduction options could be identified.

Statement that the Plan Summary Accurately Reflects the Current Version of the Plan

As required by s.24(1)8 of O.Reg.455/09 this Plan Summary accurately reflects the current version of the Plan.

Planner License Number

As required by s.18(2) of O.Reg.455/09 (as amended by s. 9(2) of O.Reg.214/11), the Licensed Toxic Substance Reduction Planner responsible for providing Planner Recommendations on and certification of this Plan is as follows:

Russell Polack
Air Quality Specialist
Golder Associates Ltd.
Toxic Substance Reduction Planner License Number TSRP0002

Copies of the Certification

Certification statements are provided in the following page.

TOXIC SUBSTANCE REDUCTION PLAN SUMMARY – Hydrochloric Acid

This Toxic Substance Reduction Plan Summary has been prepared in accordance with Section 8(2) of the *Toxics Reduction Act* and satisfies the minimum Plan Summary content requirements stipulated in Section 24 of Ontario Regulation (O.Reg.) 455/09.

Basic Facility Information

Mandatory Basic Facility Information Item	Details
Substance Name and Chemical Abstracts Service (CAS) Registry Number for the Toxic Substance	Hydrochloric Acid (CAS No. 7647-01-0)
National Pollutant Release Inventory (NPRI) and O.Reg.127/01 Identification Numbers	NPRI ID: 1941 O.Reg.127/01 ID: 9490
The legal and trade names of the owner and the operator of the facility, the street address of the facility and the mailing address of the facility, if different	Goldcorp Canada Inc. 4315 Gold Mine Road, South Porcupine, ON P0N1H0 Canada
The number of full time employee equivalents at the facility	643
The two- and four-digit North American Industry Classification System (NAICS) codes and the six-digit NAICS Canada code	21 – Mining & Oil & Gas Extraction 2122 – Metal Ore Mining 212220 – Gold & Silver Ore Mining
Public contact	László Götz Environmental Manager Goldcorp Canada Inc. [address per above] (705) 235 6720
The spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) datum	UTM Zone 17 482866 E, 5368194 N
Parent Company Information	N/A

List of All Substances for which Toxic Substance Reduction Plans Have Been Prepared at the Facility

The Facility has prepared Toxic Substance Reduction Plans for the following prescribed Toxic Substances:

Arsenic*

Cadmium*

Chromium*

Cobalt*

Copper*

Lead*

Manganese*

Nickel*

Zinc*

Vanadium (CAS number 7440-62-2)

Cyanides (Ionic)*

Hydrochloric Acid (CAS number 7647-01-0)

*Per O.Reg.455/09, no single CAS numbers apply to these substances

Statement of Intent

As required by s.4(1) of the TRA, a Plan must include either a statement of the Facility's intent to reduce the use and/or creation of the Toxic Substance at the Facility, or the reasons for not including this statement, as well as objectives of the Plan.

A statement of the Facility's intent to reduce use of the Toxic Substance has not been included as a part of this Plan. The Toxic Substance is never created within the Facility's process and therefore no statement with respect to intent to reduce creation of the Toxic Substance is required.

The Facility is of the opinion it has previously optimized its use of the Toxic Substance using the best available technology and practices that are economically achievable at this time. This opinion is supported by the following three aspects which influence the way in which the Facility uses the Toxic Substance:

1) Plans, Policies and Procedures that Are Currently in Place at the Facility

The Facility currently has several standard policies and procedures in place which dictate practices at the Facility pertaining to the Toxic Substance, from operational and health and safety standpoints. These policies and procedures include the following:

- Hydrochloric Acid Mixing;
- Spill Prevention and Contingency Plan;
- Emergency Response for Liquid Hydrochloric Acid Spill;
- Carbon Acid Washing; and
- Mill Reagent Information Module.

The above noted standard plans, policies and procedures provide a framework for the safe use of hydrochloric acid, as well as step-by-step instructions on how hydrochloric acid is to be used within the Facility process.

The Facility is of the opinion that development and implementation of the above noted policies and procedures result in the safest and most efficient use of the Toxic Substance which can reasonably be expected.

2) Compliance with Environmental Legislation Pertaining to the Toxic Substance

The Facility currently complies with all environmental regulations that control the release and disposal of the Toxic Substance, and possesses all applicable environmental approvals including:

- Air and Noise Approvals under s.9 of the Ontario *Environmental Protection Act*;

- Water Discharge Permit under the Ontario *Water Resources Act*; and
- Waste Permit under s.V of the Ontario *Environmental Protection Act.*

The Ontario Ministry of the Environment has stated that the TRA is not intended to focus on these "end of pipe" emissions, however, the fact that the Facility meets or exceeds the strict release limits imposed by these regulations, despite the relatively large amount of the Toxic Substance that is required to be used in order to operate the Facility, is a further indication of optimal use of the Toxic Substance at the Facility.

3) Economic Factors Associated with the Use of the Toxic Substance

The purchase of the product which contains the Toxic Substance is a significant capital expenditure and therefore optimizing the use of the product which contains the Toxic Substance is in the Facility's best interest as it is directly related to cost control.

Throughout the course of achieving the current level of process and practice optimization with respect to the Toxic Substance, and considering the above noted aspects which influence the Facility's use of the Toxic Substance, the Facility has considered options to reduce its use of the Toxic Substance and has already completed internal assessments of some initiatives which could constitute toxic substance reduction options that could otherwise be identified for the purposes of this Plan. Some of these initiatives are mentioned within this Plan, however, they have not been provided as toxic substance reduction options for the purposes of this Plan since they have previously been deemed not to be feasible or implemented.

Objectives of the Toxic Substance Reduction Plan

The objectives of this Plan are as follows:

- provide the reader with information on measures currently in place at the Facility which influence the way in which the Toxic Substance is used at the Facility;
- provide support for the Facility's position with respect to the Statement of Intent of this Plan; and
- document how, by preparing this Plan, the Facility has fulfilled the applicable requirements under the TRA and O.Reg.455/09 with respect to the Toxic Substance.

Description of Why the Toxic Substance Is Used or Created

Hydrochloric acid is used at the Facility to remove carbonate buildup on the activated carbon that is used to recover gold in the carbon circuit. This use of the Toxic Substance allows for the re-use of the activated carbon within the carbon circuit, which is a significant cost saving measure for the Facility and a common practice within the gold ore processing industry. Currently no other reagent is known in the gold ore processing industry to be as effective as hydrochloric acid for this application. The Toxic Substance is never created at the Facility.

The removal of carbonate build-up is an intermittent process that is completed as needed. The overall volume of hydrochloric acid consumed in relation to the total hours of mill operation and throughput is insignificant.

There is also a small amount of the Toxic Substance that is used in the Facility's assay laboratory. This amount is very minor in comparison to the amount that is used in the Facility's process and therefore this Plan does not focus on this minor use of the Toxic Substance.

Rationale for Not Implementing Toxic Substance Reduction Options

As required by s.18(4) of O.Reg.455/09 (as amended by s.9(3) of O.Reg.214/11), a Plan must contain an explanation of why no toxic substance reduction options will be implemented.

Facility personnel have carefully examined each of the seven categories for toxic substance reduction options, and, in light of the information provided in the Statement of Intent section of this Plan, the Facility feels that no toxic substance reduction options can be identified in any of the seven toxic substance reduction categories at this time.

Therefore the rationale for not implementing toxic substance reduction options is that no toxic substance reduction options could be identified.

Statement that the Plan Summary Accurately Reflects the Current Version of the Plan

As required by s.24(1)8 of O.Reg.455/09 this Plan Summary accurately reflects the current version of the Plan.

Planner License Number

As required by s.18(2) of O.Reg.455/09 (as amended by s. 9(2) of O.Reg.214/11), the Licensed Toxic Substance Reduction Planner responsible for providing Planner Recommendations on and certification of this Plan is as follows:

Russell Polack
Air Quality Specialist
Golder Associates Ltd.
Toxic Substance Reduction Planner License Number TSRP0002

Copies of the Certification

Certification statements are provided in the following page.

TOXIC SUBSTANCE REDUCTION PLAN SUMMARY

This Toxic Substance Reduction Plan Summary has been prepared in accordance with Section 8(2) of the *Toxics Reduction Act* and satisfies the minimum Plan Summary content requirements stipulated in Section 24 of Ontario Regulation (O.Reg.) 455/09.

Basic Facility Information

Mandatory Basic Facility Information Item	Details
Substance Name and Chemical Abstracts Service (CAS) Registry Number for the Substance(s) whose Toxic Substance Reduction Plans are summarized by this this Plan Summary	This Plan Summary applies to the Toxic Substance Reduction Plans for the following prescribed Toxic Substances: Arsenic, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Zinc (Per O.Reg.455/09; "no single CAS numbers apply to these substances") and Vanadium (CAS number 7440-62-2)
National Pollutant Release Inventory (NPRI) and O.Reg.127/01 Identification Numbers	NPRI ID: 1941 O.Reg. 127/01 ID: 9490
The legal and trade names of the owner and the operator of the facility, the street address of the facility and the mailing address of the facility, if different	Goldcorp Porcupine Gold Mines Goldcorp Canada Ltd. 4315 Gold Mine Road, South Porcupine, ON P0N1H0 Canada
The number of full time employee equivalents at the facility	643
The two- and four-digit North American Industry Classification System (NAICS) codes and the six-digit NAICS Canada code	21 – Mining & Oil & Gas Extraction 2122 – Metal Ore Mining 212220 – Gold & Silver Ore Mining
Public contact	László Götz Environmental Manager Goldcorp Canada Inc. [address per above] (705) 235-6720
The spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) datum	UTM Zone 17 482866 E, 5368194 N
Parent Company Information	Goldcorp Inc. Suite 3400-666 Burrard Street, Park Place Vancouver, BC V6C 2X8 (604) 696-3000

List of All Substances for which Toxic Substance Reduction Plans Have Been Prepared at the Facility

The Facility has prepared Toxic Substance Reduction Plans for the following prescribed Toxic Substances:

Arsenic*

Cadmium*

Chromium*

Cobalt*

Copper*

Lead*

Manganese*

Nickel*

Zinc*

Vanadium [CAS number 7440-62-2]

Cyanides (Ionic)*

Hydrochloric Acid [CAS number 7647-01-0]

*Per O.Reg.455/09, "no single CAS numbers apply to these substances"

Statement of Intent

As required by s.4(1) of the TRA, a Plan must include either a statement of the Facility's intent to reduce the use and/or creation of the Toxic Substance at the Facility, or the reasons for not including this statement.

A statement of the Facility's intent to reduce its "use" of the Toxic Substance has not been included as a part of this Plan. The Toxic Substance is never created within the Facility's process and therefore no statement with respect to intent to reduce creation of the Toxic Substance is required.

The Facility is captured by the requirements of the TRA pertaining to the Toxic Substance since the Facility meets the TRA's definition of target facilities "with NAICS codes commencing with the digits 212 (mining – except oil and gas – that processes minerals, but only if the mineral processing at the facility involves the use of chemicals to separate, refine, smelt or concentrate metallic or non-metallic minerals from an ore)" and also triggered the Toxic Substance's TRA reporting threshold, which was adopted by the TRA from National Pollutant Release Inventory (NPRI).

Per guidance pertaining to the Toxic Substance, reporting is triggered if the Toxic Substance was "manufactured, processed, or otherwise used" (MPO) in the previous calendar year in an amount that is greater than a specified quantity. In the Facility's case, and following Ontario Ministry of the Environment (MOE) guidance, processing of ore in which the Toxic Substance occurs naturally, at typical background concentrations and as a component of a mineral, meets the definition of MPO, despite the fact that the Toxic Substance's presence is due to natural occurrence in mined ore and the Toxic Substance travels through the Facility's gold extraction process without undergoing any significant chemical change.

Although the Toxic Substance is present in trace amounts in the processed ore, the Toxic Substance's "use"-based reporting threshold was exceeded due to the large quantity of ore that is processed at the Facility on an annual basis.

As a result, and in accordance with the TRA, this specified quantity has been reported to the MOE as a "use" of the Toxic Substance as a part of a mandatory Toxic Substance quantification, accounting and reporting exercise.

This document satisfies the additional TRA requirement of Toxic Substance Reduction Plan preparation, which requires the Facility to systematically examine opportunities to reduce its "use" of the Toxic Substance. Unlike tracking, accounting, reporting and preparation of a Toxic Substance Reduction Plan which are all requirements; the implementation toxic substance reduction options identified in the Plan (if any) is not a requirement of the TRA or O.Reg.455/09.

The Facility understands the benefits to reducing the use and creation of toxic substances, informing Ontarians about toxic substances in their community and helping Ontario position itself to compete in an increasingly green global economy. However, due to the fact that the only Facility activity which the TRA has defined as a "use" of the Toxic Substance is the processing of ore in which the Toxic Substance occurs naturally, there are no opportunities to reduce the "use" of the Toxic Substance aside from reducing the Facility's ore production.

As a part of fulfilling its requirements under the TRA and O.Reg.455/09, the Facility has prepared a total of nine Toxic Substance Reduction Plans and Plan Summaries for naturally occurring elements which are prescribed toxic substances and whose "use" cannot be reduced based on the factors presented above.

The MOE has stated that the TRA is not intended to focus on "end of pipe" emissions as they don't necessarily have any bearing on the amount of a substance that is "used" or "created," however the Facility would like to take this opportunity to inform the reader of the fact that the Facility currently complies with all environmental regulations that control the release and disposal of the Toxic Substance; meeting or exceeding the strict release limits imposed by these regulations for the Toxic Substance.

Objectives of the Toxic Substance Reduction Plan

The Objectives of the Plan are as follows:

- provide support for the Facility's position with respect to the Statement of Intent by providing an explanation of how the TRA's definition of the word "use", as applied to the Toxic Substance, renders it impossible to reduce the "use" of the Toxic Substance without reducing Facility production;

- provide the reader with an understanding of the nature of the Facility activity which the TRA has defined as a "use" of the Toxic Substance; and

- document how the Facility has fulfilled the applicable requirements under the TRA and O.Reg.455/09 with respect to the Toxic Substance.

Description of Why the Toxic Substance Is Used or Created

As stated elsewhere in this Plan, the Facility activity that the MOE has defined for the purpose of the TRA as a "use" of the Toxic Substance is the handling and processing of mined materials in which the

Toxic Substance occurs naturally, at typical background concentrations in the region and as a component of a mineral. Since the Toxic Substance occurs naturally in mined materials, and the Facility is a mining and mineral processing facility, it is impossible to reduce this "use" of the Toxic Substance without reducing the Facility's ore production. The Toxic Substance simply travels through the Facility process along with all other non-gold materials without undergoing any significant chemical change. It is impossible for the Toxic Substance to be created within the Facility process, since the Toxic Substance is reportable under the TRA and O.Reg.455/09 as an elemental mass contribution to the material in which it may be a component.

Rationale for Not Implementing Toxic Substance Reduction Options

As required by s.18(4) of O.Reg.455/09 (as amended by s.9(3) of O.Reg.214/11), a Plan must contain an explanation of why no toxic substance reduction options will be implemented.

Facility personnel have considered each of the seven categories for toxic substance reduction options, and, in light of the information provided in the Statement of Intent section of this Plan, the Facility feels that no toxic substance reduction options can be identified in any of the seven toxic substance reduction categories.

Therefore the rationale for not implementing toxic substance reduction options is that no toxic substance reduction options could be identified.

Statement that the Plan Summary Accurately Reflects the Current Version of the Plan

As required by s.24(1)8 of O.Reg.455/09 this Plan Summary accurately reflects the current version of the Plan.

Planner License Number

As required by s.18(2) of O.Reg.455/09 (as amended by s. 9(2) of O.Reg.214/11), the Licensed Toxic Substance Reduction Planner responsible for providing Planner Recommendations on and certification of this Plan is as follows:

Russell Polack
Air Quality Specialist
Golder Associates Ltd.
Toxic Substance Reduction Planner License Number TSRP0002

Copies of the Certification

Certification statements are provided in the following page.

TOXIC SUBSTANCE REDUCTION PLAN SUMMARY

This Toxic Substance Reduction Plan Summary has been prepared in accordance with Section 8(2) of the *Toxics Reduction Act* and satisfies the minimum Plan Summary content requirements stipulated in Section 24 of Ontario Regulation (O.Reg.) 455/09.

Basic Facility Information

Mandatory Basic Facility Information Item	Details
Substance Name and Chemical Abstracts Service (CAS) Registry Number for the Substance(s) whose Toxic Substance Reduction Plans are summarized by this this Plan Summary	This Plan Summary applies to the Toxic Substance Reduction Plans for the following prescribed Toxic Substances: Particulate Matter, PM10, PM2.5 (Per O.Reg.455/09; "no single CAS numbers apply to these substances")
National Pollutant Release Inventory (NPRI) and O.Reg.127/01 Identification Numbers	NPRI ID: 1941 O.Reg.127/01 ID: 9490
The legal and trade names of the owner and the operator of the facility, the street address of the facility and the mailing address of the facility, if different	Goldcorp Porcupine Gold Mines Goldcorp Canada Ltd. 4315 Gold Mine Road, South Porcupine, ON P0N1H0 Canada
The number of full time employee equivalents at the facility	745
The two- and four-digit North American Industry Classification System (NAICS) codes and the six-digit NAICS Canada code	21 – Mining & Oil & Gas Extraction 2122 – Metal Ore Mining 212220 – Gold & Silver Ore Mining
Public contact	Kathy-Lynn Morrish Environmental Compliance Coordinator Goldcorp Canada Inc. [address per above] (705) 235-6720
The spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) datum	UTM Zone 17 482866 E, 5368194 N
Parent Company Information	Goldcorp Inc. Suite 3400-666 Burrard Street, Park Place Vancouver, BC V6C 2X8 (604) 696-3000

List of All Substances for which Toxic Substance Reduction Plans Have Been Prepared at the Facility

The Facility has prepared Toxic Substance Reduction Plans for the following prescribed Toxic Substances:

Arsenic*

Cadmium*

Chromium*

Cobalt*

Copper*

Lead*

Manganese*

Nickel*

Zinc*

Vanadium [CAS number 7440-62-2]

Cyanides (Ionic)*

Hydrochloric Acid [CAS number 7647-01-0]

Particulate Matter*

PM10*

PM2.5*

Nitrogen Oxides [CAS number 11104-93-1]

Carbon Monoxide [CAS number 630-08-0]

Ammonia (Total)*

Nitrate Ion*

*Per O.Reg.455/09, "no single CAS numbers apply to these substances"

Statement of Intent

As required by s.4(1) of the TRA, a Plan must include either a statement of the Facility's intent to reduce the use and/or creation of the Toxic Substance at the Facility, or the reasons for not including this statement.

A statement of the Facility's intent to reduce its "creation" of the Toxic Substance has not been included as a part of this Plan. The Toxic Substance is not "used" in the Facility process and therefore no statement with respect to intent to reduce use of the Toxic Substance is required.

The Toxic Substance has triggered reporting under the TRA and O. Reg. 455/09 due to two activities at the Facility which are interpreted as "creations" of the Toxic Substance under the TRA framework. The first activity that has been classified as a "creation" of the Toxic Substance for the purpose of the required TRA Quantification, Accounting and Reporting exercise for the Toxic Substances is the generation by physical means of suspended particulate matter in various size fractions commonly referred to as dust; which is subsequently released either as stack or fugitive emissions.

The second activity that has been classified as a "creation" of the Toxic Substance is the generation of suspended particulate matter as a by-product of combustion of fuels in stationary equipment.

The Ontario Ministry of the Environment has stated that the TRA is not intended to focus on "end of pipe" emissions as they don't necessarily have any bearing on the amount of a substance that is "used" or "created," however in this case, "end of pipe" emissions of suspended particulate matter is the determining factor of the Facility's TRA reporting status with respect to the Toxic Substance.

Despite the Facility's reporting status with respect to the Toxic Substance, the Facility feels that it has previously optimized its control of the "creation" and subsequent release of the Toxic Substance to the greatest extent that can reasonably be expected. This opinion is supported by the following two aspects:

Compliance with Regulatory Requirements

It is well documented that release of suspended particulate matter is an inherent by-product of mining and mineral processing and that the activities leading to the release of suspended particulate matter are essential to the process of mining and mineral processing. In recognition of this, the MOE has imposed various regulatory requirements related to the release of suspended particulate matter, which include:

- Ontario Regulation 419/05, under which a Facility must demonstrate compliance with substance-specific ground-level concentration limits of emitted substances, including suspended particulate matter in all forms that are reportable under the NPRI and TRA reporting programs.
- The requirement for any Facility that may discharge any contaminant to the atmosphere to apply for and obtain an Environmental Compliance Approval (ECA) for air which approves the facility's emissions and provides performance limits, documentation requirements and reporting requirements which a Facility must meet in order to maintain compliance with the ECA on an ongoing basis.

- The requirement for qualifying a facility to prepare and implement a "Fugitive Dust Best Management Practices Plan." This document outlines controls in place with respect to minimizing suspended particulate matter releases in the form fugitive dust at the facility, along with the decision making process that was used to identify fugitive dust emission sources and to develop appropriate best management practices for each type of source. A qualifying facility's Fugitive Dust Best Management Practices Plan must be approved by the MOE as a part of the ECA implementation process.

- The requirement to prepare and implement an Operations and Maintenance Manual which outlines operating procedures and maintenance programs for processes with what the MOE refers to as "Significant Environmental Impacts." This document assists Facility personnel in operating the Facility in a manner that minimizes the potential for environmental impacts and is also a part of the ECA implementation process.

The Facility currently meets and/or exceeds all of the above regulatory requirements which are designed to control the release of the Toxic Substance and minimize potential off-site impacts resulting from the release of the Toxic Substance.

Measures Currently in Place to Minimize Releases of Suspended Particulate Matter

As a result of satisfying all of the above noted regulatory requirements in addition to voluntary actions with respect to suspended particulate matter releases, the Facility actively implements a variety of controls to minimize suspended particulate matter releases from different parts of its process components. These controls include, but are not limited to, the following:

- Implementation of the controls outlined in the Facility's Fugitive Dust Best Management Practices Plan, which was developed in consultation with the MOE; such as:
  - roadway watering, supplemented by application of chemical dust suppressants, enforcement of speed limits, roadway maintenance and cleanup procedures;
  - covering of outdoor conveyors;
  - operation of several baghouses and/or dust collectors serving various process components to minimize suspended particulate matter. This equipment is actively, inspected and maintained in accordance with the terms and conditions of the Facility's ECA, or according to Manufacturer's specifications; and
  - training of operators to identify and promptly respond to malfunctions or abnormal operating conditions that result in excessive suspended particulate emissions.
- Measures in place to minimize fuel consumption including, but not limited to the implementation of an equipment idling policy.

Objectives of the Toxic Substance Reduction Plan

The Objectives of the Plan are as follows:

- provide the reader with information on measures currently in place at the Facility which control the "creation" and subsequent release of the Toxic Substance;
- provide support for the Facility's position with respect to the Statement of Intent of this Plan; and
- document how the Facility has fulfilled the applicable requirements under the TRA and O.Reg.455/09 with respect to the Toxic Substance.

Description of Why the Toxic Substance Is Used or Created

The Toxic Substance has triggered reporting under the TRA and O.Reg.455/09 due to two activities at the Facility which are defined as "creations" of the Toxic Substance under the TRA framework. The first activity that has been classified as a "creation" of the Toxic Substance is the generation by physical means of suspended particulate matter in various size fractions as dust; which is subsequently released either as stack or fugitive emissions. The second activity that has been classified as a "creation" of the Toxic Substance is the generation of particulate matter as a by-product of combustion of fuels in stationary equipment. The Toxic Substance is not used in the Facility process.

For the purpose of the required TRA Quantification, Accounting and Reporting exercise for the Toxic Substance, the calculated "release" values have been assumed to be equal to the amount "created" for each emission source, despite the fact that some of these releases are controlled releases. Section 12(6) of O.Reg.455/09 provides considerations for determining the "Best Available Methods" for tracking and quantifying the Toxic Substance. MOE guidance pertaining to this section of O.Reg.455/09 states that the importance of selecting Best Available Methods is to provide the best decision making information when determining which toxics reduction options, if any, are worthwhile to implement. It should be noted that, given the Facility's decision to not include in this Plan a statement of its intent to reduce the "creation" of the Toxic Substance (as supported by the information provided in the Statement of Intent section of the Plan), no decisions will be made with respect to toxics reduction based on the calculated "creation" values for the Toxic Substance. Taking this into consideration, the Facility used judgement based on relevance and effort required to obtain information and feels that it has gone to reasonable efforts in identifying and applying the Best Available Methods for quantifications in this case.

Rationale for Not Implementing Toxic Substance Reduction Options

As required by s.18(4) of O.Reg.455/09 (as amended by s.9(3) of O.Reg.214/11), a Plan must contain an explanation of why no toxic substance reduction options will be implemented.

Facility personnel have considered each of the seven categories for toxic substance reduction options, and, in light of the information provided in the Statement of Intent section of this Plan, the Facility feels that no toxic substance reduction options can be identified in any of the seven toxic substance reduction categories.

Therefore the rationale for not implementing toxic substance reduction options is that no toxic substance reduction options could be identified.

Statement that the Plan Summary Accurately Reflects the Current Version of the Plan

As required by s.24(1)8 of O.Reg.455/09 this Plan Summary accurately reflects the current version of the Plan.

Planner License Number

As required by s.18(2) of O.Reg.455/09 (as amended by s. 9(2) of O.Reg.214/11), the Licensed Toxic Substance Reduction Planner responsible for providing Planner Recommendations on and certification of this Plan is as follows:

Russell Polack
Air Quality Specialist
Golder Associates Ltd.
Toxic Substance Reduction Planner License Number TSRP0002

Copies of the Certification

Certification statements are provided in the following page.

TOXIC SUBSTANCE REDUCTION PLAN SUMMARY

This Toxic Substance Reduction Plan Summary has been prepared in accordance with Section 8(2) of the *Toxics Reduction Act* and satisfies the minimum Plan Summary content requirements stipulated in Section 24 of Ontario Regulation (O.Reg.) 455/09.

Basic Facility Information

Mandatory Basic Facility Information Item	Details
Substance Name and Chemical Abstracts Service (CAS) Registry Number for the Substance(s) whose Toxic Substance Reduction Plans are summarized by this this Plan Summary	This Plan Summary applies to the Toxic Substance Reduction Plans for the following prescribed Toxic Substances: Nitrogen Oxides (CAS number 11104-93-1), Carbon Monoxide (CAS number 630-08-0)
National Pollutant Release Inventory (NPRI) and O.Reg.127/01 Identification Numbers	NPRI ID: 1941 O.Reg.127/01 ID: 9490
The legal and trade names of the owner and the operator of the facility, the street address of the facility and the mailing address of the facility, if different	Goldcorp Porcupine Gold Mines Goldcorp Canada Ltd. 4315 Gold Mine Road, South Porcupine, ON P0N1H0 Canada
The number of full time employee equivalents at the facility	745
The two- and four-digit North American Industry Classification System (NAICS) codes and the six-digit NAICS Canada code	21 – Mining & Oil & Gas Extraction 2122 – Metal Ore Mining 212220 – Gold & Silver Ore Mining
Public contact	Kathy-Lynn Morrish Environmental Compliance Coordinator Goldcorp Canada Inc. [address per above] (705) 235-6720
The spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) datum	UTM Zone 17 482866 E, 5368194 N
Parent Company Information	Goldcorp Inc. Suite 3400-666 Burrard Street, Park Place Vancouver, BC V6C 2X8 (604) 696-3000

List of All Substances for which Toxic Substance Reduction Plans Have Been Prepared at the Facility

The Facility has prepared Toxic Substance Reduction Plans for the following prescribed Toxic Substances:

Arsenic*

Cadmium*

Chromium*

Cobalt*

Copper*

Lead*

Manganese*

Nickel*

Zinc*

Vanadium [CAS number 7440-62-2]

Cyanides (Ionic)*

Hydrochloric Acid [CAS number 7647-01-0]

Particulate Matter*

PM10*

PM2.5*

Nitrogen Oxides [CAS number 11104-93-1]

Carbon Monoxide [CAS number 630-08-0]

Ammonia (Total)*

Nitrate Ion*

*Per O.Reg.455/09, "no single CAS numbers apply to these substances"

Statement of Intent

As required by s.4(1) of the TRA, a Plan must include either a statement of the Facility's intent to reduce the use and/or creation of the Toxic Substance at the Facility, or the reasons for not including this statement.

A statement of the Facility's intent to reduce its "creation" of the Toxic Substance has not been included as a part of this Plan. The Toxic Substance cannot be "used" in the Facility process and therefore no statement with respect to intent to reduce use of the Toxic Substance is required.

The Toxic Substance has triggered reporting under the TRA and O.Reg.455/09 due to its generation as a by-product of combustion of fuels in stationary equipment or detonation of explosives, both of which are classified as a "creation" of the Toxic Substance for the purpose of the required TRA Quantification, Accounting and Reporting exercise for the Toxic Substance.

The Ontario Ministry of the Environment has stated that the TRA is not intended to focus on "end of pipe" emissions as they don't necessarily have any bearing on the amount of a substance that is "used" or "created," however in this case, "end of pipe" emission of the Toxic Substance are the determining factor of the Facility's TRA reporting status with respect to the Toxic Substance.

Despite the Facility's reporting status with respect to the Toxic Substance, the Facility feels that it has previously optimized its control of the "creation" and subsequent release of the Toxic Substance to the

greatest extent that can reasonably be expected. This opinion is supported by the following two aspects:

Compliance with Regulatory Requirements

It is well documented that the release of combustion products such as the Toxic Substance is an inherent by-product of mining and mineral processing and that the activities leading to the release of combustion products are essential to the process of mining and mineral processing. In recognition of this, the MOE has imposed various regulatory requirements related to the release of combustion products, which include:

- Ontario Regulation 419/05, under which a Facility must demonstrate compliance with substance-specific ground-level concentration limits of emitted substances, including combustion products in all forms that are reportable under the NPRI and TRA reporting programs.
- The requirement for any Facility that may discharge any contaminant to the atmosphere to apply for and obtain an Environmental Compliance Approval (ECA) for air which approves the facility's emissions and provides performance limits, documentation requirements and reporting requirements which a Facility must meet in order to maintain compliance with the ECA on an ongoing basis.

The Facility currently meets and/or exceeds all of the above regulatory requirements which are designed to control the release of the Toxic Substance and minimize potential off-site impacts resulting from the release of the Toxic Substance.

Measures Currently in Place to Minimize Releases of Combustion Products

As a result of satisfying all of the above noted regulatory requirements in addition to voluntary actions with respect to combustion product releases, the Facility actively implements a variety of controls to minimize combustion product releases from different parts of its process components. These controls include, but are not limited to, the following:

- Measures in place to minimize fuel consumption including, but not limited the implementation of an equipment idling policy.
- Through mining engineering practices and industry best practices, explosives usage at the facility is continually being optimized.

Objectives of the Toxic Substance Reduction Plan

- provide the reader with information on measures currently in place at the Facility which control the "creation" and subsequent release of the Toxic Substance;
- provide support for the Facility's position with respect to the Statement of Intent of this Plan; and
- document how the Facility has fulfilled the applicable requirements under the TRA and O.Reg.455/09 with respect to the Toxic Substance.

Description of Why the Toxic Substance Is Used or Created

The activity that has been classified as a "creation" of the toxic substance for the purpose of the required TRA Quantification, Accounting and Reporting exercise for the Toxic Substance is the generation of the Toxic Substance as a by-product of combustion of fuels in stationary equipment and detonation of explosives. The Toxic Substance is not used in the Facility process.

Rationale for Not Implementing Toxic Substance Reduction Options

As required by s.18(4) of O.Reg.455/09 (as amended by s.9(3) of O.Reg.214/11), a Plan must contain an explanation of why no toxic substance reduction options will be implemented.

Facility personnel have considered each of the seven categories for toxic substance reduction options, and, in light of the information provided in the Statement of Intent section of this Plan, the Facility feels that no toxic substance reduction options can be identified in any of the seven toxic substance reduction categories.

Therefore the rationale for not implementing toxic substance reduction options is that no toxic substance reduction options could be identified.

Statement that the Plan Summary Accurately Reflects the Current Version of the Plan

As required by s.24(1)8 of O.Reg.455/09 this Plan Summary accurately reflects the current version of the Plan.

Planner License Number

As required by s.18(2) of O.Reg.455/09 (as amended by s. 9(2) of O.Reg.214/11), the Licensed Toxic Substance Reduction Planner responsible for providing Planner Recommendations on and certification of this Plan is as follows:

Russell Polack
Air Quality Specialist
Golder Associates Ltd.
Toxic Substance Reduction Planner License Number TSRP0002

Copies of the Certification

Certification statements are provided in the following page.

TOXIC SUBSTANCE REDUCTION PLAN SUMMARY

This Toxic Substance Reduction Plan Summary has been prepared in accordance with Section 8(2) of the *Toxics Reduction Act* and satisfies the minimum Plan Summary content requirements stipulated in Section 24 of Ontario Regulation (O.Reg.) 455/09.

Basic Facility Information

Mandatory Basic Facility Information Item	Details
Substance Name and Chemical Abstracts Service (CAS) Registry Number for the Substance(s) whose Toxic Substance Reduction Plans are summarized by this this Plan Summary	Ammonia (Total) (Per O.Reg.455/09, "no single CAS numbers apply to these substances")
National Pollutant Release Inventory (NPRI) and O.Reg.127/01 Identification Numbers	NPRI ID: 1941 O.Reg.127/01 ID: 9490
The legal and trade names of the owner and the operator of the facility, the street address of the facility and the mailing address of the facility, if different	Goldcorp Porcupine Gold Mines Goldcorp Canada Ltd. 4315 Gold Mine Road, South Porcupine, ON P0N1H0 Canada
The number of full time employee equivalents at the facility	745
The two- and four-digit North American Industry Classification System (NAICS) codes and the six-digit NAICS Canada code	21 – Mining & Oil & Gas Extraction 2122 – Metal Ore Mining 212220 – Gold & Silver Ore Mining
Public contact	Kathy-Lynn Morrish Environmental Compliance Coordinator Goldcorp Canada Inc. [address per above] (705) 235-6720
The spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) datum	UTM Zone 17 482866 E, 5368194 N
Parent Company Information	Goldcorp Inc. Suite 3400-666 Burrard Street, Park Place Vancouver, BC V6C 2X8 (604) 696-3000

List of All Substances for which Toxic Substance Reduction Plans Have Been Prepared at the Facility

The Facility has prepared Toxic Substance Reduction Plans for the following prescribed Toxic Substances:

Arsenic*

Cadmium*

Chromium*

Cobalt*

Copper*

Lead*

Manganese*

Nickel*

Zinc*

Vanadium [CAS number 7440-62-2]

Cyanides (Ionic)*

Hydrochloric Acid [CAS number 7647-01-0]

Particulate Matter*

PM10*

PM2.5*

Nitrogen Oxides [CAS number 11104-93-1]

Carbon Monoxide [CAS number 630-08-0]

Ammonia (Total)*

Nitrate Ion*

*Per O.Reg.455/09, "no single CAS numbers apply to these substances"

Statement of Intent

As required by s.4(1) of the TRA, a Plan must include either a statement of the Facility's intent to reduce the use and/or creation of the Toxic Substance at the Facility, or the reasons for not including this statement.

A statement of the Facility's intent to reduce the "creation" of the Toxic Substance has not been included as a part of this Plan. The Toxic Substance is not used within the Facility's process and therefore no statement with respect to intent to reduce creation of the Toxic Substance is required.

The Toxic Substance has triggered reporting under the TRA and O.Reg.455/09 due to two activities at the Facility which are interpreted as "creations" of the Toxic Substance under the TRA framework. The first activity that has been classified as a "creation" of the Toxic Substance for the purpose of the required TRA Quantification, Accounting and Reporting exercise for the Toxic Substances is the generation of the Toxic Substance as a dissolved residue in effluent which is a by-product of explosives detonation within the underground mining operations at the Facility.

The Facility is of the opinion that it has previously optimized its use of explosives to greatest extent that can reasonably be expected. Furthermore, the use of explosives is directly linked to the Facility's production and therefore, given the previously optimized use of explosives, the use of explosives cannot be reduced without negatively impacting Facility production.

Through mining engineering practices and industry best practices, explosives usage at the facility is continually being optimized. Specifically, emulsion products has been implemented as these products are much less soluble in water. ANFO explosives are used in bulk which minimizes spillage as compared to traditional dry bagged explosives. Explosives usage is a vital component of the Facility's mining operations and therefore has a direct impact on production. In addition to optimizing use of products which result in the presence of the Toxic Substance in effluent, the Facility also implements measures to minimize the release of the Toxic Substance to the environment, which include two polishing ponds through which mine water flow to minimize off-site release of the Toxic Substance. Treatment wetland systems are effective in destroying the Toxic Substance prior to final discharge, since nitrogen species in constructed and natural wetlands can be transformed by five possible processes; nitrification, denitrification, volatilization, adsorption, and plant uptake.

The second activity that has been classified as a "creation" of the Toxic Substance is the generation and subsequent release to air of the Toxic Substance as a by-product of various chemical reactions in the Facility's concentrating and refining process. These reactions are considered by the Facility to be unavoidable and take place in process components which are essential to the Facility's ability to produce its final product.

Furthermore, as noted in the document entitled "Toxic Substance Reduction Plan Cyanides (Ionic)" (Version 1.0, dated December 18, 2012), the Facility is of the opinion that it has optimized its use of the product which contains cyanide, the breakdown of which is responsible for "creating" some amounts of the Toxic Substance, using the best available technology and practices that are economically achievable at this time, and therefore no reductions in the use of that product can reasonably be expected.

It should also be noted that Facility currently meets and/or exceeds all regulatory requirements which are designed to control the release of the Toxic Substance and minimize potential off-site impacts resulting from the release of the Toxic Substance.

Objectives of the Toxic Substance Reduction Plan

- provide the reader with information on measures currently in place at the Facility which control the "creation" of the Toxic Substance;
- provide support for the Facility's position with respect to the Statement of Intent of this Plan; and
- document how the Facility has fulfilled the applicable requirements under the TRA and O.Reg.455/09 with respect to the Toxic Substance.

Description of Why the Toxic Substance Is Used or Created

The Toxic Substance has triggered reporting under the TRA and O.Reg.455/09 due to two activities at the Facility which are defined as "creations" of the Toxic Substance under the TRA framework. The first activity that has been classified as a "creation" of the Toxic Substance for the purpose of the required TRA Quantification, Accounting and Reporting exercise for the Toxic Substance is the generation of the Toxic Substance as a dissolved residue in effluent which results from explosives detonation within the mining operations.

For the purpose of the required TRA Quantification, Accounting and Reporting exercise for the Toxic Substance, the calculated "release to water" values have been assumed to be equal to a corresponding amount "created," despite the fact that these releases are controlled releases. Section 12(6) of O.Reg.455/09 provides considerations for determining the "Best Available Methods" for tracking and quantifying the Toxic Substance. MOE guidance pertaining to this section of O.Reg.455/09 states that the importance of selecting Best Available Methods is to provide the best decision making information when determining which toxics reduction options, if any, are worthwhile to implement. It should be noted that, given the Facility's decision to not include in this Plan a statement of its intent to reduce the "creation" of the Toxic Substance (as supported by the information provided in the Statement of Intent section of the Plan), no decisions will be made with respect to toxics reduction based on the calculated "creation" values for the Toxic Substance. Taking this into consideration, the Facility used judgement based on relevance and effort required to obtain information and feels that it has gone to reasonable efforts in identifying and applying the Best Available Methods for quantifications in this case.

The second activity that has been classified as a "creation" of the Toxic Substance is the generation and subsequent release to air of the Toxic Substance as a by-product of various chemical reactions in the Facility's concentrating and refining process.

The Toxic Substance is not used in the Facility process.

Rationale for Not Implementing Toxic Substance Reduction Options

As required by s.18(4) of O.Reg.455/09 (as amended by s.9(3) of O.Reg.214/11), a Plan must contain an explanation of why no toxic substance reduction options will be implemented.

Facility personnel have considered each of the seven categories for toxic substance reduction options, and, in light of the information provided in the Statement of Intent section of this Plan, the Facility feels that no toxic substance reduction options can be identified in any of the seven toxic substance reduction categories.

Therefore the rationale for not implementing toxic substance reduction options is that no toxic substance reduction options could be identified.

Statement that the Plan Summary Accurately Reflects the Current Version of the Plan

As required by s.24(1)8 of O.Reg.455/09 this Plan Summary accurately reflects the current version of the Plan.

Planner License Number

As required by s.18(2) of O.Reg.455/09 (as amended by s. 9(2) of O.Reg.214/11), the Licensed Toxic Substance Reduction Planner responsible for providing Planner Recommendations on and certification of this Plan is as follows:

Russell Polack
Air Quality Specialist
Golder Associates Ltd.
Toxic Substance Reduction Planner License Number TSRP0002

Copies of the Certification

Certification statements are provided in the following page.

TOXIC SUBSTANCE REDUCTION PLAN SUMMARY

This Toxic Substance Reduction Plan Summary has been prepared in accordance with Section 8(2) of the *Toxics Reduction Act* and satisfies the minimum Plan Summary content requirements stipulated in Section 24 of Ontario Regulation (O.Reg.) 455/09.

Basic Facility Information

Mandatory Basic Facility Information Item	Details
Substance Name and Chemical Abstracts Service (CAS) Registry Number for the Substance(s) whose Toxic Substance Reduction Plans are summarized by this this Plan Summary	Nitrate Ion (Per O.Reg.455/09, "no single CAS numbers apply to these substances")
National Pollutant Release Inventory (NPRI) and O.Reg.127/01 Identification Numbers	NPRI ID: 1941 O.Reg.127/01 ID: 9490
The legal and trade names of the owner and the operator of the facility, the street address of the facility and the mailing address of the facility, if different	Goldcorp Porcupine Gold Mines Goldcorp Canada Ltd. 4315 Gold Mine Road, South Porcupine, ON P0N1H0 Canada
The number of full time employee equivalents at the facility	745
The two- and four-digit North American Industry Classification System (NAICS) codes and the six-digit NAICS Canada code	21 – Mining & Oil & Gas Extraction 2122 – Metal Ore Mining 212220 – Gold & Silver Ore Mining
Public contact	Kathy-Lynn Morrish Environmental Compliance Coordinator Goldcorp Canada Inc. [address per above] (705) 235-6720
The spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) datum	UTM Zone 17 482866 E, 5368194 N
Parent Company Information	Goldcorp Inc. Suite 3400-666 Burrard Street, Park Place Vancouver, BC V6C 2X8 (604) 696-3000

List of All Substances for which Toxic Substance Reduction Plans Have Been Prepared at the Facility

The Facility has prepared Toxic Substance Reduction Plans for the following prescribed Toxic Substances:

Arsenic*

Cadmium*

Chromium*

Cobalt*

Copper*

Lead*

Manganese*

Nickel*

Zinc*

Vanadium [CAS number 7440-62-2]

Cyanides (Ionic)*

Hydrochloric Acid [CAS number 7647-01-0]

Particulate Matter*

PM10*

PM2.5*

Nitrogen Oxides [CAS number 11104-93-1]

Carbon Monoxide [CAS number 630-08-0]

Ammonia (Total)*

Nitrate Ion*

*Per O.Reg.455/09, "no single CAS numbers apply to these substances"

Statement of Intent

As required by s.4(1) of the TRA, a Plan must include either a statement of the Facility's intent to reduce the use and/or creation of the Toxic Substance at the Facility, or the reasons for not including this statement.

A statement of the Facility's intent to reduce the "creation" of the Toxic Substance has not been included as a part of this Plan. The Toxic Substance is not used within the Facility's process and therefore no statement with respect to intent to reduce use of the Toxic Substance is required.

The activity that has been classified as a "creation" of the Toxic Substance for the purpose of the required TRA Quantification, Accounting and Reporting exercise for the Toxic Substances is the

generation of the Toxic Substance as a dissolved residue in effluent which is a by-product of explosives detonation within the underground mining operations at the Facility.

The Facility is of the opinion that it has previously optimized its use of explosives to greatest extent that can reasonably be expected. Furthermore, the use of explosives is directly linked to the Facility's production and therefore, given the previously optimized use of explosives, the use of explosives cannot be reduced without negatively impacting Facility production.

Through mining engineering practices and industry best practices, explosives usage at the facility is continually being optimized. Specifically, emulsion products has been implemented as these products are much less soluble in water. ANFO explosives are used in bulk which minimizes spillage as compared to traditional dry bagged explosives. Explosives usage is a vital component of the Facility's mining operations and therefore has a direct impact on production. In addition to optimizing use of products which result in the presence of the Toxic Substance in effluent, the Facility also implements measures to minimize the release of the Toxic Substance to the environment, which include a two polishing ponds through which mine water flow to minimize off-site release of the Toxic Substance. Treatment wetland systems are effective in destroying the Toxic Substance prior to final discharge, since nitrogen species in constructed and natural wetlands can be transformed by five possible processes; nitrification, denitrification, volatilization, adsorption, and plant uptake.

It should also be noted that Facility currently meets and/or exceeds all regulatory requirements which are designed to control the release of the Toxic Substance and minimize potential off-site impacts resulting from the release of the Toxic Substance.

Objectives of the Toxic Substance Reduction Plan

The Objectives of the Plan are as follows:

- provide the reader with information on measures currently in place at the Facility which control the "creation" of the Toxic Substance;
- provide support for the Facility's position with respect to the Statement of Intent of this Plan; and
- document how the Facility has fulfilled the applicable requirements under the TRA and O.Reg.455/09 with respect to the Toxic Substance.

Description of Why the Toxic Substance Is Used or Created

The activity that has been classified as a "creation" of the Toxic Substance for the purpose of the required TRA Quantification, Accounting and Reporting exercise for the Toxic Substance is the generation of the Toxic Substance as a dissolved residue in effluent which results from explosives detonation within the mining operations.

For the purpose of the required TRA Quantification, Accounting and Reporting exercise for the Toxic Substance, the calculated "release" values have been assumed to be equal to the amount "created," despite the fact that these releases are controlled releases. Section 12(6) of O.Reg.455/09 provides considerations for determining the "Best Available Methods" for tracking and quantifying the Toxic

Substance. MOE guidance pertaining to this section of O.Reg.455/09 states that the importance of selecting Best Available Methods is to provide the best decision making information when determining which toxics reduction options, if any, are worthwhile to implement. It should be noted that, given the Facility's decision to not include in this Plan a statement of its intent to reduce the "creation" of the Toxic Substance (as supported by the information provided in the Statement of Intent section of the Plan), no decisions will be made with respect to toxics reduction based on the calculated "creation" values for the Toxic Substance. Taking this into consideration, the Facility used judgement based on relevance and effort required to obtain information and feels that it has gone to reasonable efforts in identifying and applying the Best Available Methods for quantifications in this case.

The Toxic Substance is not used in the Facility process.

Rationale for Not Implementing Toxic Substance Reduction Options

As required by s.18(4) of O.Reg.455/09 (as amended by s.9(3) of O.Reg.214/11), a Plan must contain an explanation of why no toxic substance reduction options will be implemented.

Facility personnel have considered each of the seven categories for toxic substance reduction options, and, in light of the information provided in the Statement of Intent section of this Plan, the Facility feels that no toxic substance reduction options can be identified in any of the seven toxic substance reduction categories.

Therefore the rationale for not implementing toxic substance reduction options is that no toxic substance reduction options could be identified.

Statement that the Plan Summary Accurately Reflects the Current Version of the Plan

As required by s.24(1)8 of O.Reg.455/09 this Plan Summary accurately reflects the current version of the Plan.

Planner License Number

As required by s.18(2) of O.Reg.455/09 (as amended by s. 9(2) of O.Reg.214/11), the Licensed Toxic Substance Reduction Planner responsible for providing Planner Recommendations on and certification of this Plan is as follows:

Russell Polack
Air Quality Specialist
Golder Associates Ltd.
Toxic Substance Reduction Planner License Number TSRP0002

Copies of the Certification

Certification statements are provided in the following page.

TOXIC SUBSTANCE REDUCTION PLAN SUMMARY

This Toxic Substance Reduction Plan Summary has been prepared in accordance with Section 8(2) of the *Toxics Reduction Act* and satisfies the minimum Plan Summary content requirements stipulated in Section 24 of Ontario Regulation (O.Reg.) 455/09.

Basic Facility Information

Mandatory Basic Facility Information Item	Details
Substance Name and Chemical Abstracts Service (CAS) Registry Number for the Substance(s) whose Toxic Substance Reduction Plans are summarized by this this Plan Summary	Mercury (Per O.Reg.455/09, "no single CAS numbers applies to this substance")
National Pollutant Release Inventory (NPRI) and O.Reg.127/01 Identification Numbers	NPRI ID: 1941 O.Reg.127/01 ID: 9490
The legal and trade names of the owner and the operator of the facility, the street address of the facility and the mailing address of the facility, if different	Goldcorp Porcupine Gold Mines Goldcorp Canada Ltd. 4315 Gold Mine Road, South Porcupine, ON P0N1H0 Canada
The number of full time employee equivalents at the facility	676
The two- and four-digit North American Industry Classification System (NAICS) codes and the six-digit NAICS Canada code	21 – Mining & Oil & Gas Extraction 2122 – Metal Ore Mining 212220 – Gold & Silver Ore Mining
Public contact	Kathy-Lynn Morrish Environmental Compliance Coordinator Goldcorp Canada Inc. [address per above] (705) 235-6720
The spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) datum	UTM Zone 17 482866 E, 5368194 N
Parent Company Information	Goldcorp Inc. Suite 3400-666 Burrard Street, Park Place Vancouver, BC V6C 2X8 (604) 696-3000

List of All Substances for which Toxic Substance Reduction Plans Have Been Prepared at the Facility

The Facility has prepared Toxic Substance Reduction Plans for the following prescribed Toxic Substances:

Arsenic*

Cadmium*

Chromium*

Cobalt*

Copper*

Lead*

Manganese*

Nickel*

Zinc*

Vanadium [CAS number 7440-62-2]

Cyanides (Ionic)*

Hydrochloric Acid [CAS number 7647-01-0]

Particulate Matter*

PM10*

PM2.5*

Nitrogen Oxides [CAS number 11104-93-1]

Carbon Monoxide [CAS number 630-08-0]

Ammonia (Total)*

Nitrate Ion*

Mercury*

*Per O.Reg.455/09, "no single CAS numbers apply to these substances"

Statement of Intent

As required by s.4(1) of the TRA, a Plan must include either a statement of the Facility's intent to reduce the use and/or creation of the Toxic Substance at the Facility, or the reasons for not including this statement.

A statement of the Facility's intent to reduce its "use" of the Toxic Substance has not been included as a part of this Plan. The Toxic Substance is never created within the Facility's process and therefore no statement with respect to intent to reduce creation of the Toxic Substance is required.

The Facility is captured by the requirements of the TRA pertaining to the Toxic Substance since the Facility meets the TRA's definition of target facilities "with North American Industry Classification System (NAICS) codes commencing with the digits 212 (mining – except oil and gas – that processes minerals, but only if the mineral processing at the facility involves the use of chemicals to separate, refine, smelt or concentrate metallic or non-metallic minerals from an ore)" and also triggered the Toxic Substance's TRA reporting threshold, which was adopted by the TRA from National Pollutant Release Inventory (NPRI).

Per guidance pertaining to the Toxic Substance, reporting is triggered if the Toxic Substance was "manufactured, processed, or otherwise used" (MPO) in the previous calendar year in an amount that is greater than a specified quantity. In the Facility's case, and following MOECC guidance, processing of ore in which the Toxic Substance occurs naturally, at typical background concentrations and as a component of a mineral, meets the definition of MPO, despite the fact that the Toxic Substance's presence is due to natural occurrence in mined ore and the Toxic Substance travels through the Facility's gold extraction process without undergoing any significant chemical change.

Although the Toxic Substance is present in trace amounts in the processed ore, the Toxic Substance's "use"-based reporting threshold was exceeded due to the large quantity of ore that is processed at the Facility on an annual basis.

As a result, and in accordance with the TRA, this specified quantity has been reported to the MOECC as a "use" of the Toxic Substance as a part of a mandatory Toxic Substance quantification, accounting and reporting exercise.

This document satisfies the additional TRA requirement of Toxic Substance Reduction Plan preparation, which requires the Facility to systematically examine opportunities to reduce its "use" of the Toxic Substance. Unlike tracking, accounting, reporting and preparation of a Toxic Substance Reduction Plan which are all requirements; the implementation toxic substance reduction options identified in the Plan (if any) is not a requirement of the TRA or O.Reg.455/09.

The Facility understands the benefits to reducing the use and creation of toxic substances, informing Ontarians about toxic substances in their community and helping Ontario position itself to compete in an increasingly green global economy. However, due to the fact that the only Facility activity which the TRA has defined as a "use" of the Toxic Substance is the processing of ore in which the Toxic Substance occurs naturally, there are no opportunities to reduce the "use" of the Toxic Substance aside from reducing the Facility's ore production.

As a part of fulfilling its requirements under the TRA and O.Reg.455/09, the Facility has prepared a total of ten Toxic Substance Reduction Plans and Plan Summaries for naturally occurring elements which are prescribed toxic substances and whose "use" cannot be reduced based on the factors presented above.

The MOECC has stated that the TRA is not intended to focus on "end of pipe" emissions as they don't necessarily have any bearing on the amount of a substance that is "used" or "created," however the Facility would like to take this opportunity to inform the reader of the fact that the Facility currently complies with all environmental regulations that control the release and disposal of the Toxic Substance; meeting or exceeding the strict release limits imposed by these regulations for the Toxic Substance.

Objectives of the Toxic Substance Reduction Plan

The Objectives of the Plan are as follows:

- provide support for the Facility's position that, under the TRA's framework, it is impossible to reduce the "use" of the Toxic Substance without reducing Facility production;
- provide the reader with an understanding of the nature of the Facility activity which the TRA has defined as a "use" of the Toxic Substance; and
- document how the Facility has fulfilled the applicable requirements under the TRA and O. Reg. 455/09 with respect to the Toxic Substance.

Description of Why the Toxic Substance Is Used or Created

The Facility activity that the MOECC has defined for the purpose of the TRA as a "use" of the Toxic Substance is the handling and processing of mined materials in which the Toxic Substance occurs naturally, at typical background concentrations in the region and as a component of a mineral. Since the Toxic Substance occurs naturally in mined materials, and the Facility is a mining and mineral processing facility, it is impossible to reduce this "use" of the Toxic Substance without reducing the Facility's ore production. The Toxic Substance simply travels through the Facility process along with all other non-gold materials without undergoing any significant chemical change. It is impossible for the Toxic Substance to be created within the Facility process, since the Toxic Substance is reportable under the TRA and O.Reg.455/09 as an elemental mass contribution to the material in which it may be a component.

Rationale for Not Implementing Toxic Substance Reduction Options

As required by s.18(4) of O.Reg.455/09 (as amended by s.9(3) of O.Reg.214/11), a Plan must contain an explanation of why no toxic substance reduction options will be implemented.

Facility personnel have considered each of the seven categories for toxic substance reduction options, and, in light of the information provided in the Statement of Intent section of this Plan, the Facility feels that no toxic substance reduction options can be identified in any of the seven toxic substance reduction categories.

Therefore the rationale for not implementing toxic substance reduction options is that no toxic substance reduction options could be identified.

Statement that the Plan Summary Accurately Reflects the Current Version of the Plan

As required by s.24(1)8 of O.Reg.455/09 this Plan Summary accurately reflects the current version of the Plan.

Planner License Number

As required by s.18(2) of O.Reg.455/09 (as amended by s. 9(2) of O.Reg.214/11), the Licensed Toxic Substance Reduction Planner responsible for providing Planner Recommendations on and certification of this Plan is as follows:

Russell Polack
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