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October 12, 2016

File: W2015L2-0001

Mr. David Wells
Diavik Diamond Mines (2012) Inc.
P.O. Box 2498, 300-5201, 50th Avenue
Yellowknife, NT X1A 2P8

Dear Mr. Wells,

Re: SNP Amendment

The Wek'èezhii Land and Water Board (WLWB or the Board) met on September 23, 2016, to consider Diavik Diamond Mines (2012) Inc.'s (DDMI) proposed Surveillance Network Program (SNP) Amendment Request. The Board has approved all proposed changes and has identified additional reporting requirements as a result of the public review process.

As described in the attached Reasons for Decision, the Board requires the analysis of Total Petroleum Hydrocarbons (TPH) to include the carbon range C₆ – C₅₀ (Petroleum Hydrocarbons PHC (F1-F4)), and the separate reporting of the PHC (F1-F4) fractions in all instances where TPH is analyzed. The Board has also requested that PHC F3 be included in the sediment sampling requirements at SNP 1645-19 as well.

If you have any questions, please feel free to contact Anneli Jokela at ajokela@wlwb.ca or Sarah Elsasser at selsasser@wlwb.ca.

Sincerely,

A handwritten signature in blue ink that reads "Joe Mackenzie". The signature is written in a cursive style and is positioned above the printed name and title.

Joe Mackenzie
Acting Chair, Wek'èezhii Land and Water Board

Copied: Diavik Distribution List



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Reasons for Decision

Reference/File Number:	W2015L2-0001 (Type "A" Water Licence)
Licensee:	Diavik Diamond Mines Inc. (DDMI)
Subject:	Surveillance Network Program Amendment Request

Decision from the Wek'èezhìi Land and Water Board Meeting of September 23, 2016

1.0 Decision

On September 23, 2016 the Wek'èezhìi Land and Water Board (the Board) met to consider a request by DDMI for the approval of a Surveillance Network Program (SNP) Request of Water Licence W2015L2-0001. The Board has revised the SNP to reflect the following changes:

1. Dissolved Metals only require monthly sampling, as opposed to 6-day sampling, at SNP stations 1645-18 and 1645-18B;
2. The testing of sewage parameters for SNP stations 1645-18 and 1645-18B occurs at 7-day intervals as opposed to 6-day intervals;
3. The definition of Total Petroleum Hydrocarbons (TPH) will include the carbon range C₆-C₅₀ (PHC F1-F4) within the Surveillance Network Program;
4. TPH is to be reported as a total and as separate fractions PHC (F1-F4) within the monthly SNP Reports for all instances where TPH is required to be sampled;
5. PHC F3 will be included in the sediment sampling requirements for SNP station 1645-19;
6. All proposed changes associated with administrative revisions and clerical errors have been approved; and

7. Diavik is to ensure that Discharge from collection ponds cannot occur if there is water or waste from the facilities identified in Part H, Items 21b, 22b, 23d, and only in accordance with Part H, Item 27.

2.0 Background

The SNP consists of specific sites within and/or surrounding a development, where water quality and quantity are measured; sampling requirements are decided on a site-specific basis. SNPs are designed to aid the proponent and regulators in ensuring that waste management activities are effective. Typically, one of the SNP stations is assigned to the end-of-pipe and is the point at which the proponent must comply with Effluent Quality Criteria (EQC).

2.1 Origin of Amendment

In DDMI's Water Licence (W2015L2-0001) Renewal Reasons for Decision (page 53),¹ the Board noted that "errors in the SNP were noticed during administration of W2007L2-0003 while the renewal proceeding was ongoing" and that revisions to the SNP would be considered following the renewal.

Furthermore, in the Board's April 4, 2016 Reasons for Decision for Version 14 of DDMI's Water Management Plan,² the Board directed DDMI to clarify the intent and usage of all collection ponds, as well as ensure consistency in supporting documentation when it submits its SNP Amendment Request. DDMI submitted a request to the Board for an amendment to their SNP on June 9, 2016.³ The amendment and additional information submitted by DDMI,⁴ requests that former revisions authorized by the Board be clarified, that newly proposed revisions be implemented, and that the Board provide a definition for TPH within Part B of the SNP.

2.2 Review Process

DDMI's SNP Amendment Request was circulated for comment to the Diavik distribution list on June 14, 2016. Reviewers were given until July 5, 2016 to submit comments. Environment and Climate Change Canada (ECCC), the Environmental Monitoring Advisory Board (EMAB), the Government of the Northwest Territories (GNWT)-Environment and Natural Resources (ENR), and Board staff submitted comments and recommendations on the proposed amendment. Reviewer comments and recommendations, as well as Proponent responses, are available on the WLWB registry.⁵

¹ See WLWB (www.wlwb.ca) Online Registry for [Diavik - WL Renewal - Reasons for Decision - Sep 2 15.pdf \(page 53\)](#)

² See WLWB Online Registry for [Diavik - Water Management Plan - Version 14 - Directive and Reasons for Decision - Apr 4 16.pdf](#)

³ See WLWB Online Registry for [Diavik - SNP Amendment Request - Jun 14 16.pdf](#)

⁴ See WLWB Online Registry for [Diavik - SNP Amendment Request - Additional Information - Jun 16 16.pdf](#)

⁵ See WLWB Online Registry for [Diavik - SNP Amendment Request - Review Summary and Attachments - Sep 23.pdf](#)

3.0 Reasons for Decision

3.1 SNP Approved Changes

The amendments to the SNP for approval include requested clarifications from DDMI regarding previous Board decisions, and proposed edits to reflect previous Board directives and address administrative and/or clerical revisions.

3.1.1 Dissolved Metals Analysis

With respect to dissolved metals analysis, DDMI requested the following changes to SNP station 1645-18/18B in a letter dated February 19, 2009:⁶

“Continue Every 6-day SNP sampling at 1645-18, but reduce the parameters required to include only those that have Effluent Quality Criteria listed in Part H, Item 6a of the Water Licence. 1645-18 would still be sampled monthly for all of the parameters listed in Part B of the SNP document and would be scheduled to coincide with sampling at station 1645-19. A monthly sampling frequency of all parameters would be adequate for the purpose of effects monitoring and to manage operations, while the proposed changes will still provide Every 6-day results for those parameters regulated in the Water License.”

The Board approved the request and provided notification to DDMI in a letter dated September 11, 2009.⁷

As part of their SNP Amendment Request, DDMI sought clarification regarding Dissolved Metal analysis for SNP stations 1645-18/18B, as addressed in their comments submitted to the Board on June 15, 2015.⁸

- 1. The Board requires that Dissolved Metals require monthly sampling, as opposed to 6-day sampling, at SNP stations 1645-18 and 1645-18B.**

3.1.2 Sampling Frequency of Sewage Parameters

DDMI sought clarification in an October 22, 2016⁹ letter to the Board regarding the sampling frequency of sewage parameters at SNP 1645-18/18B. The Board previously amended the SNP of WL2007L2-0003 to allow for the collection and analysis of sewage parameters at 1645-18/18B from every 6 days to every 7 days on June 18, 2012.¹⁰ However, the amendment was not included in WL2015L2-0001. DDMI has requested the SNP be amended to reflect this earlier Board decision.

⁶ See WLWB Online Registry for [W2007L2-0003 - Diavik - SNP Program - DDMI Proposed SNP Changes - Feb 19 09.pdf \(page 3\)](#)

⁷ See WLWB Online Registry for [W2007L2-0003 - Diavik - SNP Program - Amendment to Station 1645-18 and 19 - Board Decision Package - Sept 14 09.pdf](#)

⁸ See WLWB Online Registry for [Diavik - Surveillance Network Program - Letter from DDMI re Inconsistencies - Jun 15 15.pdf](#)

⁹ See WLWB Online Registry for [Diavik - SNP - Clarification - 1645-18 Sewage Sampling Frequency - Oct 22 15.pdf](#)

¹⁰ See WLWB Online Registry for [Diavik - SNP Program - Amendment Request - Sewage Sampling - Board Decision Package and Issuance - Jun 27 12.pdf](#)

- 2. The Board requires that the testing of sewage parameters for SNP stations 1645-18 and 1645-18B occur at 7-day intervals as opposed to 6-day intervals.**

3.1.3 Hydrocarbons

Hydrocarbon contamination of the sediment in the North Inlet has been an ongoing concern at the Diavik site because the source of this contamination is unclear.¹¹ As a result, the Board required the submission of North Inlet Hydrocarbon Investigation and Sludge Management Reports following the Renewal. Following the consideration of these Reports, the Board identified follow-up actions to be completed by DDMI, including the requirement to monitor hydrocarbon concentrations related to spills in the underground.¹²

3.1.3.1 Definition of Total Petroleum Hydrocarbons

In their SNP Amendment Request, DDMI asked that the “WLWB provide a definition of Total Petroleum Hydrocarbons within Part B of the SNP”. DDMI is currently analyzing the carbon range of C₆-C₃₂, as they stated it corresponds to the TPH range used by their analytical laboratory, covers fuels and oils used at Diavik, and aligns with previous Board direction for North Inlet Water Treatment Plant (NIWTP) sludge and underground sampling for PHC F3 hydrocarbons.

DDMI provided additional information on June 16, 2016 that demonstrates the typical carbon ranges and analytical techniques.¹³ This information confirms that the oils, heavy fuels, greases, etc., that are thought to be involved in underground spills, overlap between the PHC F3 and PHC F4 fractions, and that lubricating oil extends into the C₄₀ range.

Furthermore, ENR comment #1 noted a discrepancy that the TPH carbon range that analyzes the complete PHC F3 fraction extends to C34. ENR recommended DDMI analyze for a TPH range that includes the full range, and that if that range proves difficult for DDMI’s laboratory, to analyze for the complete range of fractions (from F1-F4, C₆-C₅₀). DDMI responded by noting their preference to proceed with analyzing all hydrocarbons using the CCME F1-F4 analysis.

Considering that lubricating oils from spills in the underground are one of the suspected sources of the hydrocarbon contamination in the North Inlet and are not completely captured by DDMI’s current testing range, and that DDMI’s preference would be to analyze hydrocarbons for the complete F1-F4 range than using different laboratory procedures, the Board has decided that:

- 3. The definition of Total Petroleum Hydrocarbons (TPH) will include the carbon range C₆-C₅₀ (PHC F1-F4) within the Surveillance Network Program.**

¹¹ See WLWB Online Registry for [Diavik - WL Renewal - Reasons for Decision - Sep 2 15.pdf \(Page 42\)](#)

¹² See WLWB Online Registry for [Diavik - North Inlet Hydrocarbon Investigation and Sludge Management Reports - V1.1 - Board Directive and RFD - Jul 25 16.pdf](#)

¹³ See WLWB Online Registry for [Diavik - SNP Amendment Request - Additional Information - Jun 16 16.pdf \(attachment to letter\)](#)

3.1.3.2 Total Petroleum Hydrocarbons versus Petroleum Hydrocarbon (PHC) F3 Fraction

In DDMI's SNP Amendment Request, it requested clarification whether the requirement outlined in the February 19, 2014 directive;¹⁴ to implement a bi-weekly hydrocarbon monitoring program for PHC F3 for SNP Station 1645-75 and the North Inlet Water Treatment Plant sludge [1645-85A, 1645-85B, 1645-86A, and 1645-86B], and to report on these data and trends and provide an ongoing assessment as to whether the management practices put in place are effective in their monthly SNP Reports and Annual Water Licence Report until further notice, is still required.

The results from the North Inlet Hydrocarbon Investigation Report (p. 61) indicated that PHC F3 appears to be the main cause of toxicity to sediments in the North Inlet.¹⁵ Reporting on PHC F3 therefore represents an important tool for tracking source reduction efforts related to toxicity in sediments of the North Inlet. In addition, the Reasons for Decision from the North Inlet Hydrocarbon Investigation and Sludge Management Reports required: DDMI to analyze temporal trends in PHC F3 concentration from SNP stations 1645-75 and 1645-75B, since the beginning of sampling for PHC F3, and to present and discuss these results in the Annual Water Licence Report, beginning with the 2016 Annual Water Licence Report (Directive #4).¹⁶ During the review period, EMAB recommended that Diavik continue to analyze and report PHC F3 at stations 1645-75, 1645-85A/B, and 1645-86A/B in the monthly SNP reports (EMAB comment #1).

While the definition of TPH is to include the carbon range (C₆ – C₅₀) and PHC F1-F4 fraction, reporting results for TPH only will not allow the tracking of concentrations of PHC F3. To ensure the concern related to contamination, suspected to be caused by oils within the underground, and supported by EMAB's recommendation and previous Board direction, the Board requires the following:

- 4. TPH be reported as a total and as separate fractions PHC (F1-F4) within the monthly SNP Reports for all instances where TPH is required to be sampled.**

3.1.3.3 Sediment Sampling for Hydrocarbons

In the Reasons for Decision from the North Inlet Hydrocarbon Investigation and Sludge Management Reports, the Board directed DDMI to sample PHC F3 in sediments of SNP station 1645-19 during the open-water season and to analyze those results and present and discuss this analysis as part of subsequent Annual Water Licence Reports (Directive #5).¹⁷ These results are to be analyzed and discussed beginning with the 2016 Annual Water Licence Report. The SNP be updated to reflect this directive.

¹⁴ See WLWB Online Registry for [W2007L2-0003 - Diavik - ICRP - North Inlet Quarterly Status Report - Q3 2013 - Board Decision Package - Feb 19 14.pdf](#)

¹⁵ See WLWB Online Registry for [Diavik - North Inlet Hydrocarbon Investigation and Sludge Management Reports - V1.1 - Board Directive and RFD - Jul 25 16.pdf](#)

¹⁶ Ibid

¹⁷ See WLWB Online Registry for [Diavik - North Inlet Hydrocarbon Investigation and Sludge Management Reports - V1.1 - Board Directive and RFD - Jul 25 16.pdf](#)

5. **The Board requires PHC F3 to be included in the sediment sampling requirements for SNP station 1645-19.**

3.1.6 Administrative Revisions and Clerical Errors

A number of corrections are being considered to reflect DDMI's current Water Licence (W2015L2-0001). These changes are minor and incorporate misspelled words, updated headings and rearrangement of SNP stations under these headings, rewording sentences for improved clarity, correcting improper references to sections of the Water Licence, and incorporating previous Board approval related changes in which DDMI did not request clarification. For example, ECCC recommended (ECCC comment #2) that footnote b (iii), page 10 of DDMI's SNP Amendment Request "should be updated with the correct spelling of the test organism, i.e., *Pseudokirchneriella subcapitata*".

6. **The Board has approved all proposed changes associated with administrative revisions and clerical errors.**

3.2 Requested Changes with Stipulations

In their SNP Amendment Request, DDMI has proposed that in Part B, Item 13 of the SNP, the volumes of water pumped from the run-off collection ponds to both the North Inlet and Lac de Gras (in addition to the Processed Kimberlite Containment Facility) be reported. DDMI has also included rationale for all the collection ponds in Part E of the SNP.

As detailed in their April 4, 2016 Reasons for Decision, the Board did not approve Version 14 of DDMI's Water Management Plan because of concerns identified with the listing of 'additional waters' in the 'Authorized Discharges' section of the Plan.¹⁸ These Reasons note the following:

"Within the Water Management Plan, DDMI has included a list of waste streams it has identified as being authorized for discharge without treatment based on the conditions regulating those wastes in the Water Licence. It has also identified "additional waters", which DDMI indicates as having "potential to be released to the receiving environment that may ultimately drain to Lac de Gras without treatment". The Board identified significant concern with the uncertainties surrounding the latter. These uncertainties have led to the Board's decision not to approve the Water Management Plan at this time and provision of additional direction to DDMI with respect to DDMI's understanding of authorized discharges."

At that time, the Board requested further information from DDMI and directed DDMI to clarify the intent and usage of all collection ponds, as well as ensure consistency in supporting documentation when it submits its SNP Amendment Request.

DDMI responded to the Board's request;¹⁹ however, the Board determined that the requested information had not been provided and requested additional information in the form of an Information

¹⁸ See WLWB Online Registry for [Diavik - Water Management Plan - Version 14 - Directive and Reasons for Decision - Apr 4 16.pdf \(page 5\)](#)

Request (IR).²⁰ Board staff are currently reviewing DDMI's response that was received on August 9, 2016.²¹

It is noted that DDMI has attempted to clarify "the intent and usage of all collection ponds" in their SNP Amendment Request (as per the Board's April 4, 2016 direction); however, these changes are related to the outstanding questions surrounding the type (i.e., source) of discharge authorized for Lac de Gras. For example, under Part H, Items 21b, 22b, and 23d of the Water Licence, the Licence specifies that Seepage collected from the Processed Kimberlite Containment (PKC) Facility, the Drainage Control and Collection System, and the west dike of the North Inlet Facility, respectively, must be returned to the corresponding facility; yet, the collection pond descriptions for these facilities state that water collected may be discharged directly to Lac de Gras. Therefore, there is a potential contradiction between the Licence and the SNP. The Board reminds Diavik to ensure it adheres to Part H, Items 21b, 22b, and 23d, and reiterate that Diavik must operate its collection ponds in accordance with the requirements of the Licence.

- 7. The Board requires Diavik to ensure that Discharge from collection ponds cannot occur if there is water or waste from the facilities identified in Part H, Items 21b, 22b, 23d, and only in accordance with Part H, Item 27.**

The rationales proposed by DDMI for several SNP Stations is helpful in clarifying the intent of the collection ponds.

- 8. The 'Rationale for Station' sections in Part E of the SNP have been approved.**

Signed the 3rd Day of October, 2016, on behalf of the Wek'èezhìi Land and Water Board



Tom Bradbury
Witness



Joe Mackenzie
Acting Chair, Wek'èezhìi Land and Water Board

¹⁹ See WLWB Online Registry for [Diavik - Water Management Plan - Version 14 - DDMI Follow up Response to Directive and RFD - May 5 16.pdf](#)

²⁰ See WLWB Online Registry for [Diavik - Information Request Re Authorization to Discharge in Water Management Plan Version 14 - Jul 20 16.pdf](#)

²¹ See WLWB Online Registry for [Diavik - Response to Information Request Re Authorization to Discharge in Water Management Plan Version 14 - Aug 9 16.pdf](#)



Annex 1: Surveillance Network Program

Revision History

Effective Date	Section and Description
September 23, 2016	SNP Amendments throughout. See September 23, 2016 Reasons for Decision for more detail.

Part A - Reporting Requirements

1. The Licensee shall within 30 days following the month being reported, submit to the Board all data and information in an electronic and printed format acceptable to the Board required by the "Surveillance Network Program" including the results of the approved QA/QC plan.

Part B - Flow and Volume Measurement Requirements

Unless otherwise noted, all flow and volume measurements shall be recorded monthly and recorded in cubic metres.

1. The daily volume of water obtained from Lac de Gras for all purposes.
2. The daily volume of water dewatered from the A21 Pit.
3. The volume of water obtained from all sources for use in the process plant.
4. The volume of effluent recycled from the Processed Kimberlite Containment Facility.
5. The volumes of the solids in tonnes and liquid fractions in cubic metres of each Waste transferred to the Processed Kimberlite Containment Facility.
6. The volume of effluent discharged from the Processed Kimberlite Containment Facility.
7. The volume of effluent discharged from the North Inlet Facility to the Treatment Facilities.
8. The daily volume of effluent discharged into Lac de Gras at SNP Station Numbers 1645-18 and 1645-18B.
9. The volume of dredged sediments deposited into the Dredged Sediment Containment Facility or the North Inlet Facility.

10. The daily volume of Minewater and seepage pumped from A154, A418 and A21 open pits to the North Inlet Facility and/or Lac de Gras.
11. The daily volume of treated Sewage effluent discharged from the Sewage Disposal Facilities.
12. The volume of Sewage solids removed from the Sewage Disposal Facilities.
13. The volume of water pumped from the run-off collection ponds.
14. The volume of ice or frozen sediments removed from the Pit(s) areas.

Part C - Sampling and Analysis Requirements

1. The field pH, sample temperature, and ambient wind and weather conditions shall be recorded at all locations at the time of sampling.
2. The Licensee shall increase sampling if exceedances of the Effluent Quality Requirements occur or as directed by an Inspector.
3. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of "Standards Methods for the Examination of Water and Wastewater", or by such other methods approved by an Analyst.
4. All analyses shall be performed in a laboratory accredited by the Canadian Association for Laboratory Accreditation (CALA) for the specific analyses to be performed or as approved by an Analyst.
5. The Licensee shall implement the Quality Assurance/Quality Control QA/QC Plan that includes field and laboratory procedures and requirements as approved by an Analyst under Licence N7L2-1645.
6. The Licensee shall annually review the approved the quality assurance/quality control (QA/QC) plan and modify the Plan as necessary. Proposed revisions shall be submitted to an Analyst for approval.
7. The QA/QC plan referred to in SNP Part C, Item 5 shall be implemented as approved by an Analyst.

NOTES:

¹ICP-MS Metal Scan shall include at a minimum, the following regulated parameters:
Aluminum, Cadmium, Chromium, Copper, Lead, Nickel, Zinc

Once Annually the ICP shall also include the following monitored parameters:
Manganese, Molybdenum, Selenium, Strontium, Uranium

Total metals shall be analyzed unfiltered and preserved as per the laboratory requirements. Dissolved metals shall be filtered using a 0.45 micron filter and preserved as per the laboratory requirements.

²Major ions include the following parameters:

Calcium, Chloride, Sulphate, Magnesium, Fluoride, Potassium, Alkalinity, Hardness, Total Dissolved Solids

³Field parameters include the following measurements:
pH, Conductivity, Temperature

⁴pH analyzed in the laboratory

⁵Nutrients include the following parameters:

Total Ammonia, Nitrite-Nitrogen, Nitrate-Nitrogen, Total Kjeldahl Nitrogen, Total Phosphorus, Total Dissolved Phosphorus, Ortho Phosphorus.

⁶Total Petroleum Hydrocarbons (TPH) is defined as carbon range C₆ – C₅₀ (PHC F1-F4)

⁷Monthly SNP Report should include reporting of both TPH and PHC (F1-F4)

Part D - Other Monitoring Requirements

1. The Licensee shall measure and record the following data:
 - a) Precipitation, measured and recorded in hourly and daily totals;
 - b) Evaporation, which is calculated from the parameters list below with hourly and daily averages:
 - i. Wind speed at approximately 2.0 meters above the water surface including daily minima and maxima;
 - ii. Wind direction on an hourly basis;
 - iii. Air temperature at approximately 0.75 and 2.0 metres above the water surface including daily minima and maxima;
 - iv. Relative humidity at approximately 0.75 and 2.0 metres above the water surface;
 - v. Water temperature at two levels approximately 1 and 2 metre depths;
 - vi. Net solar radiation over the water surface; and
 - vii. Water level; and
 - c) The weather data for evaporation calculations shall be measured and recorded at a site located at or near the PKC Facility as approved by an Inspector.
2. The Licensee shall implement the location, methods, and frequency for measuring and recording the meteorological data identified in Part D, Item 1 of the SNP as approved under Licence N7L2-1645.
3. The methods and frequency referred to in Part D, Item 1 of the SNP shall be implemented as and when approved by the Board.
4. The quantity of ore processed shall be measured in tonnes and recorded monthly.

5. The quantity of Waste Rock, coarse tailings, and till shall be measured in tonnes and recorded monthly and their disposal locations recorded monthly.
6. The Licensee shall install and monitor a minimum of one (1) SNP station for monitoring the Lac de Gras background references for the regulation of the dredging and dike Construction activities. This station shall not be located near developmental activities or the inlets of any rivers or streams and shall be sampled in accordance with SNP Part H, Item 31.
7. In the event that a second dredge is required during the Construction of the Water Retention Dikes, the Licensee shall establish additional SNP Stations for the second dredge in the same manner as those identified (SNP Stations 1645-82, 1645-83, and 1645-84) for the monitoring of a single dredge. These stations shall be numbered in sequence and monitored in accordance with SNP Station 1645-55.

Part E – Site Descriptions and Sampling Requirements

Location of sampling sites and specific monitoring requirements are as follows:

NOTE: The description of the SNP Stations is approximate and subject to the approval of an Inspector.

SNP Site Quick Reference Table

SNP Site #	Description	Status
1645-1	Mine water Discharge	INACTIVE
1645-2	Outflow decant from F1	INACTIVE
1645-3	Lac de Gras inflow from F1 Wetlands	INACTIVE
1645-4	Discharge from Sewage Disposal Facility	INACTIVE
1645-5	Outflow from disposal pond	INACTIVE
1645-6	Prior to entering Lac de Gras at the stream outflow from the Sewage disposal	INACTIVE
1645-7	Upstream of the confluence between the ice scrapings disposal area runoff and the stream from the Sewage outflow	INACTIVE
1645-8	Down slope of the semi-permeable dike in D1 drainage way	INACTIVE
1645-9	Treated mine water pumped directly to Lac de Gras	INACTIVE
1645-10	Station applying to treated Effluent Discharge to monitor Sewage Discharge from North Construction Camp	INACTIVE
1645-11	Sewage Discharge	ACTIVE
1645-12	West Cell – North Inlet Facility	INACTIVE
1645-13	North Inlet – Influent prior to treatment	ACTIVE
1645-14	North Inlet Treatment Plant treated effluent prior to mixing with PKC treated effluent	INACTIVE
1645-15	Process Plan slurry Discharge to PKC facility	INACTIVE
1645-16	PKC pond water within the PKC	ACTIVE
1645-17	PKC Treatment Plant Effluent prior to mixing with North Inlet Treatment Plant treated effluent	INACTIVE
1645-18/18B	Main effluent Discharge to Lac de Gras from NIWTP (point of compliance)	ACTIVE

1645-19	Effluent mixing zone in Lac de Gras	ACTIVE
1645-20	Northwest of clarification pond	INACTIVE
1645-21	West of Clarification pond (drainage course) between Pond 2 and Pond 3.	INACTIVE
1645-22	North of Quarry and till areas (drainage course) on the South side of North Inlet Facility	INACTIVE
1645-23	North perimeter road (drainage course) between road and North Inlet Facility.	INACTIVE
1645-24	East of perimeter road (drainage course)	INACTIVE
1645-25	East PKC Dike area (drainage course)	INACTIVE
1645-26	West PKC Dike area (drainage course)	INACTIVE
1645-27	Airstrip Drainage Course	INACTIVE
1645-28	Groundwater GW1 between the North Rock Pile and North Inlet	INACTIVE
1645-29	Groundwater GW2	INACTIVE
1645-30	Groundwater GW3 Northwest of Till Disposal Area	INACTIVE
1645-31	Groundwater GW4 West of the PKC	INACTIVE
1645-32	Groundwater – South of PKC, between the Ammonium Nitrate Storage and Pond 7	INACTIVE
1645-33	Groundwater nearest to Bulk Fuel Storage	ACTIVE
1645-34	Near intake structure for De-watering of Lake E1	INACTIVE
1645-35	Near intake structure of De-watering of Lake E6	INACTIVE
1645-36	Near intake structure for De-watering of Lake E7	INACTIVE
1645-37	Near intake structure for De-watering of Lake E8	INACTIVE
1645-38	Near intake structure for De-watering of Lake E10	INACTIVE
1645-39	Near intake structure for De-watering within the dike enclosure of A154	INACTIVE
1645-40	Near intake structure for dike pool watering – A418	INACTIVE
1645-41	A21 pool dewatering	ACTIVE
1645-42	Collection Pond 4	ACTIVE
1645-43	A21 SNP Station: Collection Pond	INACTIVE
1645-44	Collection Pond 7	ACTIVE
1645-45	Collection Pond 10	ACTIVE
1645-46	Collection Pond 11	ACTIVE
1645-47	Collection Pond 12	ACTIVE
1645-48	Clarification pond (Pond 3)	INACTIVE
1645-49	Mine water removed from A154 Pit	INACTIVE
1645-50	Mine water removed from A418 Pit	INACTIVE
1645-51	Mine water removed from A21 Open Pit (sump)	ACTIVE
1645-52	Seepage collected from inside toe of the A154 Dike	INACTIVE
1645-53	Seepage collected from inside toe of the A418 Dike	INACTIVE
1645-54	Seepage collection from inside toe of A21 Dike.	ACTIVE
1645-55	A21 SNP reference station in Lac de Gras	ACTIVE
1645-56	Station applying to dredging and dike Construction	INACTIVE
1645-57	Station applying to dredging and dike Construction	INACTIVE
1645-58	Station applying to dredging and dike Construction	INACTIVE
1645-59	Station applying to dredging and dike Construction	INACTIVE

1645-60	Station applying to dredging and dike Construction	INACTIVE
1645-61	Station applying to dredging and dike Construction	INACTIVE
1645-62	Station applying to dredging and dike Construction	INACTIVE
1645-63	Station applying to dredging and dike Construction	INACTIVE
1645-64	Station applying to dredging and dike Construction	INACTIVE
1645-65	Station applying to dredging and dike Construction	INACTIVE
1645-66	Near intake structure for De-watering of North Inlet.	INACTIVE
1645-67	Collection Pond 1	ACTIVE
1645-68	Collection Pond 2	ACTIVE
1645-69	Collection Pond 5	ACTIVE
1645-70	Station applying to dredging and dike Construction	INACTIVE
1645-71	Station applying to dredging and dike Construction	INACTIVE
1645-72	Station applying to dredging and dike Construction	INACTIVE
1645-73	Station applying to dredging and dike Construction	INACTIVE
1645-74	Collection Pond 13	ACTIVE
1645-75	A154/A418 underground water (9290 Pump Station and Dewatering sumps)	ACTIVE
1645-75B	A154/A418 underground water (9105 Pump Station)	ACTIVE
1645-76	Collection Pond 3	ACTIVE
1645-77	PKC Seepage	ACTIVE
1645-78	PKC Seepage	ACTIVE
1645-79	PKC Seepage	ACTIVE
1645-80	PKC Seepage	ACTIVE
1645-81	Surface Runoff during Freshet	ACTIVE
1645-82	A21 SNP dredging and dike construction	ACTIVE
1645-83	A21 SNP dredging and dike construction	ACTIVE
1645-84	A21 SNP dredging and dike construction	ACTIVE
1645-85a	Clarifier 1 Sludge North Inlet Water Treatment Plant	ACTIVE
1645-85b	Clarifier 2 Sludge North Inlet Water Treatment Plant	ACTIVE
1645-86a	Clarifier 3 Sludge North Inlet Water Treatment Plant	ACTIVE
1645-86b	Clarifier 4 Sludge North Inlet Water Treatment Plant	ACTIVE

STATIONS APPLYING TO TREATED EFFLUENT DISCHARGE

Surveillance Network Program (SNP) Station 1645-11 (Active)

Description:	Sewage Discharge
Location:	South Sewage Treatment Plant
Sampling Frequency:	Annually
Sampling Parameters:	BOD ₅ , pH ⁴ , Faecal Coliforms, Nutrients ⁵ , Oil and Grease, Temperature, Total Suspended Solids
Rationale for Station:	To verify that Sewage treatment planting is operating effectively

Surveillance Network Program (SNP) Station 1645-13 (Active)

Description:	North Inlet – Influent prior to treatment	
Location:	North Inlet Water Treatment Plant	
Sampling Frequency:	Every six (6) days to correspond with the sampling of Effluent (1645-18 and 1645-18B)	Monthly to correspond with the sampling of Effluent (1645-18 and 1645-18B)
Sampling Parameters:	Total Arsenic, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Nutrients ⁵ , Total Mercury, Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total and Dissolved), Major Ions ² , pH ⁴ , Nutrients ⁵ , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷
Rationale for Station:	To monitor influent water quality prior to North Inlet Water Treatment Plant. Helps to determine treatment plant efficiency, and, in the event of poor effluent quality, can help determine the source of the problem. Also provides information regarding water quality in the north inlet, which can inform closure planning.	

Surveillance Network Program (SNP) Station 1645-18/18B (Active)

Description:	Main effluent Discharge to Lac de Gras from NIWTP (point of compliance)			
Location:	North Inlet Water Treatment Plant 1 – 1645-18 North Inlet Water Treatment Plant 2 – 1645-18B			
Sampling Frequency:	Every six (6) days	Monthly	Every (7) days	Quarterly or monthly
Sampling Parameters:	Total Arsenic, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Nutrients ⁵ , Total Mercury, , Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total and Dissolved), Major Ions ² , pH ⁴ , Nutrients ⁵ , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷	Additionally, If effluent from Sewage Treatment Facilities are directed to Lac de Gras... Faecal Coliforms, BOD ₅ , Oil and Grease	1. In accordance with Part H, Item 30(a) and (b) ^a 2. Chronic toxicity ^b
Rationale for Station:	This information is required to confirm compliance with EQC, and can also provide information about effectiveness of treatment plant.			

^a Samples of effluent shall be provided to an accredited bioassay laboratory for the purpose of performing the following acute toxicity tests at the specified frequencies:

- i. Tests required under Part H, Item 30 (a) and (b) of the Water Licence shall be performed quarterly unless and until a result of >50% mortality in 100% effluent is obtained for a test organism; at that time the frequency of the acute toxicity test will increase to monthly. If the monthly acute toxicity tests show less than or equal to 50% mortality in 100% effluent for 12 consecutive tests, the frequency of testing can again be reduced to quarterly. Note that acute toxicity for these tests is defined using the LC50 value; the Board may alter this definition for acute toxicity if deemed necessary (e.g., based on results of round whitefish testing). If a result of >50% mortality in 100% effluent is obtained, the Licensee must report both the LC50 and the LC20 values in the SNP reports required under SNP Part A, Item 1.
- ii. The Licensee shall submit a revised round whitefish toxicity testing protocol, based on a directive to be provided by the Board. The purpose of the testing is to evaluate the relative sensitivity of round whitefish to ammonia compared to rainbow trout. The Board will provide further instructions regarding toxicity testing with round whitefish following submission of these results to the WLWB; and,

- iii. Toxicity test with the amphipod, *Hyalella azteca*, according to the testing protocol approved by the Board (under Part H, Item 8 W2007L2-0003) of the Licence shall be performed on a quarterly basis unless and until a result of >50% mortality in 100% effluent is obtained; at that time, the frequency of the acute toxicity test will increase to monthly. If the monthly acute toxicity tests show less than or equal to 50% mortality in 100% effluent for 12 consecutive tests, the frequency of testing can again be reduced to quarterly.

^b Bioassay samples shall be provided to an accredited bioassay laboratory for the following analyses:

- i. Chronic toxicity to the early life stages of salmonid fish (as per Environment Canada’s Environmental Protection Series Biological Test Method EPS/1/RM/28); and
- ii. Chronic toxicity to the crustacean, *Ceriodaphnia dubia* (as per Environment Canada’s Environmental Protection Series Biological Test Method EPS/1/RM/21); and
- iii. Chronic toxicity to the alga, *Pseudokirchneriella subcapitata* (as per Environment Canada’s Environmental Protection Series Biological Test Method EPS/1/RM/25).

Surveillance Network Program (SNP) Station 1645-19 (Active)

Description:	Effluent mixing zone in Lac de Gras	
Location:	60 meters from the effluent Discharge	
Sampling Frequency:	Water Sampled Monthly (provided safe access via open water or sufficient ice thickness) at three (3) stations located at a sixty (60) metre radius from the diffuser. Samples shall be collected at surface and at five (5) metre intervals to depth at each station and analyzed ^c	Sediments sampled annually at each of the three (3) sites
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total and Dissolved), Major Ions ² , pH ⁴ , Nutrients ⁵ , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity	Total Metals (strong acid Digestion), Total Organic Carbon, Simultaneous Extracted Metals ^d , Acid Volatile Sulphide, Total Ammonia, PAH’s, Hydrogen Sulfide, PHC F3
Rationale for Station:	To assess whether water quality objectives are being met at the edge of the initial dilution zone.	

^c Methods for analysis for Simultaneous Extracted Metals and Acid Volatile Sulphide shall be approved by the Analyst

STATIONS APPLYING TO SURFACE RUNOFF AND GROUNDWATER

Surveillance Network Program (SNP) Station 1645-33 (Active)

Description:	Groundwater nearest to Bulk Fuel Storage
Location:	South of Main Tank Farm
Sampling Frequency:	Checked weekly for Groundwater flow and sampled monthly.
Sampling Parameters:	Total Ammonia, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷
Rationale for Station:	To monitor water down gradient of Bulk Fuel Storage

Surveillance Network Program (SNP) Station 1645-81 (Active)

Description:	Surface Runoff during Freshet
Location:	Emulsion Plant and Ammonium Nitrate Storage Building
Sampling Frequency:	Checked weekly for Groundwater flow and sampled monthly.
Sampling Parameters:	Total Ammonia, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷
Rationale for Station:	To monitor surface runoff water quality and identify the presence of any contaminants from the Emulsion Plant and the Ammonia Nitrate Storage building in the receiving environment.

STATIONS APPLYING TO COLLECTION PONDS

Surveillance Network Program (SNP) Station 1645-42 (Active)

Description:	Collection Pond		
Location:	Pond 4		
Sampling Frequency:	Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector	Once prior to the commencement of Discharge. Discharge cannot occur if there is water or waste from the facilities identified in Part H, Items 21b, 22b, 23d, and only in accordance with Part H, Item 27.	Daily during Discharge
Sampling Parameters:	Total Ammonia, Field Parameters ³ , Total ICP-MS Metal Scan ¹ , Major Ions ² , Nitrate, Nitrite, pH ⁴ , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷	TSS, pH ⁴ , Turbidity
Rationale for Station:	To monitor water quality of the PKC West Dam embankment runoff and PKC Facility seepage, if present.		

Surveillance Network Program (SNP) Station 1645-44 (Active)

Description:	Collection Pond		
Location:	Pond 7		
Sampling Frequency:	Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector	Once prior to the commencement of Discharge. Discharge cannot occur if there is water or waste from the facilities identified in Part H, Items 21b, 22b, 23d, and only in accordance with Part H, Item 27.	Daily during Discharge
Sampling Parameters:	Total Ammonia, Field Parameters ³ , Total ICP-MS Metal Scan ¹ , Major Ions ² , Nitrate, Nitrite, pH ⁴ , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷	TSS, pH ⁴ , Turbidity
Rationale for Station:	To monitor water quality of the Ammonium Nitrate Storage Area and PKC Facility seepage and runoff, if present.		

Surveillance Network Program (SNP) Station 1645-45 (Active)

Description:	Collection Pond		
Location:	Pond 10		
Sampling Frequency:	Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector	Once prior to the commencement of Discharge. Discharge cannot occur if there is water or waste from the facilities identified in Part H, Items 21b, 22b, 23d, and only in accordance with Part H, Item 27.	Daily during Discharge
Sampling Parameters:	Total Ammonia, Field Parameters ³ , Total ICP-MS Metal Scan ¹ , Major Ions ² , Nitrate, Nitrite, pH ⁴ , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷	TSS, pH ⁴ , Turbidity
Rationale for Station:	To monitor water quality of the Maintenance Building and Processing Plant runoff, if present.		

Surveillance Network Program (SNP) Station 1645-46 (Active)

Description:	Collection Pond		
Location:	Pond 11		
Sampling Frequency:	Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector	Once prior to the commencement of Discharge. Discharge cannot occur if there is water or waste from the facilities identified in Part H, Items 21b, 22b, 23d, and only in accordance with Part H, Item 27.	Daily during Discharge
Sampling Parameters:	Total Ammonia, Field Parameters ³ , Total ICP-MS Metal Scan ¹ , Major Ions ² Nitrate, Nitrite, pH ⁴ , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷	TSS, pH ⁴ , Turbidity
Rationale for Station:	To monitor water quality of the Accommodations, South Tank Farm and Warehouse Laydown runoff, if present.		

Surveillance Network Program (SNP) Station 1645-47 (Active)

Description:	Collection Pond		
Location:	Pond 12		
Sampling Frequency:	Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector.	Once prior to the commencement of Discharge. Discharge cannot occur if there is water or waste from the facilities identified in Part H, Items 21b, 22b, 23d, and only in accordance with Part H, Item 27.	Daily during Discharge
Sampling Parameters:	Total Ammonia, Field Parameters ³ , Total ICP-MS Metal Scan ¹ , Major Ions ² Nitrate, Nitrite, pH ⁴ , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷	TSS, pH ⁴ , Turbidity
Rationale for Station:	To monitor water quality of the Process Plant ROM (Run of Mine), and Waste Transfer Area runoff, if present.		

Surveillance Network Program (SNP) Station 1645-67 (Active)

Description:	Collection Pond		
Location:	Pond 1		
Sampling Frequency:	Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector.	Once prior to the commencement of Discharge. Discharge cannot occur if there is water or waste from the facilities identified in Part H, Items 21b, 22b, 23d, and only in accordance with Part H, Item 27.	Daily during Discharge
Sampling Parameters:	Total Ammonia, Field Parameters ³ , Total ICP-MS Metal Scan ¹ , Major Ions ² , Nitrate, Nitrite, pH ⁴ , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷	TSS, pH ⁴ , Turbidity
Rationale for Station:	To monitor water quality of the South Haul Road, North Country Rock Pile, Backfill and Crusher Plants, East PKC Dam embankment runoff, and PKC Facility seepage, if present.		

Surveillance Network Program (SNP) Station 1645-68 (Active)

Description:	Collection Pond		
Location:	Pond 2		
Sampling Frequency:	Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector	Once prior to the commencement of Discharge. Discharge cannot occur if there is water or waste from the facilities identified in Part H, Items 21b, 22b, 23d, and only in accordance with Part H, Item 27.	Daily during Discharge
Sampling Parameters:	Total Ammonia, Field Parameters ³ , Total ICP-MS Metal Scan ¹ , Major Ions ² , Nitrate, Nitrite, pH ⁴ , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷	TSS, pH ⁴ , Turbidity
Rationale for Station:	To monitor water quality of the North Country Rock Pile runoff, if present.		

Surveillance Network Program (SNP) Station 1645-69 (Active)

Description:	Collection Pond		
Location:	Pond 5		
Sampling Frequency:	Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector	Once prior to the commencement of Discharge. Discharge cannot occur if there is water or waste from the facilities identified in Part H, Items 21b, 22b, 23d, and only in accordance with Part H, Item 27.	Daily during Discharge
Sampling Parameters:	Total Ammonia, Field Parameters ³ , Total ICP-MS Metal Scan ¹ , Major Ions ² , Nitrate, Nitrite, pH ⁴ , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons ⁶ (TPH) PHC (F1-F4) ⁷ ,	TSS, pH ⁴ , Turbidity
Rationale for Station:	To monitor water quality of the South Haul Road, PKC East Dam embankment runoff, and PKC Facility seepage, if present.		

Surveillance Network Program (SNP) Station 1645-74 (Active)

Description:	Collection Pond		
Location:	Pond 13		
Sampling Frequency:	Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector	Once prior to the commencement of Discharge. Discharge cannot occur if there is water or waste from the facilities identified in Part H, Items 21b, 22b, 23d, and only in accordance with Part H, Item 27.	Daily during Discharge
Sampling Parameters:	Total Ammonia, Field Parameters ³ , Total ICP-MS Metal Scan ¹ , Major Ions ² , Nitrate, Nitrite, pH ⁴ , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷	TSS, pH ⁴ , Turbidity
Rationale for Station:	To monitor the water quality of the Main Underground Portal Ore and Waste Storage Pad runoff, if present.		

Surveillance Network Program (SNP) Station 1645-76 (Active)

Description:	Collection Pond		
Location:	Pond 3		
Sampling Frequency:	Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector	Once prior to the commencement of Discharge. Discharge cannot occur if there is water or waste from the facilities identified in Part H, Items 21b, 22b, 23d, and only in accordance with Part H, Item 27.	Daily during Discharge
Sampling Parameters:	Total Ammonia, Field Parameters ³ , Total ICP-MS Metal Scan ¹ , Major Ions ² , Nitrate, Nitrite, pH ⁴ , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷	TSS, pH ⁴ , Turbidity
Rationale for Station:	To monitor water quality of the North Country Rock Pile, Inert Landfill, North and West PKC Dam embankment runoff, and PKC Facility Seepage, if present.		

STATIONS APPLYING TO DEWATERING OF THE UNDERGROUND MINE

Surveillance Network Program (SNP) Station 1645-75 (Active)

Description:	A154/A418 underground water (9290 Pump Station and Dewatering sumps)
Location:	North Inlet Water Treatment Plant
Sampling Frequency:	Every two (2) weeks
Sampling Parameters:	Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Nutrients ⁵ , pH ⁴ , Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷
Rationale for Station:	This information helps understand how Minewater affects the quality of Water entering the treatment plant, provides information on the changes in Minewater quality over time and may inform closure planning.

Surveillance Network Program (SNP) Station 1645-75B (Active)

Description:	A154/A418 underground water (9105 Pump Station)
Location:	Fresh Air Raise/Return Air Riser
Sampling Frequency:	Every two (2) weeks
Sampling Parameters:	Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Nutrients ⁵ , pH ⁴ , Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷
Rationale for Station:	This information helps understand how Minewater affects the quality of Water entering the treatment plant, provides information on the changes in Minewater quality over time and may inform closure planning.

STATIONS APPLYING TO THE PROCESSED KIMBERLITE CONTAINMENT FACILITY

Surveillance Network Program (SNP) Station 1645-16 (Active)

Description:	PKC pond water within the PKC
Location:	PKC Reclaim Barge
Sampling Frequency:	Sampled Monthly
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total and Dissolved), Major Ions ² , pH ⁴ , Nutrients ⁵ , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷
Rationale for Station:	Monitor water quality within PKC pond

Surveillance Network Program (SNP) Station 1645-77 (Active)

Description:	PKC Seepage
Location:	East PKC Dam
Sampling Frequency:	Checked weekly, sampled monthly
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total and Dissolved), Major Ions ² , pH ⁴ , Nutrients ⁵ , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity
Rationale for Station:	To monitor PKC Seepage chemistry

Surveillance Network Program (SNP) Station 1645-78 (Active)

Description:	PKC Seepage
Location:	East PKC Dam
Sampling Frequency:	Checked weekly, sampled monthly
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total and Dissolved), Major Ions ² , pH ⁴ , Nutrients ⁵ , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity
Rationale for Station:	To monitor PKC Seepage chemistry

Surveillance Network Program (SNP) Station 1645-79 (Active)

Description:	PKC Seepage
Location:	South PKC Dam
Sampling Frequency:	Checked weekly, sampled monthly.
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total and Dissolved), Major Ions ² , pH ⁴ , Nutrients ⁵ , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity
Rationale for Station:	To monitor PKC Seepage chemistry

Surveillance Network Program (SNP) Station 1645-80 (Active)

Description:	PKC Seepage
Location:	West PKC Dam
Sampling Frequency:	Checked weekly, sampled monthly.
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total and Dissolved), Major Ions ² , pH ⁴ , Nutrients ⁵ , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity
Rationale for Station:	To monitor PKC Seepage chemistry

STATIONS APPLYING TO THE NIWTP CLARIFIER SLUDGE SAMPLING PROGRAM

Surveillance Network Program (SNP) Station 1645-85A (Active)

Description:	Sludge Sampling from the North Inlet Water Treatment Plant
Location:	Clarifier 1, North Inlet Water Treatment Plant (Plant 1)
Sampling Frequency:	Monthly. Sampled with 1645-86A. Offset with 1645-85B and 1645-86B by two weeks.
Sampling Parameters:	Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷
Rationale for Station:	To monitor hydrocarbon levels in North Inlet Water Treatment Plant Sludge to ensure sediment and water quality is suitable for aquatic life

Surveillance Network Program (SNP) Station 1645-85B (Active)

Description:	Sludge Sampling from the North Inlet Water Treatment Plant
Location:	Clarifier 2, North Inlet Water Treatment Plant (Plant 1)
Sampling Frequency:	Monthly. Sampled with 1645-86B. Offset with 1645-85A and 1645-86A by two weeks.
Sampling Parameters:	Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷
Rationale for Station:	To monitor hydrocarbon levels in North Inlet Water Treatment Plant Sludge to ensure sediment and water quality is suitable for aquatic life

Surveillance Network Program (SNP) Station 1645-86A (Active)

Description:	Sludge Sampling from the North Inlet Water Treatment Plant
Location:	Clarifier 3, North Inlet Water Treatment Plant (Plant 2)
Sampling Frequency:	Monthly. Sampled with 1645-85A. Offset with 1645-85B and 1645-86B by two weeks.
Sampling Parameters:	Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷
Rationale for Station:	To monitor hydrocarbon levels in North Inlet Water Treatment Plant Sludge to ensure sediment and water quality is suitable for aquatic life

Surveillance Network Program (SNP) Station 1645-86B (Active)

Description:	Sludge Sampling from the North Inlet Water Treatment Plant
Location:	Clarifier 4, North Inlet Water Treatment Plant (Plant 2)
Sampling Frequency:	Monthly. Sampled with 1645-85B. Offset with 1645-85A and 1645-86A by two weeks.
Sampling Parameters:	Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷
Rationale for Station:	To monitor hydrocarbon levels in North Inlet Water Treatment Plant Sludge to ensure sediment and water quality is suitable for aquatic life

STATIONS APPLYING TO THE A21 CONSTRUCTION AND DEVELOPMENT

Surveillance Network Program (SNP) Station 1645-41 (Active)

Description:	A21 SNP Station: Near intake structure for dike pool dewatering			
Location:	A21			
Sampling Frequency:	Once prior to commencement of Discharge at a minimum of five (5) stations evenly spaced along a longitudinal transect as approved by an Inspector. At each station, samples must be collected at surface and at two (2) metre intervals	Daily during Dewatering	Every six (6) days during Dewatering	Once on the final day of Dewatering at each of the five (5) sites
Sampling Parameters:	pH ⁴ , Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Total Suspended Solids, Turbidity, Nutrients ⁵ , Total Petroleum Hydrocarbons ⁶ (TPH)	pH ⁴ , Total Suspended Solids, Turbidity, Total Phosphorus	Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Nutrients ⁵ , Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷	pH ⁴ , Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Total Suspended Solids, Turbidity, Nutrients ⁵
	Note: Additional sampling may be required at the request of an Inspector			
Rationale for Station:	To monitor water quality during A21 development			

Surveillance Network Program (SNP) Station 1645-55 (Active)

Description:	A21 SNP reference station in Lac de Gras
Location:	Northing: 7151091, Easting: 537393
Sampling Frequency:	Sample daily using approved depth integrated sampler (provided safe boating conditions)
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	Reference station for regulation of dredging and dike Construction activities during A21 development

Surveillance Network Program (SNP) Station 1645-82 (Active)

Description:	A21 SNP reference station in Lac de Gras
Location:	200 m from the dike center line Northing: 7149416, Easting: 534620
Sampling Frequency:	Sample daily using approved depth integrated sampler (provided safe boating conditions)
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	Reference Station during A21 development

Surveillance Network Program (SNP) Station 1645-83 (Active)

Description:	A21 SNP reference station in Lac de Gras
Location:	200 m from the dike center line Northing: 7149025, Easting: 534537
Sampling Frequency:	Sample daily using approved depth integrated sampler (provided safe boating conditions)
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	Reference Station during A21 development

Surveillance Network Program (SNP) Station 1645-84 (Active)

Description:	A21 SNP reference station in Lac de Gras
Location:	200 m from the dike center line Northing: 7148677, Easting: 534181
Sampling Frequency:	Sample daily using approved depth integrated sampler (provided safe boating conditions)
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	Reference Station during A21 development

STATIONS APPLYING TO THE A21 OPEN PIT MINING SAMPLING PROGRAM

Surveillance Network Program (SNP) Station 1645-51 (Active)

Description:	Sump A21 SNP Station
Location:	A21 Open Pit
Sampling Frequency:	Every two (2) weeks Note: Will only apply at the time A21 Pit is developed
Sampling Parameters:	Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Nutrients ⁵ , pH ⁴ , Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷
Rationale for Station:	To monitor water quality during A21 development

Surveillance Network Program (SNP) Station 1645-54 (Active)

Description:	A21 SNP Station. Seepage collection from inside toe of A21 Dike.	
Location:	To be determined	
Sampling Frequency:	Once prior to Discharge Note: Will only apply when A21 pit is developed	Daily during Discharge:
Sampling Parameters:	Total Ammonia, pH ⁴ , Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Nutrients ⁵ , Turbidity, Total Suspended Solids, Total Dissolved Solids, Total Petroleum Hydrocarbons ⁶ (TPH), PHC (F1-F4) ⁷	Field Parameters ³ , Total Suspended Solids, Total Phosphorus, Turbidity, Total Ammonia
Rationale for Station:	To monitor water quality during A21 development	

INACTIVE STATIONS

Surveillance Network Program (SNP) Station 1645-1 (Inactive)

Description:	Minewater Discharge
Rationale for Status:	Class "B" Licence no longer active

Surveillance Network Program (SNP) Station 1645-2 (Inactive)

Description:	Outflow decant from F1
Rationale for Status:	Class "B" Licence no longer active

Surveillance Network Program (SNP) Station 1645-3(Inactive)

Description:	Lac de Gras inflow from F1 Wetlands
Rationale for Status:	Class "B" Licence no longer active

Surveillance Network Program (SNP) Station 1645-4 (Inactive)

Description:	Discharge from Sewage Disposal Facility
Rationale for Status:	Class "B" Licence no longer active

Surveillance Network Program (SNP) Station 1645-5 (Inactive)

Description:	Outflow from disposal pond
Rationale for Status:	Class "B" Licence no longer active

Surveillance Network Program (SNP) Station 1645-6 (Inactive)

Description:	Prior to entering Lac de Gras at the stream outflow from the Sewage disposal
Rationale for Status:	Class "B" Licence no longer active

Surveillance Network Program (SNP) Station 1645-7 (Inactive)

Description:	Upstream of the confluence between the ice scrapings disposal area runoff and the stream from the Sewage outflow
Rationale for Status:	Class "B" Licence no longer active

Surveillance Network Program (SNP) Station 1645-8 (Inactive)

Description:	Down slope of the semi-permeable dike in D1 drainage way
Rationale for Status:	Class “B” Licence no longer active

Surveillance Network Program (SNP) Station 1645-9 (Inactive)

Description:	Treated Minewater pumped directly to Lac de Gras
Rationale for Status:	Class “B” Licence no longer active

Surveillance Network Program (SNP) Station 1645-10 (Inactive)

Description:	Station applying to treated Effluent Discharge to monitor Sewage Discharge from North Construction Camp
Rationale for Status:	Class “B” Licence no longer active.

Surveillance Network Program (SNP) Station 1645-12 (Inactive)

Description:	West Cell – North Inlet Facility
Location:	N/A
Sampling Frequency:	Monthly
Sampling Parameters:	Total Ammonia, Turbidity, Field Parameters ³ , Nitrate, Total Suspended Solids, Nitrate, Total Phosphorus, ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴
Rationale for Station:	Station applying to treated Effluent Discharge to monitor water in the West Cell of the North Inlet Facility
Rationale for Status:	West dike never constructed, intermediate SNP station deemed unnecessary.

Surveillance Network Program (SNP) Station 1645-14 (Inactive)

Description:	North Inlet Treatment Plant treated effluent prior to mixing with PKC treated effluent
Location:	N/A
Sampling Frequency:	Every (6) days during periods of Discharge to Lac de Gras
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total and Dissolved), Major Ions ² , pH ⁴ , Nutrients ⁵ , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity
Rationale for Station:	Station applying to treated Effluent Discharge to monitor water quality of treated effluent.
Rationale for Status:	Station was never established

Surveillance Network Program (SNP) Station 1645-15 (Inactive)

Description:	Process Plan slurry Discharge to PKC facility
Location:	Process Plant
Sampling Frequency:	Sampled monthly during periods of Discharge
Sampling Parameters:	Volume Percent Solids
Rationale for Station:	Station applying to treated Effluent Discharge to monitor slurry Discharge.
Rationale for Status:	Diavik proposes to move SNP Station 1645-15 to Section C, Flow and Volume Measurement Requirements as it would support other measurements of the Surveillance Network Program.

Surveillance Network Program (SNP) Station 1645-17 (Inactive)

Description:	PKC Treatment Plant Effluent prior to mixing with North Inlet Treatment Plant treated effluent	
Location:	N/A	
Sampling Frequency:	Every six (6) days	Quarterly
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total and Dissolved), Major Ions ² , pH ⁴ , Nutrients ⁵ , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity	BOD ₅ , Faecal Coliforms, Total Petroleum Hydrocarbons (TPH)
Rationale for Station:	To monitor PKC Effluent water quality	
Rationale for Status:	The PKC Effluent is discharged into North Inlet and the two treated effluent streams do not mix	

Surveillance Network Program (SNP) Station 1645-20 (Inactive)

Description:	Northwest of clarification pond
Location:	NW of Pond 2
Sampling Frequency:	Checked weekly, sampled monthly. Last data collected in August 2009.
Sampling Parameters:	N/A
Rationale for Station:	To monitor Groundwater down gradient of Water Retention Structures.
Rationale for Status:	Lack of data from current Station. SNP station will be replaced by monitoring requirements in SNP Part D, Item 8.

Surveillance Network Program (SNP) Station 1645-21 (Inactive)

Description:	West of Clarification pond (drainage course) between Pond 2 and Pond 3.
Location:	West of Ponds 2 and 3
Sampling Frequency:	Checked weekly, sampled monthly. Last data collected in August 2009
Sampling Parameters:	N/A
Rationale for Station:	To monitor Groundwater down gradient of Water Retention Structures
Rationale for Status:	Lack of data from current Station. SNP station will be replaced by monitoring requirements in SNP Part D, Item 8.

Surveillance Network Program (SNP) Station 1645-22 (Inactive)

Description:	North of Quarry and till areas (drainage course) on the South side of North Inlet Facility
Location:	North of Till Stockpile
Sampling Frequency:	Checked weekly, sampled monthly. Last data collected in October 2008
Sampling Parameters:	N/A
Rationale for Station:	To monitor potential surface ARD
Rationale for Status:	To date, there has not been any observed Seepage from the NCRP. Any Seepage event will be reported in the Annual Seepage Report.

Surveillance Network Program (SNP) Station 1645-23 (Inactive)

Description:	North perimeter road (drainage course) between road and North Inlet Facility.
Location:	North of Waste Rock Pile
Sampling Frequency:	Checked weekly, sampled monthly. Last data collected in October 2011.
Sampling Parameters:	N/A
Rationale for Station:	To monitor potential surface ARD
Rationale for Status:	To date, there has not been any observed Seepage from the NCRP. Any Seepage event will be reported in the Annual Seepage Report.

Surveillance Network Program (SNP) Station 1645-24 (Inactive)

Description:	East of perimeter road (drainage course)
Location:	South of Pond 1
Sampling Frequency:	Checked weekly, sampled monthly. Last data collected pre 2008.
Sampling Parameters:	N/A
Rationale for Station:	To monitor surface runoff and Seepage down gradient of Water Retention structures.
Rationale for Status:	Lack of data from current Station. SNP station will be replaced by monitoring requirements in SNP Part D, Item 8.

Surveillance Network Program (SNP) Station 1645-25 (Inactive)

Description:	East PKC Dike area (drainage course)
Location:	East of Pond 5 towards the bay
Sampling Frequency:	Checked weekly, sampled monthly. Last data collected in September 2008.
Sampling Parameters:	N/A
Rationale for Station:	To monitor surface runoff and Seepage down gradient of Water Retention Structures
Rational for Status:	Lack of data from current Station. SNP station will be replaced by monitoring requirements in SNP Part D, Item 8.

Surveillance Network Program (SNP) Station 1645-26 (Inactive)

Description:	West PKC Dike area (drainage course)
Location:	West side of Pond 4
Sampling Frequency:	Checked weekly, sampled monthly. Last data collected in September 2008
Sampling Parameters:	N/A
Rationale for Station:	To monitor surface runoff and Seepage down gradient of Water Retention Structures
Rationale for Status:	Lack of data from current Station. SNP station will be replaced by monitoring requirements in SNP Part D, Item 8.

Surveillance Network Program (SNP) Station 1645-27 (Inactive)

Description:	Airstrip Drainage Course
Location:	North of Airstrip
Sampling Frequency:	N/A
Sampling Parameters:	N/A
Rationale for Station:	Station applying to surface runoff and Groundwater to monitor water quality of drainage course
Rationale for Status:	Drainage course dried up following Construction of airstrip

Surveillance Network Program (SNP) Station 1645-28 (Inactive)

Description:	Groundwater GW1 between the North Rock Pile and North Inlet
Location:	North of Waste Rock Pile
Sampling Frequency:	Checked weekly for Groundwater flow and sampled monthly. Last data collected Pre 2008.
Sampling Parameters:	Total Ammonia, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Total Petroleum Hydrocarbons
Rationale for Station:	To monitor potential Groundwater ARD
Rationale for Status:	To date, there has not been any observed Seepage from the NCRP. Any Seepage event will be reported in the Annual Seepage Report.

Surveillance Network Program (SNP) Station 1645-29 (Inactive)

Description:	Groundwater GW2
Location:	North of Pond 2
Sampling Frequency:	Checked weekly for Groundwater flow and sampled monthly. Last data collected pre 2008
Sampling Parameters:	Total Ammonia, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Total Petroleum Hydrocarbons
Rationale for Station:	To monitor Groundwater down gradient of Water Retention Structures
Rationale for Status:	Lack of data from current Station. SNP station will be replaced by monitoring requirements in SNP Part D, Item 8.

Surveillance Network Program (SNP) Station 1645-30 (Inactive)

Description:	Groundwater GW3 Northwest of Till Disposal Area
Location:	N/A
Sampling Frequency:	Checked weekly for Groundwater flow and sampled monthly.
Sampling Parameters:	Total Ammonia, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Total Petroleum Hydrocarbons
Rationale for Station:	Station applying to surface runoff and Groundwater to monitor Groundwater quality
Rationale for Status:	Area covered by Till Pile

Surveillance Network Program (SNP) Station 1645-31 (Inactive)

Description:	Groundwater GW4 West of the PKC
Location:	South of Pond 4
Sampling Frequency:	Checked weekly for Groundwater flow and sampled monthly. Last data collected pre 2008.
Sampling Parameters:	Total Ammonia, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Total Petroleum Hydrocarbons
Rationale for Station:	To monitor Groundwater down gradient of Water Retention Structures
Rationale for Status:	Lack of data from current Station. SNP station will be replaced by monitoring requirements in SNP Part D, Item 8.

Surveillance Network Program (SNP) Station 1645-32 (Inactive)

Description:	Groundwater – South of PKC, between the Ammonium Nitrate Storage and Pond 7
Location:	South of Pond 7 and Emulsion Plant
Sampling Frequency:	Checked weekly for Groundwater flow and sampled monthly. Last data collected pre 2008.
Sampling Parameters:	Total Ammonia, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Total Petroleum Hydrocarbons
Rationale for Station:	To monitor water down gradient of Water Retention Structure and Emulsion Plant
Rationale for Status:	Diavik will create a runoff monitoring and collection program to area surrounding Emulsion Plant and Ammonium Nitrate Storage Building during freshet. New monitoring station is referenced as 1645-81.

Surveillance Network Program (SNP) Station 1645-34 (Inactive)

Description:	Near intake structure for De-watering of Lake E1		
Location:	N/A		
Sampling Frequency:	Once prior to commencement of de-watering	Daily during de-watering	Once on the final day of de-watering
Sampling Parameters:	Total Ammonia, Total Suspended Solids, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Total Phosphorus, Nitrate, Nitrite, Turbidity	Total Suspended Solids, pH ⁴ , Turbidity	Total Ammonia, Total Suspended Solids, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Total Phosphorus, Nitrate, Nitrite, Turbidity
Rationale for Station:	To monitor water quality during de-watering		
Rationale for Status:	Work is completed, Station no longer applicable.		

Surveillance Network Program (SNP) Station 1645-35 (Inactive)

Description:	Near intake structure of De-watering of Lake E6		
Location:	N/A		
Sampling Frequency:	Once prior to commencement of de-watering	Daily during de-watering	Once on the final day of de-watering
Sampling Parameters:	Total Ammonia, Total Suspended Solids, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Total Phosphorus, Nitrate, Nitrite, Turbidity	Total Suspended Solids, pH ⁴ , Turbidity	Total Ammonia, Total Suspended Solids, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Total Phosphorus, Nitrate, Nitrite, Turbidity
Rationale for Station:	To monitor water quality during de-watering		
Rationale for Status:	Work is completed, Station no longer applicable.		

Surveillance Network Program (SNP) Station 1645-36 (Inactive)

Description:	Near intake structure for De-watering of Lake E7		
Location:	N/A		
Sampling Frequency:	Once prior to commencement of de-watering	Daily during de-watering	Once on the final day of de-watering
Sampling Parameters:	Total Ammonia, Total Suspended Solids, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Total Phosphorus, Nitrate, Nitrite, Turbidity	Total Suspended Solids, pH ⁴ , Turbidity	Total Ammonia, Total Suspended Solids, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Total Phosphorus, Nitrate, Nitrite, Turbidity
Rationale for Station:	To monitor water quality during de-watering		
Rationale for Status:	Work is completed, Station no longer applicable.		

Surveillance Network Program (SNP) Station 1645-37 (Inactive)

Description:	Near intake structure for De-watering of Lake E8		
Location:	N/A		
Sampling Frequency:	Once prior to commencement of de-watering	Daily during de-watering	Once on the final day of de-watering
Sampling Parameters:	Total Ammonia, Total Suspended Solids, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Total Phosphorus, Nitrate, Nitrite, Turbidity	Total Suspended Solids, pH ⁴ , Turbidity	Total Ammonia, Total Suspended Solids, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Total Phosphorus, Nitrate, Nitrite, Turbidity
Rationale for Station:	To monitor water quality during de-watering		
Rationale for Status:	Work is completed, Station no longer applicable.		

Surveillance Network Program (SNP) Station 1645-38 (Inactive)

Description:	Near intake structure for De-watering of Lake E10		
Location:	N/A		
Sampling Frequency:	Once prior to commencement of de-watering	Daily during de-watering	Once on the final day of de-watering
Sampling Parameters:	Total Ammonia, Total Suspended Solids, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Total Phosphorus, Nitrate, Nitrite, Turbidity	Total Suspended Solids, pH ⁴ , Turbidity	Total Ammonia, Total Suspended Solids, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Total Phosphorus, Nitrate, Nitrite, Turbidity
Rationale for Station:	To monitor water quality during de-watering		
Rationale for Status:	Work is completed, Station no longer applicable.		

Surveillance Network Program (SNP) Station 1645-39 (Inactive)

Description:	Near intake structure for De-watering within the dike enclosure of A154			
Location:	N/A			
Sampling Frequency:	Once prior to commencement of Discharge at a minimum of five (5) stations evenly spaced along a longitudinal transect as approved by an Inspector. At each station, samples must be collected at surface and at two (2) metre intervals	Daily during Dewatering	Every six (6) days during Dewatering	Once on the final day of Dewatering at each of the five (5) sites
Sampling Parameters:	pH ⁴ , Field Paramaters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Total Suspended Solids, Turbidity, Nutrients ⁵	pH ⁴ , Total Suspended Solids, Turbidity, Total Phosphorus	Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Nutrients ⁵ , Oil and Grease	pH ⁴ , Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Total Suspended Solids, Turbidity, Nutrients ⁵
	Note: Additional sampling may be required at the request of an Inspector			
Rationale for Station:	To monitor water quality during de-watering			
Rationale for Status:	Work is completed, Station no longer applicable.			

Surveillance Network Program (SNP) Station 1645-40 (Inactive)

Description:	Near intake structure for dike pool watering – A418			
Location:	N/A			
Sampling Frequency:	Once prior to commencement of Discharge at a minimum of five (5) stations evenly spaced along a longitudinal transect as approved by an Inspector. At each station, samples must be collected at surface and at two (2) metre intervals	Daily during Dewatering	Every six (6) days during Dewatering	Once on the final day of Dewatering at each of the five (5) sites
Sampling Parameters:	pH ⁴ , Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Total Suspended Solids, Turbidity, Nutrients ⁵	pH ⁴ , Total Suspended Solids, Turbidity, Total Phosphorus	Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Nutrients ⁵ , Oil and Grease	pH ⁴ , Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Total Suspended Solids, Turbidity, Nutrients ⁵
	Note: Additional sampling may be required at the request of an Inspector			
Rationale for Station:	To monitor water quality during de-watering			
Rationale for Status:	Work is completed, Station no longer applicable.			

Surveillance Network Program (SNP) Station 1645-43 (Inactive)

Description:	A 21 SNP Station: Collection Pond		
Location:	Pond 6		
Sampling Frequency:	Monthly if water is present	Once prior to the commencement of Discharge to Lac de Gras	Daily during Discharge to Lac de Gras
Sampling Parameters:	Total Ammonia, Field Parameters ³ , ICP-MS Metal Scan ¹ , Major Ions ² , Nitrate Nitrite, pH ⁴ , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons (TPH)	TSS, pH ⁴ , Turbidity
Rationale for Station:	To monitor water quality during A21 development		
Rationale for Status:	The approved Construction Environmental Management Plan, Version 2.0, indicates that Pond 6 is no longer necessary.		

Surveillance Network Program (SNP) Station 1645-48 (Inactive)

Description:	Clarification pond (Pond 3)		
Location:	West side of the North Rock Pile		
Sampling Frequency:	Once prior to the commencement of the Discharge at a minimum of three (3) stations evenly spaced along a longitudinal transect at the centerline of the clarification pond collected at surface, and at two (2) metre intervals to depth	Daily during periods of Discharge	Every two (2) weeks during periods of Discharge and once on the final day of Discharge
Sampling Parameters:	pH ⁴ , Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Total Ammonia, Nitrite, Oil and Grease, Total Phosphorus, Nitrate, Total Suspended Solids, Turbidity	Total Suspended Solids, Total Phosphorus, Turbidity	pH ⁴ , Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Total Ammonia, Nitrite, Oil and Grease, Total Phosphorus, Nitrate, Total Suspended Solids, Turbidity
Rationale for Station:	To monitor water quality of Pond 3.		
Rationale for Status:	Pond is no longer large enough for three (3) stations along centre-line transect. It is now covered by SNP Station 1645-76.		

Surveillance Network Program (SNP) Station 1645-49 (Inactive)

Description:	Mine water removed from A154 Pit
Location:	N/A
Sampling Frequency:	Every two (2) weeks
Sampling Parameters:	Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Nutrients ⁵ , pH ⁴ , Total Suspended Solids, Turbidity, Oil and Grease
Rationale for Station:	Station applying to Dewatering to monitor water quality from A154 Pit
Rationale for Status:	Inactive after the closure of the A154 Open Pit

Surveillance Network Program (SNP) Station 1645-50 (Inactive)

Description:	Mine water removed from A418 Pit
Location:	A418 Open Pit
Sampling Frequency:	Not currently Monitored. Last data collected in June 2012 every two (2) weeks. Note: Will only apply at the time A418 Pit is developed.
Sampling Parameters:	Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Nutrients ⁵ , pH ⁴ , Total Suspended Solids, Turbidity, Oil and Grease
Rationale for Station:	Monitor quality of Pit Water
Rationale for Status:	With the closure of A418 Open Pit, there is no need for this station. Any water

Surveillance Network Program (SNP) Station 1645-52 (Inactive)

Description:	Seepage collected from inside toe of the A154 Dike	
Location:	A154 Dike	
Sampling Frequency:	Not Currently monitored. Last data collected in 2008. Sample once prior to Discharge:	Daily during Discharge:
Sampling Parameters:	Total Ammonia, pH ⁴ , Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Nutrients ⁵ , Turbidity, Total Suspended Solids, Total Dissolved Solids, Oil and Grease	Field Parameters ³ , Total Suspended Solids, Total Phosphorus, Turbidity, Total Ammonia
Rationale for Station:	Monitor Lake water Seepage through open pit dikes prior to Discharge to Lac de Gras	
Rationale for Status:	Seepage through open pit dikes is considered intermediate and inconsistent and is discharged to North Inlet, not to Lac de Gras.	

Surveillance Network Program (SNP) Station 1645-53 (Inactive)

Description:	Seepage collected from inside toe of the A418 Dike	
Location:	A418 Dike	
Sampling Frequency:	Not Currently monitored. Data collection was never established. Sample once prior to Discharge:	Daily during Discharge:
Sampling Parameters:	Total Ammonia, pH ⁴ , Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Nutrients ⁵ , Turbidity, Total Suspended Solids, Total Dissolved Solids, Oil and Grease	Field Parameters ³ , Total Suspended Solids, Total Phosphorus, Turbidity, Total Ammonia
Rationale for station:	Monitor Lake water Seepage through open pit dikes prior to Discharge to Lac de Gras	
Rationale for Status:	Seepage through open pit dikes is considered intermediate and inconsistent and is discharged to North Inlet, not to Lac de Gras.	

Surveillance Network Program (SNP) Station 1645-56 (Inactive)

Description:	Station applying to dredging and dike Construction
Rationale for Status:	Fixed Dredging/Diking Station located 200 meters east from the centerline of the North Inlet East Dike

Surveillance Network Program (SNP) Station 1645-57 (Inactive)

Description:	Station applying to dredging and dike Construction
Rationale for Status:	Removed as per approved Dredging TSS Management and In Lake Construction Plan

Surveillance Network Program (SNP) Station 1645-58 (Inactive)

Description:	Station applying to dredging and dike Construction
Location:	N 7.152.057, E 537.073
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

Surveillance Network Program (SNP) Station 1645-59 (Inactive)

Description:	Station applying to dredging and dike Construction
Location:	N 7.152.210, E 537.342
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

Surveillance Network Program (SNP) Station 1645-60 (Inactive)

Description:	Station applying to dredging and dike Construction
Location:	N 7.152.587, E 537.575
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

Surveillance Network Program (SNP) Station 1645-61 (Inactive)

Description:	Station applying to dredging and dike Construction
Location:	N 7.153.263, E 537.666
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

Surveillance Network Program (SNP) Station 1645-62 (Inactive)

Description:	Station applying to dredging and dike Construction
Location:	N 7.153.562, E 537.079
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

Surveillance Network Program (SNP) Station 1645-63 (Inactive)

Description:	Station applying to dredging and dike Construction
Location:	N 7.153.744, E 536.463
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

Surveillance Network Program (SNP) Station 1645-64 (Inactive)

Description:	Station applying to dredging and dike Construction
Location:	N 7.153.768, E 536.173
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

Surveillance Network Program (SNP) Station 1645-65 (Inactive)

Description:	Station applying to dredging and dike Construction
Location:	N 7.153.740, E 535.756
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

Surveillance Network Program (SNP) Station 1645-66 (Inactive)

Description:	Near intake structure for De-watering of North Inlet.		
Location:	N/A		
Sampling Frequency:	Once prior to commencement of de-watering	Daily during de-watering	Once on the final day of de-watering
Sampling Parameters:	Total Ammonia, Total Suspended Solids, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , Total Phosphorus, Nitrate, Nitrite, Turbidity	Total Suspended Solids, pH ⁴ , Turbidity	Total Ammonia, Total Suspended Solids, Field Parameters ³ , ICP-MS Metal Scan ¹ (Total), Major Ions ² , pH ⁴ , Total Phosphorus, Nitrate, Nitrite, Turbidity
Rationale for Station:	Station applying to Dewatering to monitor water quality before, during, and at the end of De-watering North Inlet.		
Rationale for Status:			

Surveillance Network Program (SNP) Station 1645-70 (Inactive)

Description:	Station applying to dredging and dike Construction
Location:	N 7.151.848, E 537.057
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	To monitor suspended solids and turbidity caused by dredging and dike Construction.
Rationale for Status:	Station referenced as 1645-A in Figure 1 of the April 12, 2005 DDMI request for additional SNP Stations.

Surveillance Network Program (SNP) Station 1645-71 (Inactive)

Description:	Station applying to dredging and dike Construction
Location:	N 7.151.369, E 536.765
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	To monitor suspended solids and turbidity caused by dredging and dike Construction.
Rationale for Status:	Station referenced as 1645-B in Figure 1 of the April 12, 2005 DDMI request for additional SNP Stations.

Surveillance Network Program (SNP) Station 1645-72 (Inactive)

Description:	Station applying to dredging and dike Construction
Location:	N 7.151.319, E 536.414
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	To monitor suspended solids and turbidity caused by dredging and dike Construction.
Rationale for Status:	Station referenced as 1645-C in Figure 1 of the April 12, 2005 DDMI request for additional SNP Stations.

Surveillance Network Program (SNP) Station 1645-73 (Inactive)

Description:	Station applying to dredging and dike Construction
Location:	N/A
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	Background reference station for the regulation of dredging and dike Construction association with A418 Pit
Rationale for Status:	Station referenced as 1645-55B in Figure 1 of the April 12, 2005 DDMI request for additional SNP Stations - Relocated background reference Station (N 7.152.720 E 538.765)