DE BEERS GROUP

Gahcho Kué Mine

Monthly Surveillance Network Program Report (MV2005L2-0015)

October 2024

November 26, 2024

November 26, 2024

Angela Love, Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor – 4922 48th Street
P.O. Box 2130
Yellowknife, NT X1A 2P6

Dear Ms. Love

SUBJECT:
Water License MV2005L2-0015 Monthly Surveillance Network Program (SNP) Report – October 2024

Please find enclosed a copy of the October 2024 Surveillance Network Program (SNP) report for the De Beers Canada Gahcho Kué Mine.

This report provides a summary of the sampling and monitoring conducted at the Gahcho Kué Mine in October 2024, and fulfills the monthly reporting requirements of the Surveillance Network Program conditions defined within Water License MV2005L2-0015.

If you have any questions or comments, or require any additional information, please contact the undersigned.

Sincerely,

Mason Elwood
Environmental Superintendent
De Beers Canada – Gahcho Kué Mine
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cc. Tom Bradbury, GNWT Inspector
cc. Patrick Kramers, Manager: Safety, Health, Environment, Risk and Training, Gahcho Kué Mine

Kurtis Trefry, Regulatory and Permitting Superintendent, Gahcho Kué Mine

LIST OF TABLES

Table 1 SNP Sampling Location Descriptions and Status
Table 2 SNP Monitoring with Rationale Provided for any Missed Samples or Parameters
Table 3 Summary of Physical Field Parameters at SNP-05
Table 4 Summary of Laboratory Analytical Results at SNP-05
Table 5 Summary of Physical Field Parameters at SNP-06
Table 6 Summary of Laboratory Analytical Results at SNP-06
Table 7 Summary of Laboratory Analytical Results at SNP-07
Table 8 Summary of Daily Monitoring of Physical Field Parameters at SNP-08
Table 9 Summary of Laboratory Analytical Results at SNP-08
Table 10 Summary of Daily Monitoring of Physical Field Parameters at SNP-09
Table 11 Summary of Laboratory Analytical Results at SNP-09
Table 12 Summary of Daily Monitoring of Physical Field Parameters at SNP-10
Table 13 Summary of Laboratory Analytical Results at SNP-10
Table 14 Summary of Physical Field Parameters at SNP-21
Table 15 Summary of Laboratory Analytical Results at SNP-21
Table 16 Water Surface Elevations at SNP-05 & 06
Table 17 Water Surface Elevations at SNP-21
Table 18 Daily Waste Water Treatment Plant Discharge Volume at SNP-07
Table 19 Pit Discharge Volume at SNP-08 During October 2024
Table 20 Pit Discharge Volume at SNP-09 During October 2024
Table 21 Pit Discharge Volume at SNP-10 During October 2024
Table 22 Daily Temperature Data
Table 23 Daily Precipitation Data
Table 24 Hourly Wind Speed and Direction
Table 25 Evaporation Data

LIST OF FIGURES

Figure 1 Active Surveillance Network Program Station Locations

Figure 2a Dissolved Oxygen Concentration of Treated Effluent at SNP-07

Figure 2b Temperature of Treated Effluent at SNP-07

Figure 2c pH of Treated Effluent at SNP-07

Figure 2d Specific Conductivity of Treated Effluent at SNP-07

Figure 2e Turbidity of Treated Effluent at SNP-07

Figure 2f Total Suspended Solids of Treated Effluent at SNP-07

Figure 3 Cumulative Monthly Water Use from Area 8 during 2024 Operations

Figure 4 Windrose for the Month of October 2024

APPENDIX

Appendix A Laboratory Certificates of Analysis

1.0. INTRODUCTION

This report presents a summary of the activities conducted during October 2024 in support of the De Beers Canada Inc. (De Beers) Surveillance Network Program (SNP) for the Gahcho Kué Mine (GK Mine). Specifically, this report addresses the following requirement defined in the De Beers Water License (MV2005L2-0015) for the GK Mine:

Part B: General Conditions

"6. The Licensee shall implement the Surveillance Network Program, which is annexed to and forms part of this License, and any amendment to the Surveillance Network Program as may be made from time to time by the Board."

This report includes results from sampling that was conducted by the GK Mine Environment Department in accordance with practices and procedures identified in the De Beers Quality Assurance/Quality Control (QA/QC) plan (DeBeers, 2022).

This report also summarizes water use related to camp operations at the GK Mine, as well as the continuous meteorological measurements required under Part C of the SNP.

SNP samples requiring laboratory analysis were submitted to an accredited laboratory, ALS Environmental (ALS) that maintains certification with the Canadian Association for Laboratory Accreditation (CALA). Physical parameters (i.e., dissolved oxygen, temperature, pH, conductivity, turbidity, and TSS) were measured in the field using an InSitu aquaTROLL 500 multi-parameter handheld water quality meter.

2.0. SNP SAMPLING STATIONS AND SAMPLING STATUS

During the month of October, SNP data were collected or received in association with the following activities at the GK Mine:

- The influence of the West Mine Rock Pile on water quality in the Water Management Pond (SNP-05);
- The influence of the FPK on water quality in the Water Management Pond (SNP-06);
- The discharge of treated effluent from the sewage treatment plant (SNP-07);
- Dewatering of the 5034 Open Pit (SNP-08);
- Dewatering of the Hearne Open Pit (SNP-09);
- Dewatering of the Tuzo Open Pit (SNP-10);
- The influence of pit dewatering on water quality in CP1 (SNP-21);
- Water taking from Area 8 of Kennady Lake; and
- The continuous operation of meteorological stations located at the GK mine.

A description and the status of each SNP station at the GK Mine in October is provided in **Table 1,** and SNP sample locations are shown in **Figure 1**.

3.0. SUMMARY OF SNP MONITORING CONDUCTED IN OCTOBER 2024

A daily summary of SNP monitoring activities conducted in October 2024, including sample dates and rationale for any missed samples or parameters, is provided in **Table 2.**

3.1. SNP-05 - Water Management Pond (North of the West Mine Rock Pile)

Monthly water quality monitoring was conducted at SNP-05 on October 08. Total depth at the station was approximately 10.18 metres. Monitoring consisted of conducting a physicochemical profile of the water column at surface and then sequentially 1.0 metre increments, collecting water quality samples above and below the stratification layer, if one was detected. If no layer is apparent, the sample is collected at mid column.

Field parameters were recorded from within the water column from the surface to approximately 0.5 metre off bottom. This physicochemical profile data is summarized in **Table 3.** After profiling the water column and reviewing each of the prescribed field parameters recorded, the field crew determined there was no stratification within the water column. A sample was collected at an effective depth of 5.0 metres. The samples were submitted to ALS for analysis of physical parameters, major ions, nutrients, total organic carbon, and total metals. Laboratory analytical results are presented in **Table 4.** Due to a logistical error and the closure of the ALS lab for the observed Thanksgiving holiday, the following parameters exceeded their hold times: TDS, TSS, Turbidity and Nutrients. De Beers has contacted the freight carrier and implemented additional measures to ensure that samples are being received by ALS on time. De Beers attempted to resample, however due to unsafe transitional ice conditions a sample could not be completed.

Copies of the laboratory certificate of analysis is provided in **Appendix A.**

The water surface elevation in the Water Management Pond is discussed in Section 4.2.

3.2. SNP-06 - Water Management Pond (Southwest of Dyke L)

Monthly water quality monitoring was conducted at SNP-06 on October 08. Total depth at the station was approximately 6.18 metres. Monitoring consisted of conducting a physicochemical profile of the water column at surface and then sequentially 1.0 metre increments, collecting water quality samples above and below the stratification layer, if one was detected. If no layer is apparent, the sample is collected at mid column.

Field parameters were recorded from within the water column from the surface to approximately 0.5 m off bottom. This physicochemical profile data is summarized in **Table 5.** After profiling the water column and reviewing each of the prescribed field parameters recorded, the field crew determined there was no stratification within the water column. A sample was collected at an effective depth of 3.0 metres. A quality assurance and control sample (Travel Blank – October 08) was also collected. These samples were submitted to ALS for analysis of physical parameters, major ions, nutrients, total organic carbon, total metals, volatile organic compounds - benzene, toluene, ethyl benzene & xylenes including o and m+p xylenes (BTEX) and total petroleum hydrocarbons. Laboratory analytical results are presented in **Table 6.** Due to a logistical error and the closure of the ALS lab for the observed Thanksgiving holiday, the following parameters

exceeded their hold times: TDS, TSS, Turbidity and Nutrients. De Beers has contacted the freight carrier and implemented additional measures to ensure that samples are being received by ALS on time. De Beers attempted to resample, however due to unsafe transitional ice conditions a sample could not be completed.

Copies of the laboratory certificate of analysis is provided in **Appendix A.**

The water surface elevation in the Water Management Pond is discussed in Section 4.2.

3.3. SNP-07 - Treated Effluent from Waste Water Treatment Plant (WWTP)

A monthly sample of treated effluent was collected at SNP-07 on October 02. A quality assurance and control sample (Duplicate – October 02) was also collected. These sample was submitted to ALS for analysis of physical parameters, major ions and nutrients, total organic carbon, *E. coli*, total and fecal coliforms, biological oxygen demand (BOD), oil and grease, volatile organic compounds (BTEX) and total petroleum hydrocarbons (TPH).

A summary of the laboratory analytical results for SNP-07 are presented in **Table 7**. Copies of the laboratory certificates of analysis are provided in **Appendix A**.

The results of the continuous monitoring of physical parameters (dissolved oxygen, temperature pH, specific conductivity, turbidity and TSS) at SNP-07 for the month of October are summarized in **Figures 2a to 2f**.

Results for continuous monitoring of the flow and volume of treated effluent discharged at SNP-07 in October are discussed in Section 4.4.

3.4. SNP-08 – Wastewater Collection Sump – In-line from 5034 Open Pit

Daily monitoring results for physical parameters at SNP-08 (dissolved oxygen, temperature, pH, conductivity, turbidity and TSS) for the month of October are presented in **Table 8.**

Water quality samples were collected at SNP-08 on October 02, 12, 15, 23 and 28. These samples were submitted to ALS for analysis of physical parameters, major ions, nutrients. The sample collected on October 02 included analysis for monthly parameters of metals (dissolved and total), total petroleum hydrocarbons, BTEX, and radionuclides. Analytical Results are presented in **Table 9.**

Copies of the laboratory certificates of analysis are provided in **Appendix A.**

Pit dewatering flow rate and volume discharge measurements, a monitoring requirement at SNP-08, are discussed in Section 4.5.

3.5. SNP-09 – Wastewater Collection Sump – In-line from Hearne Open Pit

Daily monitoring results for physical parameters at SNP-09 (dissolved oxygen, temperature, pH, conductivity, turbidity and TSS) for the month of October are presented in **Table 10.**

Water quality samples were collected at SNP-09 on October 05. The sample was submitted to ALS for analysis of physical parameters, major ions, nutrients. The sample collected on October 05 also included analysis for monthly parameters of metals (dissolved and total), total petroleum hydrocarbons, BTEX, and radionuclides. Analytical Results are presented in **Table 11.**

Copies of the laboratory certificates of analysis are provided in **Appendix A.**

Pit dewatering flow rate and volume discharge measurements, a monitoring requirement at SNP-09, are discussed in Section 4.6.

3.6. SNP-10 – Wastewater Collection Sump – In-line from Tuzo Open Pit

Daily monitoring results for physical parameters at SNP-10 (dissolved oxygen, temperature, pH, conductivity, turbidity and TSS) for the month of October are presented in **Table 12.**

Water quality samples were collected at SNP-10 on October 02, 07, 16 & 22. A quality assurance and control sample (Travel Blank – October 16) was also collected. These samples were submitted to ALS for analysis of physical parameters, major ions, nutrients. The sample collected on October 02 included analysis for monthly parameters of metals (dissolved and total), total petroleum hydrocarbons, BTEX, and radionuclides. Analytical Results are presented in **Table 13.** Due to a logistical error and the closure of the ALS lab for the observed Thanksgiving holiday, the following parameters associated with the October 7 weekly sample exceeded their hold times: TDS, TSS, Turbidity and Nutrients. De Beers has contacted the freight carrier and implemented additional measures to ensure that samples are being received by ALS on time. De Beers was unable to resample due to lack of discharge following this date.

Copies of the laboratory certificates of analysis are provided in **Appendix A.**

Pit dewatering flow rate and volume discharge measurements, a monitoring requirement at SNP-08, are discussed in Section 4.5.

3.7. SNP-21 – Collection Pond 1

Monthly water quality monitoring was conducted at SNP-21 on October 08. Total depth at the station was approximately 6.60 metres. Monitoring consisted of conducting a physicochemical profile of the water column at surface and then sequentially 1.0 metre increments, collecting water quality samples above and below the stratification layer, if one was detected. If no layer is apparent, the sample is collected at mid column.

Field parameters were recorded from within the water column from the surface to approximately 0.5 m off bottom. This physicochemical profile data is summarized in **Table 14**. After profiling the water column and reviewing each of the prescribed field parameters recorded, the field crew determined there was no stratification within the water column. A sample was collected at an effective depth of 3.0 metres. These sample was submitted to ALS for analysis of physical parameters, major ions, nutrients, and total metals. Laboratory analytical results are presented in **Table 15.** Due to a logistical error and the closure of the ALS lab for the observed Thanksgiving

holiday, the following parameters exceeded there hold times: TDS, TSS, Turbidity and Nutrients. De Beers has contacted the freight carrier and implemented additional measures to ensure that samples are being received by ALS on time. De Beers attempted to resample, however due to unsafe transitional ice conditions a sample could not be completed.

A copy of the laboratory certificate of analysis is provided in **Appendix A**.

The water surface elevation of Collection Pond 1 is discussed in Section 4.3.

4.0. Flow and Volume Measurements and Instrumentation Status

4.1. Area 8 Water Taking

Raw water is pumped from Area 8 to the potable water treatment plant. Potable water generated by the plant is then distributed throughout the main camp. Flow rates and volumes of water treated are measured and recorded by a Burkert™ SO 55-P40-B6A2A flow meter.

The total volume of water obtained from Area 8 in from October 01 - 31 was 2,810 m^3. The total volume consumed since the Water License renewal date (September 24, 2024) is 3,509 m^3. Monthly water taking volumes from Area 8 are summarized in **Figure 3**.

4.2. Water Surface Elevation in the Water Management Pond (SNP-05 & SNP-06)

A summary of the water surface elevations in the Water Management Pond during 2024 is provided in **Table 16.**

4.3. Water Surface Elevation in Collection Pond 1 (SNP-21)

A summary of the water surface elevations in Collection Pond 1 during 2024 is provided in **Table 17.**

4.4. Effluent Discharge from the Waste Water Treatment Plant (SNP-07)

A summary of the daily volumes of treated effluent discharged from the WWTP in October is provided in **Table 18.** A total of 2,854 m^3 was discharged at a mean daily discharge rate of 92 m^3/day. Flow rate and volume at SNP-07 is measured by an Endress+Hauser™ Promag 10 flow metre, calibrated by the manufacturer and installed per the manufacturer's recommendations.

4.5. Dewatering of the 5034 Pit (SNP-08)

During active pit dewatering operations, flow rate and volume of water pumped from 5034 Pit is measured and recorded by an Endress + Hauser™ Proline Promag 55S electromagnetic flow metre attached to the pipeline coming from the pump. During upset conditions, supplemental flow rate and volume data are also recorded using flow rating curves specific to the dewatering pump in use. A total of 53,900 m^3 was discharged from the 5034 Pit into the Water Management Pond (Area 3) in October, at a mean daily flow rate of 0.020 m^3/s. A summary of the daily flow rate and volume of water discharged from the 5034 Pit in October is presented in **Table 19**.

4.6. Dewatering of the Hearne Pit (SNP-09)

During active pit dewatering operations, flow rate and volume of water pumped from the Hearne Pit is measured and recorded by an Endress + Hauser™ Proline Promag 55S electromagnetic flow meter attached to the pipeline coming from the pump. During upset conditions, supplemental flow rate and volume data are also recorded using flow rating curves specific to the dewatering pump in use. A total of 7,938 m^3 was discharged from the Hearne Pit into the Water Management Pond (Area 3) in October, at a mean daily flow rate of 0.018 m^3/s. A summary of the daily flow rate and volume of water discharged from the Hearne Pit in October is presented in **Table 20**. The last day of pumping from the Hearne Pit was observed on October 05. Hearne Pit mining operations officially ceased on October 30th. This SNP station will no longer be active as of this date, with the pit structure transitioning to FPK deposition on October 31.

4.7. Dewatering of the Tuzo Pit (SNP-10)

During active pit dewatering operations, flow rate and volume of water pumped from the Tuzo Pit is measured and recorded by an Endress + Hauser™ Proline Promag 55S electromagnetic flow meter, housed within the dewatering pump skid. During upset conditions, supplemental flow rate and volume data are also recorded using flow rating curves specific to the dewatering pump in use. A total of 35,057 m^3 was discharged from the Tuzo Pit into the Water Management Pond (Area 3) in October, at a mean daily flow rate of 0.016 m^3/s. A summary of the daily flow rate and volume of water discharged from the Tuzo Pit in October is presented in **Table 21**.

5.0. METEOROLOGICAL DATA

Meteorological monitoring was ongoing throughout October, in accordance with the requirements of Part C of the SNP. The following meteorological parameters are monitored and calculated at the GK Mine:

a) Mean, minimum and maximum daily temperatures, in degrees Celsius (°C);
b) Precipitation, measured and recorded in hourly and daily totals, in millimeters (mm);
c) Wind speed, in kilometers per hour (km/h);
d) Hourly wind direction, in degrees (°); and
e) Evaporation, monitored during the ice-free season between July and freeze up in October or November, as calculated by hourly and daily averages, in millimeters per day (mm/d) from a reasonable location near the GK Mine, but sufficiently far away from any structures.

This report provides the tabular summaries of the data as per Part C.

A summary of the meteorological data collected at the GK Mine in October is provided in **Tables 22 to 25** and in **Figure 4**.

6.0. CLOSURE

This report has provided a summary of the SNP activities conducted at the GK Mine in October 2024 and fulfills the monthly reporting requirements as defined within the De Beers Canada Inc. Gahcho Kué Mine Type A Water License MV2005L2-0015.

The next monthly report, covering SNP monitoring activities conducted in November 2024, and any delayed results, will be submitted to the MVLWB on or before December 31, 2024.

7.0. REFERENCES

De Beers, 2022. Quality Assurance and Quality Control Plan –Version 3. Gahcho Kué Mine. Submitted to the Mackenzie Valley Land and Water Board, Yellowknife, NT. October 2022

DeBeers, 2010. Gahcho Kué Project Environmental Impact Statement. Gahcho Kué Project. Submitted to the Mackenzie Valley Land and Water Board, Yellowknife, NT. December 2010.

MVLWB (Mackenzie Valley Land and Water Board)

Issuance of Type A Water License De Beers Canada Inc. Gahcho Kué Mine. MV2005L2-0015. Yellowknife, NT. September 2014.

Amended Type A Water Licence De Beers Canada Inc. Gahcho Kué Mine. MV2005L2-0015. Yellowknife, NT. March 2021.

TABLES

Table 1. SNP Sampling Location Descriptions and Status (October 2024)

SNP Station	Description	Status	Sampled
SNP-01	Three locations along edge of mixing zone in Lake N11	Inactive	No
SNP-02	Inline Monitoring for end-of-pipe Discharge from Water Management Pond to Lake N11	Inactive	No
SNP-05	**Water Management Pond - North of West Mine Rock Pile**	**Active**	**Yes**
SNP-06	**Water Management Pond - Southwest of Dyke L**	**Active**	**Yes**
SNP-07	**Effluent from Sewage Treatment Plant**	**Active**	**Yes**
SNP-08	**Wastewater Collection Sump - In-line from 5034 Open Pit**	**Active**	**Yes**
SNP-09	**Wastewater Collection Sump - In-line from Hearne Open Pit**	**Active**	**Yes**
SNP-10	**Wastewater Collection Sump - In-line from Tuzo Open Pit**	**Active**	**Yes**
SNP-11	Seepage Survey - West Mine Rock Pile	Inactive	No
SNP-12	Seepage Survey - South Mine Rock Pile	Inactive	No
SNP-13	Seepage Survey - Fine PKC Facility	Inactive	No
SNP-14	Seepage Survey - Coarse PKC Facility	Inactive	No
SNP-15	Dyke Seepage - North of Dyke E	Inactive	No
SNP-16	Dyke Seepage - North of Dyke D	Inactive	No
SNP-17	Dyke Seepage - East of Dyke A1	Inactive	No
SNP-18	Outlet of Lake N11	Inactive	No
SNP-19	Outlet of Area 8	Inactive	No
SNP-20	Intake point in Water Management Pond for Discharge to Lake N11 and Area 8	Inactive	No
SNP-21	**Collection Pond 1 (CP1)**	**Active**	**Yes**

Table 2. SNP Monitoring Conducted in October, 2024, with Rationale Provided for any Missed Samples or Parameters

Date	Station										QA/QC Samples Collected	Missed Parameters	Rationale
	SNP-05 Monthly	SNP-06 Monthly	SNP-07 Monthly	SNP-08 Weekly	SNP-08 Monthly	SNP-09 Weekly	SNP-09 Monthly	SNP-10 Weekly	SNP-10 Monthly	SNP-21 Monthly			
1-Oct-23													
2-Oct-23			x		x				x		SNP-07 - Duplicate		
3-Oct-23													
4-Oct-23													
5-Oct-23							x						
6-Oct-23													
7-Oct-23								x					
8-Oct-23	x	x								x	SNP-06 - Travel Blank		
9-Oct-23													
10-Oct-23													
11-Oct-23													
12-Oct-23				x									
13-Oct-23													
14-Oct-23													
15-Oct-23				x									
16-Oct-23								x			SNP-10 -Travel Blank		
17-Oct-23													
18-Oct-23													
19-Oct-23													
20-Oct-23													
21-Oct-23													
22-Oct-23								x					
23-Oct-23				x									
24-Oct-23													
25-Oct-23													
26-Oct-23													
27-Oct-23													
28-Oct-23				x									
29-Oct-23													
30-Oct-23													
31-Oct-23													

Notes:

1. Continuous monitoring of physical parameters at SNP-07 were ongoing throughout the month
2. SNP-08, SNP-09, and SNP-10 daily samples are only collected when the pit dewatering pumps are operational
3. Continuous monitoring of meteorological data was ongoing throughout the month.

Table 3. Summary of Monthly Physical Parameters at SNP-05 (October 8, 2024)

Station (Effective Depth)	SNP-05-0.3m	SNP-05-1m	SNP-05-2m	SNP-05-3m	SNP-05-4m	SNP-05-5m	SNP-05-6m	SNP-05-7m	SNP-05-8m	SNP-05-9m
Dissolved Oxygen (mg/L)	99.04	99.02	98.93	98.81	98.81	**98.76**	98.62	98.72	98.63	98.48
Dissolved Oxygen (%)	12.26	12.28	12.27	12.27	12.30	**12.29**	12.28	12.29	12.29	12.27
Temperature (°C)	3.64	3.58	3.61	3.56	3.49	**3.51**	3.48	3.48	3.47	3.47
pH	7.82	7.82	7.82	7.82	7.82	**7.82**	7.82	7.83	7.83	7.83
Specific Conductivity (µS/cm)	1678.53	1679.75	1676.72	1678.84	1681.78	**1680.38**	1680.52	1680.84	1681.08	1681.09
Turbidity (NTU)	0.00	0.00	0.00	0.00	0.00	**0.00**	0.00	0.00	0.00	0.00
Total Suspended Solids (mg/L)	0.00	0.00	0.00	0.00	0.00	**0.00**	0.00	0.00	0.00	0.00

Notes:

Laboratory sample taken at 5.0 m, highlighted in bold. Total Depth 10.18 m

Table 4. Summary of Laboratory Analytical Results at SNP-05 (October, 2024)

Parameters	Units	SNP-05-5m
		8-Oct-24
		Monthly
Alkalinity, Bicarbonate	mg/L	33.8
Alkalinity, Carbonate	mg/L	<1.0
Alkalinity, Hydroxide	mg/L	<1.0
Alkalinity, Total	mg/L	33.8
Aluminum (Al)-Total	mg/L	0.0166
Ammonia, Total (as N)	mg/L	0.0307
Antimony (Sb)-Total	mg/L	0.00012
Arsenic (As)-Total	mg/L	0.000182
Barium (Ba)-Total	mg/L	0.118
Beryllium (Be)-Total	mg/L	<0.000020
Bismuth (Bi)-Total	mg/L	<0.000050
Boron (B)-Total	mg/L	0.69
Bromide (Br)	mg/L	4.58
Cadmium (Cd)-Total	mg/L	0.0000176
Calcium (Ca)-Dissolved	mg/L	125
Calcium (Ca)-Total	mg/L	123
Cesium (Cs)-Total	mg/L	0.000049
Chloride	mg/L	411
Chromium (Cr)-Total	mg/L	<0.00010
Cobalt (Co)-Total	mg/L	0.000162
Conductivity	µS/cm	1660
Copper (Cu)-Total	mg/L	0.00058
Fluoride	mg/L	0.335
Hardness (as CaCO3)	mg/L	460
Iron (Fe)-Total	mg/L	0.0178
Lead (Pb)-Total	mg/L	0.00007
Lithium (Li)-Total	mg/L	0.0207
Magnesium (Mg)-Dissolved	mg/L	35.9
Magnesium (Mg)-Total	mg/L	34.4
Manganese (Mn)-Total	mg/L	0.0118
Mercury (Hg)-Total	mg/L	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.00719
Nickel (Ni)-Total	mg/L	0.00392
nitrate (as N)	mg/L	9.48
nitrate + nitrite (as N)	mg/L	9.45
nitrite (as N)	mg/L	0.03
phosphate, ortho-, dissolved (as P)	mg/L	<0.0010
pH		7.69
phosphorus, dissolved inorganic	mg/L	<0.0010
phosphorus, dissolved organic	mg/L	0.0038
phosphorus, total dissolved	mg/L	0.0038
phosphorus, total inorganic	mg/L	0.0012
phosphorus, total	mg/L	0.0057
Potassium (K)-Dissolved	mg/L	26.5
Potassium (K)-Total	mg/L	24.5
Rubidium (Rb)-Total	mg/L	0.0236
Selenium (Se)-Total	mg/L	0.000054
Silicate (as SiO2)	mg/L	1.75
Silicon (Si)-Total	mg/L	0.97
Silver (Ag)-Total	mg/L	<0.000010
Sodium (Na)-Dissolved	mg/L	117
Sodium (Na)-Total	mg/L	112
Strontium (Sr)-Total	mg/L	1.92
Sulfate	mg/L	92.5
Sulfur (S)-Total	mg/L	34.8
solids, total dissolved [TDS]	mg/L	1180
Tellurium (Te)-Total	mg/L	0.00039
Thallium (Tl)-Total	mg/L	0.000041
Thorium (Th)-Total	mg/L	<0.00010

Table 4. Summary of Laboratory Analytical Results at SNP-05 (October, 2024)

Parameters	Units	SNP-05-5m
		8-Oct-24
		Monthly
Tin (Sn)-Total	mg/L	<0.000050
Titanium (Ti)-Total	mg/L	<0.00030
Kjeldahl nitrogen, total [TKN]	mg/L	0.449
carbon, total organic [TOC]	mg/L	2.19
solids, total suspended [TSS]	mg/L	<1.0
Tungsten (W)-Total	mg/L	<0.00010
Turbidity	NTU	0.74
Uranium (U)-Total	mg/L	0.00183
Vanadium (V)-Total	mg/L	<0.00050
Zinc (Zn)-Total	mg/L	<0.0015
Zirconium (Zr)-Total	mg/L	<0.00020

Table 5. Summary of Monthly Physical Parameters at SNP-06 (October 08, 2024)

Station (Effective Depth)	SNP-06-0.3m	SNP-06-1m	SNP-06-2m	SNP-06-3m	SNP-06-4m	SNP-06-5m	SNP-06-6m
Dissolved Oxygen (mg/L)	12.29	12.30	12.29	**12.31**	12.32	12.32	12.34
Dissolved Oxygen (%)	98.95	98.97	98.78	**98.80**	98.86	98.84	98.99
Temperature (°C)	3.54	3.50	3.46	**3.45**	3.46	3.46	3.45
pH	7.93	7.92	7.93	**7.93**	7.93	7.93	7.93
Specific Conductivity (µS/cm)	1680.66	1681.82	1682.17	**1682.19**	1682.88	1682.68	1683.13
Turbidity (NTU)	0.00	0.00	0.00	**0.00**	0.00	0.00	0.00
Total Suspended Solids (mg/L)	0.00	0.00	0.00	**0.00**	0.00	0.00	0.00

Notes:

Lab sample taken at 3.0m, highlighted in bold. Total Depth 6.18 m

Table 6. Summary of Laboratory Analytical Results at SNP-06 (October, 2024)

Parameters	Units	SNP-06-3m	SNP-06-3m
		8-Oct-24	8-Oct-24
		Monthly	Travel Blank
Alkalinity, Bicarbonate	mg/L	34.3	<1.0
Alkalinity, Carbonate	mg/L	<1.0	<1.0
Alkalinity, Hydroxide	mg/L	<1.0	<1.0
Alkalinity, Total	mg/L	34.3	<1.0
Aluminum (Al)-Total	mg/L	0.0167	<0.0030
Ammonia, Total (as N)	mg/L	0.0332	<0.0050
Antimony (Sb)-Total	mg/L	0.00012	<0.00010
Arsenic (As)-Total	mg/L	0.000174	<0.000030
Barium (Ba)-Total	mg/L	0.116	<0.00010
Benzene	mg/L	<0.00050	<0.00050
Beryllium (Be)-Total	mg/L	<0.000020	<0.000020
Bismuth (Bi)-Total	mg/L	<0.000050	<0.000050
Boron (B)-Total	mg/L	0.69	<0.010
Bromide (Br)	mg/L	4.56	<0.0500
Cadmium (Cd)-Total	mg/L	0.0000247	<0.0000050
Calcium (Ca)-Dissolved	mg/L	119	<0.050
Calcium (Ca)-Total	mg/L	125	<0.050
Cesium (Cs)-Total	mg/L	0.000047	<0.000010
Chloride	mg/L	411	<0.50
Chromium (Cr)-Total	mg/L	<0.00010	<0.00010
Cobalt (Co)-Total	mg/L	0.000166	<0.000050
Conductivity	µS/cm	1650	<2.0
Copper (Cu)-Total	mg/L	0.00058	<0.00015
Ethylbenzene	mg/L	<0.00050	<0.00050
F1 (C6-C10)	mg/L	<0.10	<0.10
F1-BTEX	mg/L	<0.100	<0.100
F2 (C10-C16)	mg/L	<0.10	<0.10
F3 (C16-C34)	mg/L	<0.25	<0.25
F4 (C34-C50)	mg/L	<0.25	<0.25
Fluoride	mg/L	0.332	<0.020
Hardness (as CaCO3)	mg/L	440	<0.50
Iron (Fe)-Total	mg/L	0.0186	<0.0050
Lead (Pb)-Total	mg/L	0.000037	<0.000030
Lithium (Li)-Total	mg/L	0.0207	<0.0010
Magnesium (Mg)-Dissolved	mg/L	34.7	<0.0050
Magnesium (Mg)-Total	mg/L	33.6	<0.0050
Manganese (Mn)-Total	mg/L	0.0116	<0.00010
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050
meta + para Xylene	mg/L	<0.00050	<0.00050
Molybdenum (Mo)-Total	mg/L	0.00718	<0.000050
Nickel (Ni)-Total	mg/L	0.00378	<0.00010
Nitrate and Nitrite	mg/L	9.46	<0.0058
Nitrate as Nitrogen	mg/L	9.43	<0.0030
Nitrite as Nitrogen	mg/L	0.0296	<0.0050
Orthophosphate-Dissolved (as P)	mg/L	<0.0010	<0.0010
ortho-Xylene	mg/L	<0.00050	<0.00050
pH		7.67	5.51
Phosph (P)-Dis Inorg	mg/L	0.0011	<0.0010
Phosph (P)-Dis Org	mg/L	0.0027	<0.0020
Phosph (P)-Tot Dis	mg/L	0.0038	<0.0010
Phosph (P)-Tot Inorg	mg/L	<0.0010	<0.0010
Phosphorus - Total	mg/L	0.0045	<0.0010
Potassium (K)-Dissolved	mg/L	26	<0.050
Potassium (K)-Total	mg/L	23.8	<0.050
Rubidium (Rb)-Total	mg/L	0.023	<0.00020
Selenium (Se)-Total	mg/L	<0.000050	<0.000050
Silicate (as SiO2)	mg/L	1.73	<0.50
Silicon (Si)-Total	mg/L	0.95	<0.10
Silver (Ag)-Total	mg/L	<0.000010	<0.000010
Sodium (Na)-Dissolved	mg/L	116	<0.010

Table 6. Summary of Laboratory Analytical Results at SNP-06 (October, 2024)

Parameters	Units	SNP-06-3m	SNP-06-3m
		8-Oct-24	8-Oct-24
		Monthly	Travel Blank
Sodium (Na)-Total	mg/L	109	<0.030
Strontium (Sr)-Total	mg/L	1.86	<0.00020
Styrene	mg/L	<0.00050	<0.00050
Sulfate	mg/L	92.9	<0.300
Sulfur (S)-Total	mg/L	34.3	<0.50
Solids, total dissolved [TDS]	mg/L	1180	<10
Tellurium (Te)-Total	mg/L	0.00032	<0.00020
Thallium (Tl)-Total	mg/L	0.000039	<0.000010
Thorium (Th)-Total	mg/L	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	<0.000050	<0.000050
Titanium (Ti)-Total	mg/L	<0.00060	<0.00030
Toluene	mg/L	<0.00050	<0.00050
Total Hydrocarbons (C6-C50)	mg/kg	<0.40	<0.40
Total Kjeldahl Nitrogen	mg/L	0.293	<0.050
Total Organic Carbon	mg/L	2.22	<0.50
Total Suspended Solids	mg/L	<1.0	<1.0
Tungsten (W)-Total	mg/L	<0.00010	<0.00010
Turbidity	NTU	0.59	<0.10
Uranium (U)-Total	mg/L	0.00183	<0.000010
Vanadium (V)-Total	mg/L	<0.00050	<0.00050
Xylenes	mg/L	<0.00075	<0.00075
Zinc (Zn)-Total	mg/L	<0.0015	<0.0015
Zirconium (Zr)-Total	mg/L	<0.00020	<0.00020

Table 7. Summary of Laboratory Analytical Results at SNP-07 (October, 2024)

Parameters	Units	EQC	SNP-07	SNP-07
			2-Oct-24	2-Oct-24
			Monthly	Duplicate
Ammonia, Total (as N)	mg/L		2.05	2.24
Benzene	mg/L		<0.00050	<0.00050
BOD	mg/L		<2.0	<2.0
Conductivity	µS/cm		668	660
E. Coli	MPN/100mL		<1.0	<1.0
Ethylbenzene	mg/L		<0.00050	<0.00050
F1 (C6-C10)	mg/L		<0.10	<0.10
F1-BTEX	mg/L		<0.100	<0.100
F2 (C10-C16)	mg/L		<0.10	<0.10
F3 (C16-C34)	mg/L		<0.25	<0.25
F4 (C34-C50)	mg/L		<0.25	<0.25
Fecal Coliforms	CFU/100mL	20	<1.0	1
meta + para Xylene	mg/L		<0.00050	<0.00050
Nitrate and Nitrite	mg/L		6.69	6.57
Nitrate as Nitrogen	mg/L		6.65	6.54
Nitrite as Nitrogen	mg/L		0.0388	0.032
Oil and Grease	mg/L		<5.0	<5.0
Orthophosphate-Dissolved (as P)	mg/L		2.16	2.16
ortho-Xylene	mg/L		<0.00050	<0.00050
pH			7.61	7.59
Phosph (P)-Dis Inorg	mg/L		2.07	2.16
Phosph (P)-Dis Org	mg/L		<0.198	<0.198
Phosph (P)-Tot Dis	mg/L		1.93	1.87
Phosph (P)-Tot Inorg	mg/L		2.18	2.02
Phosph (P)-Total	mg/L		1.81	1.94
Styrene	mg/L		<0.00050	<0.00050
TDS	mg/L		436	440
Toluene	mg/L		<0.00050	<0.00050
Total Coliform	MPN/100mL		<1.0	12
Total Hydrocarbons	mg/L		<0.40	<0.40
Total Kjeldahl Nitrogen	mg/L		3.81	3.98
Total Organic Carbon	mg/L		12	12.8
Total Suspended Solids	mg/L		<1.0	<1.0
Turbidity	NTU		0.21	0.16
Xylenes	mg/L		<0.00075	<0.00075

Table 8. Summary of Daily Physical Parameters at SNP-08 (October, 2024)

Date	Sample Type	Dissolved Oxygen	Dissolved Oxygen	pH	Specific Conductivity	Temperature	Total Suspended Solids	Turbidity
		%	mg/L		µS/cm	°C	mg/L	NTU
1-Oct-24	Daily	48.31	5.48	7.95	5340.92	6.74	0.00	0.00
2-Oct-24	Monthly	40.51	4.60	8.05	5479.68	6.53	0.00	0.00
3-Oct-24	Daily	51.07	5.79	8.65	5701.62	6.64	426.58	275.21
4-Oct-24	-	-	-	-	-	-	-	-
5-Oct-24	-	-	-	-	-	-	-	-
6-Oct-24	Daily	62.56	6.72	8.19	5618.89	8.73	21.93	14.15
7-Oct-24	Daily							
8-Oct-24	Daily	54.39	6.13	8.17	5925.02	6.70	235.17	151.72
9-Oct-24	Daily	83.07	9.33	7.74	4943.36	6.65	223.64	144.77
10-Oct-24	-	-	-	-	-	-	-	-
11-Oct-24	-	-	-	-	-	-	-	-
12-Oct-24	Weekly	86.65	10.26	8.00	4369.16	5.80	118.04	76.15
13-Oct-24	Daily	81.00	9.44	7.96	5333.89	6.09	299.12	192.98
14-Oct-24	Daily	80.97	9.30	7.70	4690.18	6.36	98.92	64.41
15-Oct-24	Weekly	80.41	9.08	7.71	4995.40	6.72	28.82	18.59
16-Oct-24	Daily	78.00	9.03	8.05	5512.56	5.75	11418.07	7366.50
17-Oct-24	Daily	77.19	8.81	7.62	5038.74	5.87	13.12	8.47
18-Oct-24	Daily	73.53	8.55	7.71	4941.85	5.46	48.72	31.43
19-Oct-24	Daily	67.56	8.02	7.95	5486.22	4.79	152.22	98.21
20-Oct-24	Daily	76.60	9.04	7.86	4656.80	5.35	149.62	96.53
21-Oct-24	Daily	63.69	7.26	7.94	5139.71	6.86	1172.28	756.31
22-Oct-24	Daily	83.67	9.73	7.95	4786.93	5.76	995.09	642.00
23-Oct-24	Weekly	89.82	9.88	7.92	4350.97	7.52	447.32	288.59
24-Oct-24	Daily	99.39	10.67	7.82	4003.45	8.72	40.17	25.91
25-Oct-24	-	-	-	-	-	-	-	-
26-Oct-24	Daily	89.28	10.02	7.74	3550.15	8.12	4609.53	2973.89
27-Oct-24	Daily	77.31	8.45	7.54	4070.28	8.56	113.82	73.43
28-Oct-24	Weekly	78.68	8.39	7.67	4217.19	8.91	36.32	22.97
29-Oct-24	Daily	86.44	9.47	7.70	3851.77	8.02	28.03	18.08
30-Oct-24	-	-	-	-	-	-	-	-
31-Oct-24	Daily	39.45	4.38	8.19	5815.07	8.04	7.09	4.57

Notes:

- = No data taken during periods of inactive discharge

Table 9. Summary of Laboratory Analytical Results at SNP-08 (October, 2024)

Parameters	Units	2-Oct-24	12-Oct-24	15-Oct-24	23-Oct-24	28-Oct-24
		Monthly	Weekly	Weekly	Weekly	Weekly
Alkalinity, Bicarbonate	mg/L	64.5	88.40	88.60	110	110
Alkalinity, Carbonate	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Hydroxide	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total	mg/L	64.5	88.40	88.60	110	110
Aluminum (Al)-Dissolved	mg/L	0.00				
Aluminum (Al)-Total	mg/L	0.03				
Ammonia, Total (as N)	mg/L	4.79	2.45	2.15	1.38	1.32
Antimony (Sb)-Dissolved	mg/L	0.00				
Antimony (Sb)-Total	mg/L	0.00				
Arsenic (As)-Dissolved	mg/L	0.00				
Arsenic (As)-Total	mg/L	0.00				
Barium (Ba)-Dissolved	mg/L	0.03				
Barium (Ba)-Total	mg/L	0.03				
Benzene	mg/L	0.00				
Beryllium (Be)-Dissolved	mg/L	<0.000040				
Beryllium (Be)-Total	mg/L	<0.000040				
Bismuth (Bi)-Dissolved	mg/L	<0.000100				
Bismuth (Bi)-Total	mg/L	<0.000100				
Boron (B)-Dissolved	mg/L	1.33				
Boron (B)-Total	mg/L	1.20				
Bromide (Br)	mg/L	18	13.40	16.30	13.9	13.1
Cadmium (Cd)-Dissolved	mg/L	<0.0000100				
Cadmium (Cd)-Total	mg/L	<0.0000200				
Calcium (Ca)-Dissolved	mg/L	465	379.00	455.00	373	371
Calcium (Ca)-Total	mg/L	461.00				
Cesium (Cs)-Dissolved	mg/L	0.00				
Cesium (Cs)-Total	mg/L	0.00				
Chloride	mg/L	1410	1040.00	1270.00	1020	986
Chromium (Cr)-Dissolved	mg/L	<0.00020				
Chromium (Cr)-Total	mg/L	<0.00020				
Cobalt (Co)-Dissolved	mg/L	0.00				
Cobalt (Co)-Total	mg/L	0.00				
Conductivity	µS/cm	5040	4190.00	4820.00	4130	3960
Copper (Cu)-Dissolved	mg/L	0.00				
Copper (Cu)-Total	mg/L	0.00				
Ethylbenzene	mg/L	<0.00050				
F1 (C6-C10)	mg/L	<0.10				
F1-BTEX	mg/L	<0.100				
F2 (C10-C16)	mg/L	<0.10				
F3 (C16-C34)	mg/L	<0.25				
F4 (C34-C50)	mg/L	<0.25				
Fluoride	mg/L	0.524	0.64	0.54	0.844	0.886
Hardness (as CaCO3)	mg/L	1580	1290.00	1500.00	1260	1260
Iron (Fe)-Dissolved	mg/L	<0.0100				
Iron (Fe)-Total	mg/L	0.08				
Lead (Pb)-Dissolved	mg/L	<0.000060				
Lead (Pb)-Total	mg/L	<0.000060				
Lithium (Li)-Dissolved	mg/L	0.10				
Lithium (Li)-Total	mg/L	0.10				
Magnesium (Mg)-Dissolved	mg/L	103	82.50	88.30	81.1	79.8
Magnesium (Mg)-Total	mg/L	95.80				
Manganese (Mn)-Total	mg/L	0.05				
Mercury (Hg)-Dissolved	mg/L	<0.0000050				
Mercury (Hg)-Total	mg/L	<0.0000050				
meta + para Xylene	mg/L	<0.00050				
Molybdenum (Mo)-Dissolved	mg/L	0.04				
Molybdenum (Mo)-Total	mg/L	0.04				
Nickel (Ni)-Dissolved	mg/L	0.05				
Nickel (Ni)-Total	mg/L	0.05				
Nitrate and Nitrite	mg/L	7.56	9.21	6.80	9.78	7.94
Nitrate as Nitrogen	mg/L	7.38	9.03	6.48	9.57	7.73
Nitrite as Nitrogen	mg/L	0.177	0.18	0.32	0.205	0.205
Orthophosphate-Dissolved (as P)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
ortho-Xylene	mg/L	<0.00050				
pH		7.99	7.95	7.94	8	7.92
Phosph (P)-Dis Inorg	mg/L	<0.0010	<0.0010	<0.0010	0.0018	0.0011
Phosph (P)-Dis Org	mg/L	<0.0020	0.00	0.00	0.0022	0.0023
Phosph (P)-Tot Dis	mg/L	0.0013	0.0046	0.00	0.004	0.0034
Phosph (P)-Tot Inorg	mg/L	<0.0010	0.153	0.113	0.623	0.0524
Phosphorus - Total	mg/L	0.0039	0.149	0.12	0.604	0.0509
Potassium (K)-Dissolved	mg/L	12.3	11.60	12.2	8.4	7.93
Potassium (K)-Total	mg/L	11.60				
Rubidium (Rb)-Dissolved	mg/L	0.03				
Rubidium (Rb)-Total	mg/L	0.03				
Selenium (Se)-Dissolved	mg/L	<0.000100				
Selenium (Se)-Total	mg/L	<0.000100				
Silicate (as SiO2)	mg/L	9.43	9.93	9.91	11.5	12.4
Silver (Ag)-Dissolved	mg/L	<0.000020				
Silver (Ag)-Total	mg/L	<0.000020				
Sodium (Na)-Dissolved	mg/L	494	357.00	399.00	349	361

Table 9. Summary of Laboratory Analytical Results at SNP-08 (October, 2024)

Parameters	Units	2-Oct-24	12-Oct-24	15-Oct-24	23-Oct-24	28-Oct-24
		Monthly	Weekly	Weekly	Weekly	Weekly
Sodium (Na)-Total	mg/L	416.00				
Strontium (Sr)-Dissolved	mg/L	9.70				
Strontium (Sr)-Total	mg/L	9.71				
Sulfate	mg/L	469	511.00	550.00	516	499
Sulfur (S)-Dissolved	mg/L	176.00				
Sulfur (S)-Total	mg/L	178.00				
TDS	mg/L	3970	3630.00	3310.00	2430	2740
Tellurium (Te)-Dissolved	mg/L	0.00				
Tellurium (Te)-Total	mg/L	0.00				
Th-228	Bq/L	<0.3				
Th-230	Bq/L	<20				
Th-234	Bq/L	0.00				
Thallium (Tl)-Dissolved	mg/L	0.00				
Thallium (Tl)-Total	mg/L	<0.00020				
Thorium (Th)-Dissolved	mg/L	<0.00020				
Thorium (Th)-Total	mg/L	<4				
Tin (Sn)-Dissolved	mg/L	<0.000100				
Tin (Sn)-Total	mg/L	<0.000100				
Titanium (Ti)-Dissolved	mg/L	<0.00060				
Titanium (Ti)-Total	mg/L	0.00				
Toluene	mg/L	<0.00050				
Total Hydrocarbons (C6-C50)	mg/kg	<0.40				
Total Kjeldahl Nitrogen	mg/L	5.4	3.28	2.96	2.78	1.61
Total Organic Carbon	mg/L	1.56	1.94	2.59	2.51	2.63
Total Suspended Solids	mg/L	1.6	109.00	95.00	362	22.1
Tungsten (W)-Dissolved	mg/L	<0.00020				
Tungsten (W)-Total	mg/L	<0.00020				
Turbidity	NTU	0.9	59.80	48.20	186	18.1
U-234	Bq/L	0.09				
U-235	Bq/L	0.00				
U-238	Bq/L	0.09				
Uranium (U)-Dissolved	mg/L	0.01				
Uranium (U)-Total	mg/L	0.01				
Vanadium (V)-Dissolved	mg/L	<0.00100				
Vanadium (V)-Total	mg/L	<0.00100				
Xylenes	mg/L	<0.00075				
Zinc (Zn)-Dissolved	mg/L	<0.0020				
Zinc (Zn)-Total	mg/L	<0.0030				
Zirconium (Zr)-Dissolved	mg/L	<0.00040				
Zirconium (Zr)-Total	mg/L	<0.00040				

Table 10. Summary of Daily Physical Parameters at SNP-09 (October, 2024)

Date	Sample Type	Dissolved Oxygen	Dissolved Oxygen	pH	Specific Conductivity	Temperature	Total Suspended Solids	Turbidity
		%	mg/L		µS/cm	°C	mg/L	NTU
1-Oct-24	Daily	100.06	11.42	8.60	3268.75	6.49	172.18	111.09
2-Oct-24	Daily	100.23	11.59	8.97	3276.80	6.17	235.84	152.15
3-Oct-24	Daily	99.88	11.46	8.66	3054.77	6.55	149.30	96.32
4-Oct-24	Daily	103.20	11.45	8.52	3048.55	7.86	92.55	59.71
5-Oct-24	Monthly	105.92	11.93	8.46	3107.19	7.28	49.60	32.00
6-Oct-24	-	-	-	-	-	-	-	-
7-Oct-24	-	-	-	-	-	-	-	-
8-Oct-24	-	-	-	-	-	-	-	-
9-Oct-24	-	-	-	-	-	-	-	-
10-Oct-24	-	-	-	-	-	-	-	-
11-Oct-24	-	-	-	-	-	-	-	-
12-Oct-24	-	-	-	-	-	-	-	-
13-Oct-24	-	-	-	-	-	-	-	-
14-Oct-24	-	-	-	-	-	-	-	-
15-Oct-24	-	-	-	-	-	-	-	-
16-Oct-24	-	-	-	-	-	-	-	-
17-Oct-24	-	-	-	-	-	-	-	-
18-Oct-24	-	-	-	-	-	-	-	-
19-Oct-24	-	-	-	-	-	-	-	-
20-Oct-24	-	-	-	-	-	-	-	-
21-Oct-24	-	-	-	-	-	-	-	-
22-Oct-24	-	-	-	-	-	-	-	-
23-Oct-24	-	-	-	-	-	-	-	-
24-Oct-24	-	-	-	-	-	-	-	-
25-Oct-24	-	-	-	-	-	-	-	-
26-Oct-24	-	-	-	-	-	-	-	-
27-Oct-24	-	-	-	-	-	-	-	-
28-Oct-24	-	-	-	-	-	-	-	-
29-Oct-24	-	-	-	-	-	-	-	-
30-Oct-24	-	-	-	-	-	-	-	-
31-Oct-24	-	-	-	-	-	-	-	-

Notes:

- = No data taken during periods of inactive discharge

Table 11. Summary of Laboratory Analytical Results at SNP-09 (C

Parameters	Units	5-Oct-24
		Monthly
Alkalinity, Bicarbonate	mg/L	44
Alkalinity, Carbonate	mg/L	<1.0
Alkalinity, Hydroxide	mg/L	<1.0
Alkalinity, Total	mg/L	44
Aluminum (Al)-Dissolved	mg/L	0.0032
Aluminum (Al)-Total	mg/L	1.29
Ammonia, Total (as N)	mg/L	3.1
Antimony (Sb)-Dissolved	mg/L	0.00044
Antimony (Sb)-Total	mg/L	0.00044
Arsenic (As)-Dissolved	mg/L	0.000869
Arsenic (As)-Total	mg/L	0.0011
Barium (Ba)-Dissolved	mg/L	0.0497
Barium (Ba)-Total	mg/L	0.0796
Benzene	mg/L	<0.00050
Beryllium (Be)-Dissolved	mg/L	<0.000040
Beryllium (Be)-Total	mg/L	0.000055
Bismuth (Bi)-Dissolved	mg/L	<0.000100
Bismuth (Bi)-Total	mg/L	<0.000100
Boron (B)-Dissolved	mg/L	1.1
Boron (B)-Total	mg/L	1.24
Bromide (Br)	mg/L	8.5
Cadmium (Cd)-Dissolved	mg/L	<0.0000100
Cadmium (Cd)-Total	mg/L	<0.0000100
Calcium (Ca)-Dissolved	mg/L	268
Calcium (Ca)-Total	mg/L	276
Cesium (Cs)-Dissolved	mg/L	0.000134
Cesium (Cs)-Total	mg/L	0.000166
Chloride	mg/L	712
Chromium (Cr)-Dissolved	mg/L	<0.00020
Chromium (Cr)-Total	mg/L	0.00632
Cobalt (Co)-Dissolved	mg/L	0.000321
Cobalt (Co)-Total	mg/L	0.00226
Conductivity	µS/cm	3090
Copper (Cu)-Dissolved	mg/L	0.0011
Copper (Cu)-Total	mg/L	0.00237
Ethylbenzene	mg/L	<0.00050
F1 (C6-C10)	µg/L	<0.10
F1-BTEX	µg/L	<0.100
F2 (C10-C16)	mg/L	<0.10
F3 (C16-C34)	mg/L	<0.25
F4 (C34-C50)	mg/L	<0.25
Fluoride	mg/L	0.544
Hardness (as CaCO3)	mg/L	926
Iron (Fe)-Dissolved	mg/L	<0.0100
Iron (Fe)-Total	mg/L	1.92
Lead (Pb)-Dissolved	mg/L	<0.000060
Lead (Pb)-Total	mg/L	0.000847
Lithium (Li)-Dissolved	mg/L	0.0609
Lithium (Li)-Total	mg/L	0.0676
Magnesium (Mg)-Dissolved	mg/L	62.3
Magnesium (Mg)-Total	mg/L	62.8
Manganese (Mn)-Dissolved	mg/L	0.0823
Manganese (Mn)-Total	mg/L	<0.0000050
Mercury (Hg)-Dissolved	mg/L	<0.0000050
Mercury (Hg)-Total	mg/L	<0.00050
meta + para Xylene	mg/L	0.0183
Molybdenum (Mo)-Dissolved	mg/L	0.0182
Molybdenum (Mo)-Total	mg/L	0.0245
Nickel (Ni)-Dissolved	mg/L	0.0515
Nickel (Ni)-Total	mg/L	3.59
Nitrate and Nitrite	mg/L	3.53
Nitrate as Nitrogen	mg/L	0.0584

Table 11. Summary of Laboratory Analytical Results at SNP-09 (C

Parameters	Units	5-Oct-24
		Monthly
Nitrite as Nitrogen	mg/L	<0.0010
Orthophosphate-Dissolved (as P)	mg/L	<0.00050
ortho-Xylene	mg/L	7.51
pH		0.002
Phosph (P)-Dis Inorg	mg/L	<0.0020
Phosph (P)-Dis Org	mg/L	0.002
Phosph (P)-Tot Dis	mg/L	0.0633
Phosph (P)-Tot Inorg	mg/L	0.054
Phosphorus - Total	mg/L	15.2
Potassium (K)-Dissolved	mg/L	14.5
Potassium (K)-Total	mg/L	0.0254
Rubidium (Rb)-Dissolved	mg/L	0.027
Rubidium (Rb)-Total	mg/L	<0.000100
Selenium (Se)-Dissolved	mg/L	<0.000100
Selenium (Se)-Total	mg/L	8.18
Silicate (as SiO2)	mg/L	<0.000020
Silver (Ag)-Dissolved	mg/L	<0.000020
Silver (Ag)-Total	mg/L	214
Sodium (Na)-Dissolved	mg/L	226
Sodium (Na)-Total	mg/L	6.8
Strontium (Sr)-Dissolved	mg/L	6.63
Strontium (Sr)-Total	mg/L	408
Sulfate	mg/L	157
Sulfur (S)-Dissolved	mg/L	144
Sulfur (S)-Total	mg/L	2310
TDS	mg/L	0.00048
Tellurium (Te)-Dissolved	mg/L	0.00094
Tellurium (Te)-Total	mg/L	<0.4
Th-228	Bq/L	<20
Th-230	Bq/L	0.00
Thallium (Tl)-Dissolved	mg/L	0.000069
Thallium (Tl)-Total	mg/L	<0.00020
Thorium (Th)-Dissolved	mg/L	0.00079
Thorium (Th)-Total	mg/L	<4
Tin (Sn)-Dissolved	mg/L	<0.000100
Tin (Sn)-Total	mg/L	<0.000100
Titanium (Ti)-Dissolved	mg/L	<0.00060
Titanium (Ti)-Total	mg/L	0.0494
Toluene	mg/L	<0.00050
Total Hydrocarbons (C6-C50)	mg/kg	<0.40
Total Kjeldahl Nitrogen	mg/L	3.69
Total Organic Carbon	mg/L	2.5
Total Suspended Solids	mg/L	74.7
Tungsten (W)-Dissolved	mg/L	0.00027
Tungsten (W)-Total	mg/L	0.00028
Turbidity	NTU	51.2
U-234	Bq/L	0.055
U-235	Bq/L	0.0028
U-238	Bq/L	0.055
Uranium (U)-Dissolved	Bq/L	0.00393
Uranium (U)-Total	Bq/L	0.00405
Vanadium (V)-Dissolved	Bq/L	<0.00100
Vanadium (V)-Total	mg/L	0.00414
Xylenes	mg/L	<0.00075
Zinc (Zn)-Dissolved	mg/L	<0.0020
Zinc (Zn)-Total	mg/L	0.005
Zirconium (Zr)-Dissolved	mg/L	<0.00040
Zirconium (Zr)-Total	mg/L	0.00125

Table 12. Summary of Daily Physical Parameters at SNP-10 (October 2024)

Date	Sample Type	Dissolved Oxygen	Dissolved Oxygen	pH	Specific Conductivity	Temperature	Total Suspended Solids	Turbidity
		%	mg/L		µS/cm	°C	mg/L	NTU
1-Oct-24	Daily	45.05	5.20	7.47	2437.77	6.21	338.16	218.17
2-Oct-24	Monthly	51.42	5.91	7.57	2386.05	6.54	11.27	7.27
3-Oct-24	Daily	46.48	5.44	7.68	2375.63	5.90	66.05	42.79
4-Oct-24	-	-	-	-	-	-	-	-
5-Oct-24	-	-	-	-	-	-	-	-
6-Oct-24	-	-	-	-	-	-	-	-
7-Oct-24	Weekly	46.49	5.27	7.63	2543.21	7.08	0.00	0.00
8-Oct-24	Daily	46.08	5.11	7.60	2501.60	7.87	0.00	0.00
9-Oct-24	Daily	45.49	5.03	7.44	2445.83	7.60	0.17	0.11
10-Oct-24	Daily	61.07	7.36	7.45	1976.12	5.11	2846.17	1836.24
11-Oct-24	Daily	62.58	7.33	7.24	1867.22	6.21	304.10	196.19
12-Oct-24	Daily	59.81	7.21	7.60	1995.86	5.40	221.63	142.98
13-Oct-24	-	-	-	-	-	-	-	-
14-Oct-24	Daily	51.35	5.94	7.55	1514.02	6.52	70.09	45.22
15-Oct-24	Daily	42.56	5.11	7.62	2241.22	4.73	464.94	299.96
16-Oct-24	Weekly	48.49	5.56	7.24	2223.75	6.61	6.13	3.96
17-Oct-24	Daily	70.55	8.45	7.70	2820.65	4.29	4999.84	3225.70
18-Oct-24	Daily	77.96	9.44	7.92	2564.35	4.22	431.77	278.56
19-Oct-24	Daily	84.46	10.35	7.86	2332.45	4.11	381.21	245.94
20-Oct-24	Daily	70.89	8.64	7.62	2348.67	4.47	1353.34	873.12
21-Oct-24	Daily	74.69	9.12	8.01	2477.86	4.54	54.98	35.47
22-Oct-24	Weekly	76.50	9.38	7.98	2694.00	4.00	50.45	32.55
23-Oct-24	Daily	76.14	8.73	7.76	2479.19	6.09	13.53	8.73
24-Oct-24	-	-	-	-	-	-	-	-
25-Oct-24	Daily	74.78	8.37	7.79	3217.35	7.54	4818.50	3108.71
26-Oct-24	Daily	69.60	8.30	8.04	2446.26	5.70	9983.14	6440.73
27-Oct-24	-	-	-	-	-	-	-	-
28-Oct-24	-	-	-	-	-	-	-	-
29-Oct-24	-	-	-	-	-	-	-	-
30-Oct-24	-	-	-	-	-	-	-	-
31-Oct-24	-	-	-	-	-	-	-	-

Notes:

= No data taken during periods of inactive discharge

Table 13. Summary of Laboratory Analytical Results at SNP-10 (October, 2024)

Parameters	Units	2-Oct-24	7-Oct-24	16-Oct-24	16-Oct-24	22-Oct-24
		Monthly	Weekly	Travel Blank	Weekly	Weekly
Alkalinity, Bicarbonate	mg/L	151	154	<1.0	132	122
Alkalinity, Carbonate	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Hydroxide	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total	mg/L	151	154	<1.0	132	122
Aluminum (Al)-Dissolved	mg/L	0.0048				
Aluminum (Al)-Total	mg/L	0.169				
Ammonia, Total (as N)	mg/L	8.96	8.08	0.0052	4.45	3.07
Antimony (Sb)-Dissolved	mg/L	0.00019				
Antimony (Sb)-Total	mg/L	0.0002				
Arsenic (As)-Dissolved	mg/L	0.000455				
Arsenic (As)-Total	mg/L	0.000466				
Barium (Ba)-Dissolved	mg/L	0.0579				
Barium (Ba)-Total	mg/L	0.056				
Benzene	mg/L	0.0198				
Beryllium (Be)-Dissolved	mg/L	<0.000020				
Beryllium (Be)-Total	mg/L	<0.000020				
Bismuth (Bi)-Dissolved	mg/L	<0.000050				
Bismuth (Bi)-Total	mg/L	<0.000050				
Boron (B)-Dissolved	mg/L	0.594				
Boron (B)-Total	mg/L	0.58				
Bromide (Br)	mg/L	5.05	5.3	<0.0500	5.56	7.18
Cadmium (Cd)-Dissolved	mg/L	<0.0000100				
Cadmium (Cd)-Total	mg/L	<0.0000150				
Calcium (Ca)-Dissolved	mg/L	207	216	<0.050	191	259
Calcium (Ca)-Total	mg/L	208				
Cesium (Cs)-Dissolved	mg/L	0.000193				
Cesium (Cs)-Total	mg/L	0.000211				
Chloride	mg/L	416	482	<0.50	441	609
Chromium (Cr)-Dissolved	mg/L	<0.00010				
Chromium (Cr)-Total	mg/L	0.00033				
Cobalt (Co)-Dissolved	mg/L	0.000633				
Cobalt (Co)-Total	mg/L	0.00071				
Conductivity	µS/cm	2260	2510	<2.0	2190	2540
Copper (Cu)-Dissolved	mg/L	0.0048				
Copper (Cu)-Total	mg/L	0.00452				
Ethylbenzene	mg/L	0.00091				
F1 (C6-C10)	µg/L	<0.10				
F1-BTEX	µg/L	<0.100				
F2 (C10-C16)	mg/L	<0.10				
F3 (C16-C34)	mg/L	<0.25				
F4 (C34-C50)	mg/L	<0.25				
Fluoride	mg/L	0.783	0.686	<0.020	1.04	0.522
Hardness (as CaCO3)	mg/L	888	922	<0.50	848	1050
Iron (Fe)-Dissolved	mg/L	0.0581				
Iron (Fe)-Total	mg/L	0.289				
Lead (Pb)-Dissolved	mg/L	<0.000030				
Lead (Pb)-Total	mg/L	0.000066				
Lithium (Li)-Dissolved	mg/L	0.075				
Lithium (Li)-Total	mg/L	0.0738				
Magnesium (Mg)-Dissolved	mg/L	90.1	93	<0.0050	90	98.7
Magnesium (Mg)-Total	mg/L	77.9				
Manganese (Mn)-Dissolved	mg/L	0.133				
Manganese (Mn)-Total	mg/L	<0.0000050				
Mercury (Hg)-Dissolved	mg/L	<0.0000050				
Mercury (Hg)-Total	mg/L	0.00138				
meta + para Xylene	mg/L	0.0495				
Molybdenum (Mo)-Dissolved	mg/L	0.0512				
Molybdenum (Mo)-Total	mg/L	0.00995				
Nickel (Ni)-Dissolved	mg/L	0.0105				
Nickel (Ni)-Total	mg/L	22.6	26.4	<0.0058	19.6	13.2
Nitrate and Nitrite	mg/L	21.6	25.3	<0.0030	18.8	12.6
Nitrate as Nitrogen	mg/L	1.02	1.06	<0.0050	0.789	0.567
Nitrite as Nitrogen	mg/L	<0.0010	<0.0010	<0.0010	0.0378	0.0057
Orthophosphate-Dissolved (as P)	mg/L	0.00114				
ortho-Xylene	mg/L	7.72	8.02	5.38	8.04	8
pH		<0.0010	0.0022	<0.0010	0.0514	0.0093
Phosph (P)-Dis Inorg	mg/L	<0.0020	0.0039	<0.0020	<0.0056	0.0021
Phosph (P)-Dis Org	mg/L	<0.0010	0.0061	0.0013	0.0562	0.0114
Phosph (P)-Tot Dis	mg/L	0.0158	0.0059	<0.0010	0.0748	0.0805
Phosph (P)-Tot Inorg	mg/L	0.0182	0.0098	<0.0010	0.078	0.0848
Phosphorus - Total	mg/L	23.4	22.3	<0.050	19.8	19.9
Potassium (K)-Dissolved	mg/L	20.8				
Potassium (K)-Total	mg/L	0.024				
Rubidium (Rb)-Dissolved	mg/L	0.0224				
Rubidium (Rb)-Total	mg/L	0.00016				
Selenium (Se)-Dissolved	mg/L	0.000149				
Selenium (Se)-Total	mg/L	10.7	11.2	<0.50	10.7	10.2
Silicate (as SiO2)	mg/L	<0.000010				
Silver (Ag)-Dissolved	mg/L	<0.000010				
Silver (Ag)-Total	mg/L	118	117	<0.050	107	133
Sodium (Na)-Dissolved	mg/L	93.2				
Sodium (Na)-Total	mg/L	2.7				

Table 13. Summary of Laboratory Analytical Results at SNP-10 (October, 2024)

Parameters	Units	2-Oct-24	7-Oct-24	16-Oct-24	16-Oct-24	22-Oct-24
		Monthly	Weekly	Travel Blank	Weekly	Weekly
Strontium (Sr)-Dissolved	mg/L	2.66				
Strontium (Sr)-Total	mg/L	327	341	<0.300	301	310
Sulfate	mg/L	117				
Sulfur (S)-Dissolved	mg/L	120				
Sulfur (S)-Total	mg/L	2000	1770	<10	1560	1740
TDS	mg/L	0.00027				
Tellurium (Te)-Dissolved	mg/L	0.00057				
Tellurium (Te)-Total	mg/L	<0.4				
Th-228	Bq/L	<30				
Th-230	Bq/L	<0.000010				
Thallium (Tl)-Dissolved	mg/L	<0.000010				
Thallium (Tl)-Total	mg/L	<0.00010				
Thorium (Th)-Dissolved	mg/L	<0.00030				
Thorium (Th)-Total	mg/L	<4				
Tin (Sn)-Dissolved	mg/L	<0.000050				
Tin (Sn)-Total	mg/L	<0.000050				
Titanium (Ti)-Dissolved	mg/L	<0.00030				
Titanium (Ti)-Total	mg/L	0.00195				
Toluene	mg/L	0.00609				
Total Hydrocarbons (C6-C50)	mg/kg	<0.40				
Total Kjeldahl Nitrogen	mg/L	10.1	9.46	<0.050	6.03	3.93
Total Organic Carbon	mg/L	2.86	2.04	<0.50	2.28	2.28
Total Suspended Solids	mg/L	9.9	1	<1.0	4.4	53.8
Tungsten (W)-Dissolved	mg/L	0.00133				
Tungsten (W)-Total	mg/L	0.00133				
Turbidity	NTU	6.76	1.06	<0.10	4.73	31
U-234	Bq/L	0.3				
U-235	Bq/L	0.015				
U-238	Bq/L	0.3				
Uranium (U)-Dissolved	Bq/L	0.0294				
Uranium (U)-Total	Bq/L	0.0298				
Vanadium (V)-Dissolved	Bq/L	0.00076				
Vanadium (V)-Total	mg/L	0.00135				
Xylenes	mg/L	0.00252				
Zinc (Zn)-Dissolved	mg/L	<0.0010				
Zinc (Zn)-Total	mg/L	<0.0015				
Zirconium (Zr)-Dissolved	mg/L	<0.00030				
Zirconium (Zr)-Total	mg/L	0.00081				

Table 14. Summary of Monthly Physical Parameters at SNP-21 (October 08, 2024)

Station (Effective Depth)	SNP-21-0.3m	SNP-21-1m	SNP-21-2m	SNP-21-3m	SNP-21-4m	SNP-21-5m	SNP-21-6m
Dissolved Oxygen (mg/L)	12.82	12.82	12.81	**12.78**	12.62	12.59	12.57
Dissolved Oxygen (%)	99.94	99.93	99.66	**99.36**	98.18	97.97	97.84
Temperature (°C)	2.22	2.22	2.21	**2.15**	2.18	2.22	2.22
pH	7.65	7.64	7.63	**7.62**	7.59	7.57	7.57
Specific Conductivity (µS/cm)	2339.50	2339.42	2339.76	**2342.77**	2348.20	2348.82	2349.67
Turbidity (NTU)	0.06	0.41	0.08	**0.00**	0.08	0.14	0.45
Total Suspended Solids (mg/L)	0.10	0.54	0.12	**0.00**	0.12	0.22	0.70

Notes:

Lab Sample taken at 3.0 m, highlighted in bold. Total depth 6.6 m

Table 15. Summary of Laboratory Analytical Results at SNP-21 (October, 2024)

Parameters	Units	SNP-21-3m
		8-Oct-24
		Monthly
Alkalinity, Bicarbonate	mg/L	19.5
Alkalinity, Carbonate	mg/L	<1.0
Alkalinity, Hydroxide	mg/L	<1.0
Alkalinity, Total	mg/L	19.5
Aluminum (Al)-Total	mg/L	0.0425
Ammonia, Total (as N)	mg/L	0.496
Antimony (Sb)-Total	mg/L	<0.00010
Arsenic (As)-Total	mg/L	0.000242
Barium (Ba)-Total	mg/L	0.0627
Beryllium (Be)-Total	mg/L	<0.000020
Bismuth (Bi)-Total	mg/L	<0.000050
Boron (B)-Total	mg/L	0.435
Bromide (Br)	mg/L	7.31
Cadmium (Cd)-Total	mg/L	0.000132
Calcium (Ca)-Dissolved	mg/L	191
Calcium (Ca)-Total	mg/L	193
Cesium (Cs)-Total	mg/L	0.000055
Chloride	mg/L	590
Chromium (Cr)-Total	mg/L	0.00012
Cobalt (Co)-Total	mg/L	0.0014
Conductivity	µS/cm	2280
Copper (Cu)-Total	mg/L	0.0015
Fluoride	mg/L	<0.200
Hardness (as CaCO3)	mg/L	651
Iron (Fe)-Total	mg/L	0.112
Lead (Pb)-Total	mg/L	0.000047
Lithium (Li)-Total	mg/L	0.0335
Magnesium (Mg)-Dissolved	mg/L	42.3
Magnesium (Mg)-Total	mg/L	39.2
Manganese (Mn)-Total	mg/L	0.109
Mercury (Hg)-Total	mg/L	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.00606
Nickel (Ni)-Total	mg/L	0.0163
nitrate + nitrite (as N)	mg/L	6.06
nitrate (as N)	mg/L	6.01
nitrite (as N)	mg/L	0.0493
phosphate, ortho-, dissolved (as P)	mg/L	<0.0010
pH		7.43
phosphorus, dissolved inorganic	mg/L	0.0025
phosphorus, dissolved organic	mg/L	0.003
phosphorus, total dissolved	mg/L	0.0055
phosphorus, total inorganic	mg/L	0.005
phosphorus, total	mg/L	0.0136
Potassium (K)-Dissolved	mg/L	12
Potassium (K)-Total	mg/L	11.1
Rubidium (Rb)-Total	mg/L	0.0156
Selenium (Se)-Total	mg/L	0.000092
Silicate (as SiO2)	mg/L	1.26
Silicon (Si)-Total	mg/L	0.69
Silver (Ag)-Total	mg/L	<0.000010
Sodium (Na)-Dissolved	mg/L	190
Sodium (Na)-Total	mg/L	176
Strontium (Sr)-Total	mg/L	3.59
Sulfate	mg/L	177
Sulfur (S)-Total	mg/L	66.5
solids, total dissolved [TDS]	mg/L	1570
Tellurium (Te)-Total	mg/L	0.00071
Thallium (Tl)-Total	mg/L	0.00006
Thorium (Th)-Total	mg/L	<0.00010

Table 15. Summary of Laboratory Analytical Results at SNP-21 (October, 2024)

Parameters	Units	SNP-21-3m
		8-Oct-24
		Monthly
Tin (Sn)-Total	mg/L	<0.000050
Titanium (Ti)-Total	mg/L	<0.00060
Kjeldahl nitrogen, total [TKN]	mg/L	0.881
carbon, total organic [TOC]	mg/L	5.45
solids, total suspended [TSS]	mg/L	3.8
Tungsten (W)-Total	mg/L	<0.00010
Turbidity	NTU	2.72
Uranium (U)-Total	mg/L	0.0017
Vanadium (V)-Total	mg/L	<0.00050
Zinc (Zn)-Total	mg/L	0.0098
Zirconium (Zr)-Total	mg/L	0.00036

Table 16. Water Surface Elevations at SNP 05 & 06 in the WMP (2024)

Date	Water Surface Elevation (masl)[1.]
7-Jan	417.987
14-Jan	417.936
21-Jan	417.910
28-Jan	417.871
4-Feb	417.831
11-Feb	417.794
18-Feb	417.738
25-Feb	417.718
3-Mar	417.657
10-Mar	417.637
17-Mar	417.584
24-Mar	417.544
31-Mar	417.500
7-Apr	417.540
14-Apr	417.407
21-Apr	417.369
28-Apr	417.391
5-May	417.382
12-May	417.600
19-May	417.776
26-May	417.872
2-Jun	417.932
9-Jun	417.956
16-Jun	417.978
23-Jun	418.004
30-Jun	417.975
7-Jul	417.972
14-Jul	417.958
21-Jul	417.904
28-Jul	417.911
4-Aug	417.969
11-Aug	417.953
18-Aug	418.074
25-Aug	418.153
1-Sep	418.187
8-Sep	418.217
15-Sep	418.375
22-Sep	418.435
29-Sep	418.549
6-Oct	418.645
13-Oct	418.808
20-Oct	418.953
27-Oct	419.035

Notes:

1. masl = metres above sea level

Table 17. Water Surface Elevations at SNP-21 in CP-1 (2024)

Date	Water Surface Elevation (masl)[1.]
7-Jan	416.902
14-Jan	416.898
21-Jan	416.910
28-Jan	416.914
4-Feb	416.948
11-Feb	416.977
18-Feb	416.978
25-Feb	416.992
3-Mar	416.977
10-Mar	417.003
17-Mar	416.996
24-Mar	416.996
31-Mar	417.000
7-Apr	416.996
14-Apr	416.967
21-Apr	416.970
28-Apr	416.972
5-May	417.021
12-May	417.350
19-May	417.517
26-May	417.539
2-Jun	417.632
9-Jun	417.653
16-Jun	417.598
23-Jun	417.626
30-Jun	417.596
7-Jul	417.587
14-Jul	417.590
21-Jul	417.484
28-Jul	417.538
4-Aug	417.606
11-Aug	417.611
18-Aug	417.955
25-Aug	418.044
1-Sep	418.093
8-Sep	418.155
15-Sep	418.396
22-Sep	418.541
29-Sep	418.601
6-Oct	418.496
13-Oct	418.455
20-Oct	418.357
27-Oct	418.196

Notes:

1. masl = metres above sea level

Table 18. Daily Waste Water Treatment Plant Discharge Volume at SNP-07 (October, 2024)

Date	Daily Effluent Volume (m^3)
1-Oct	97
2-Oct	93
3-Oct	104
4-Oct	81
5-Oct	79
6-Oct	80
7-Oct	88
8-Oct	74
9-Oct	92
10-Oct	111
11-Oct	89
12-Oct	94
13-Oct	75
14-Oct	97
15-Oct	101
16-Oct	106
17-Oct	100
18-Oct	85
19-Oct	97
20-Oct	87
21-Oct	85
22-Oct	96
23-Oct	90
24-Oct	95
25-Oct	97
26-Oct	99
27-Oct	88
28-Oct	106
29-Oct	83
30-Oct	103
31-Oct	82
Minimum	74
Maximum	111
Mean	92
Monthly Total	**2,854**

Table 19. 5034 Pit Dewatering Flow and Volume at SNP-08 (October, 2024)

Date	Mean Daily Flow Rate (m^3/s)	Daily Volume (m^3)[1]
1-Oct	0.021	1,811
2-Oct	0.023	1,969
3-Oct	0.019	1,653
4-Oct	0.022	1,909
5-Oct	0.015	1,317
6-Oct	0.021	1,810
7-Oct	0.013	1,149
8-Oct	0.018	1,575
9-Oct	0.035	3,023
10-Oct	0.012	1,005
11-Oct	0.030	2,602
12-Oct	0.036	3,116
13-Oct	0.022	1,938
14-Oct	0.022	1,860
15-Oct	0.011	953
16-Oct	0.039	3,341
17-Oct	0.019	1,668
18-Oct	0.024	2,062
19-Oct	0.019	1,601
20-Oct	0.024	2,113
21-Oct	0.032	2,761
22-Oct	0.016	1,358
23-Oct	0.018	1,550
24-Oct	0.008	707
25-Oct	0.011	911
26-Oct	0.017	1,426
27-Oct	0.012	1,052
28-Oct	0.005	419
29-Oct	0.013	1,109
30-Oct	0.024	2,045
31-Oct	0.024	2,087
Mean Daily	**0.020**	-
Monthly Total	**-**	**53,900**

Notes:

1. Pumping is suspended during pit blasts and during relocation of pit sump. This results in the wide range of values observed for daily (24hr) flow rate and volume.

Table 20. Hearne Pit Dewatering Flow and Volume at SNP-09 (October, 2024)

Date	Mean Daily Flow Rate (m^3/s)	Daily Volume (m^3)[1]
1-Oct	0.021	1849
2-Oct	0.027	2368
3-Oct	0.014	1202
4-Oct	0.015	1302
5-Oct	0.014	1217
6-Oct	-	-
7-Oct	-	-
8-Oct	-	-
9-Oct	-	-
10-Oct	-	-
11-Oct	-	-
12-Oct	-	-
13-Oct	-	-
14-Oct	-	-
15-Oct	-	-
16-Oct	-	-
17-Oct	-	-
18-Oct	-	-
19-Oct	-	-
20-Oct	-	-
21-Oct	-	-
22-Oct	-	-
23-Oct	-	-
24-Oct	-	-
25-Oct	-	-
26-Oct	-	-
27-Oct	-	-
28-Oct	-	-
29-Oct	-	-
30-Oct	-	-
31-Oct	-	-
Mean Daily	**0.018**	**-**
Monthly Total	**-**	**7,938**

Notes:

1. Pumping is suspended during pit blasts and during relocation of pit sump. This results in the wide range of values observed for daily (24hr) flow rate and volume.

2. Volumes in bold face are averages of the month as no data was available for these dates.

Table 21. Tuzo Pit Dewatering Flow and Volume at SNP-10 (October 2024)

Date	Mean Daily Flow Rate (m^3/s)	Daily Volume (m^3)[1]
1-Oct	0.013	1116
2-Oct	0.014	1212
3-Oct	0.012	1079
4-Oct	0.006	548
5-Oct	-	-
6-Oct	0.002	134
7-Oct	0.016	1347
8-Oct	0.013	1141
9-Oct	0.021	1789
10-Oct	0.035	3059
11-Oct	0.045	3919
12-Oct	0.035	3023
13-Oct	0.020	1731
14-Oct	0.021	1790
15-Oct	0.021	1790
16-Oct	0.016	1371
17-Oct	0.021	1792
18-Oct	0.006	476
19-Oct	0.020	1704
20-Oct	0.014	1233
21-Oct	0.013	1106
22-Oct	0.013	1121
23-Oct	0.009	772
24-Oct	0.009	818
25-Oct	0.008	709
26-Oct	0.003	247
27-Oct	-	-
28-Oct	-	-
29-Oct	-	-
30-Oct	-	-
31-Oct	-	-
Mean Daily	**0.016**	-
Monthly Total	**-**	**35,027**

Notes:

1. Pumping is suspended during pit blasts and during relocation of pit sump. This results in the wide range of values observed for daily (24hr) flow rate and volume.

Table 22. Daily Temperature Data (October, 2024)

Date	Temperature (°C)		
	Mean	Minimum	Maximum
1-Oct	-0.4	-2.8	1.9
2-Oct	-1.6	-3.3	0.5
3-Oct	-0.9	-1.7	0.0
4-Oct	-2.1	-4.9	-0.9
5-Oct	-2.0	-6.2	2.9
6-Oct	0.5	-4.0	4.2
7-Oct	2.7	-0.7	6.4
8-Oct	4.0	0.4	8.2
9-Oct	1.8	0.2	4.5
10-Oct	-0.5	-1.6	0.5
11-Oct	1.6	-1.0	3.9
12-Oct	-2.0	-5.3	0.5
13-Oct	-0.1	-5.5	3.6
14-Oct	3.9	1.3	6.4
15-Oct	2.9	0.1	8.2
16-Oct	2.1	-0.6	6.1
17-Oct	1.3	0.5	2.8
18-Oct	-3.1	-5.0	1.0
19-Oct	-4.6	-5.3	-3.4
20-Oct	-5.1	-6.6	-3.9
21-Oct	-6.0	-10.2	-4.8
22-Oct	-6.5	-10.3	-4.3
23-Oct	-3.6	-5.9	-1.1
24-Oct	-5.1	-8.7	-2.7
25-Oct	-6.8	-10.1	-5.8
26-Oct	-9.5	-14.0	-4.8
27-Oct	-7.1	-14.3	-3.8
28-Oct	-4.8	-8.4	-3.0
29-Oct	-9.3	-12.1	-7.7
30-Oct	-11.5	-13.6	-9.8
31-Oct	-10.0	-10.7	-9.2
Monthly Values	**-2.4**	**-14.3**	**8.2**

°C = degrees Celsius; — = no data or invalid data

Table 23. Daily Precipitation Data (October, 2024)

Date	Precipitation (mm)	Adjusted Precipitation (mm)
1-Oct	0.19	0.29
2-Oct	0.00	0.00
3-Oct	0.00	0.00
4-Oct	0.00	0.00
5-Oct	0.00	0.00
6-Oct	0.00	0.00
7-Oct	3.41	5.42
8-Oct	0.19	6.72
9-Oct	23.61	29.42
10-Oct	0.00	0.00
11-Oct	2.56	2.95
12-Oct	0.08	0.10
13-Oct	0.00	0.00
14-Oct	2.93	3.89
15-Oct	0.00	0.00
16-Oct	0.00	0.00
17-Oct	0.54	0.73
18-Oct	0.00	0.00
19-Oct	0.00	0.00
20-Oct	0.00	0.14
21-Oct	0.68	0.68
22-Oct	0.11	0.48
23-Oct	3.10	3.40
24-Oct	1.55	2.03
25-Oct	0.60	0.77
26-Oct	0.00	0.00
27-Oct	0.00	0.00
28-Oct	3.63	4.16
29-Oct	0.00	0.00
30-Oct	0.00	0.00
31-Oct	0.10	0.75
Daily Max	**23.61**	**29.42**
Monthly Total	**43.18**	**61.18**

mm = millimetre; — = no data or invalid data.

Table 24. Hourly Wind Speed and Direction (October, 2024)

Date	Time	Speed (km/hr)	Direction (°)
1-Oct	0:00	13.3884	338.3
1-Oct	1:00	13.9068	338
1-Oct	2:00	14.31	343
1-Oct	3:00	14.6556	356.8
1-Oct	4:00	14.094	10.57
1-Oct	5:00	15.6096	14.09
1-Oct	6:00	17.1252	13.03
1-Oct	7:00	16.9812	19.16
1-Oct	8:00	20.0988	35.73
1-Oct	9:00	18.8388	32.18
1-Oct	10:00	22.0932	32.02
1-Oct	11:00	26.0568	28.19
1-Oct	12:00	27.2376	25.05
1-Oct	13:00	26.784	26.26
1-Oct	14:00	25.9524	26.52
1-Oct	15:00	28.6308	18.27
1-Oct	16:00	32.508	16.38
1-Oct	17:00	33.372	15.34
1-Oct	18:00	31.428	10.19
1-Oct	19:00	30.816	7.134
1-Oct	20:00	30.672	5.955
1-Oct	21:00	31.68	357.9
1-Oct	22:00	35.208	0.12
1-Oct	23:00	36.072	5.436
2-Oct	0:00	37.332	3.273
2-Oct	1:00	41.328	3.529
2-Oct	2:00	40.5	1.029
2-Oct	3:00	37.224	3.842
2-Oct	4:00	38.664	7.699
2-Oct	5:00	39.42	8.23
2-Oct	6:00	39.384	2.556
2-Oct	7:00	38.34	5.841
2-Oct	8:00	33.696	2.916
2-Oct	9:00	37.98	359.9
2-Oct	10:00	40.068	353.8
2-Oct	11:00	38.808	356.3
2-Oct	12:00	40.464	351.5
2-Oct	13:00	43.344	354.5
2-Oct	14:00	40.608	354.3
2-Oct	15:00	38.916	352.9
2-Oct	16:00	36.936	353.9
2-Oct	17:00	35.712	346.9
2-Oct	18:00	32.184	342.7
2-Oct	19:00	27.5688	335.6
2-Oct	20:00	36.144	337.5
2-Oct	21:00	37.332	338.6
2-Oct	22:00	33.84	340.1
2-Oct	23:00	31.572	346
3-Oct	0:00	32.58	336.5
3-Oct	1:00	31.752	337.7
3-Oct	2:00	30.096	342.2
3-Oct	3:00	36.756	336.2
3-Oct	4:00	35.496	339.1
3-Oct	5:00	32.472	335.6
3-Oct	6:00	34.668	336.9
3-Oct	7:00	36.936	336.6
3-Oct	8:00	36.54	340.8
3-Oct	9:00	32.688	335.6
3-Oct	10:00	35.316	338.8
3-Oct	11:00	31.32	329.2
3-Oct	12:00	32.544	321.1
3-Oct	13:00	33.084	324.4
3-Oct	14:00	31.644	325.1
3-Oct	15:00	29.808	323.2
3-Oct	16:00	31.428	324.7
3-Oct	17:00	31.536	324.6
3-Oct	18:00	29.412	319.4
3-Oct	19:00	28.1844	320.1
3-Oct	20:00	27.3168	326
3-Oct	21:00	27.8928	316.2
3-Oct	22:00	28.656	308.4
3-Oct	23:00	24.0624	312.5
4-Oct	0:00	23.634	317.1
4-Oct	1:00	23.3172	326.6
4-Oct	2:00	21.8628	326.6
4-Oct	3:00	22.0716	323.8
4-Oct	4:00	21.9096	315.6
4-Oct	5:00	24.75	312.3
4-Oct	6:00	20.5812	306.9
4-Oct	7:00	20.0916	294.1
4-Oct	8:00	23.3928	293.1
4-Oct	9:00	20.2068	295.3
4-Oct	10:00	20.6028	280.8
4-Oct	11:00	21.8484	286.5
4-Oct	12:00	21.9456	286.9
4-Oct	13:00	18	306.3
4-Oct	14:00	20.3616	294.1
4-Oct	15:00	18.3312	302.4
4-Oct	16:00	17.5572	300.8
4-Oct	17:00	17.2944	299.2
4-Oct	18:00	13.8708	315.1
4-Oct	19:00	12.726	318.7
4-Oct	20:00	10.8864	325.5
4-Oct	21:00	9.8964	321.6
4-Oct	22:00	6.8544	290.9
4-Oct	23:00	6.0516	290.1
5-Oct	0:00	5.8716	266.1
5-Oct	1:00	7.2504	243.1
5-Oct	2:00	9.2736	230.8
5-Oct	3:00	10.3464	233.5
5-Oct	4:00	13.3092	277.4
5-Oct	5:00	11.3256	312.9
5-Oct	6:00	7.2288	319.2
5-Oct	7:00	10.35	297
5-Oct	8:00	8.5248	276.9
5-Oct	9:00	8.316	273.4
5-Oct	10:00	10.5408	261.9
5-Oct	11:00	8.0424	246.2
5-Oct	12:00	10.98	254.3
5-Oct	13:00	15.3468	261.4
5-Oct	14:00	14.2488	238.1
5-Oct	15:00	15.3252	249.6
5-Oct	16:00	15.3	230.4
5-Oct	17:00	14.5296	222.7
5-Oct	18:00	15.174	211.4
5-Oct	19:00	10.5444	201.4
5-Oct	20:00	5.3352	216.7
5-Oct	21:00	5.3712	197.4
5-Oct	22:00	6.8436	179.2
5-Oct	23:00	6.7536	149.4
6-Oct	0:00	7.0092	110.9
6-Oct	1:00	8.4996	116.4
6-Oct	2:00	5.9472	106.4
6-Oct	3:00	9.054	98
6-Oct	4:00	8.7408	96.9
6-Oct	5:00	8.316	126.9
6-Oct	6:00	8.6688	100.2
6-Oct	7:00	6.0984	91.2
6-Oct	8:00	6.4908	110.4
6-Oct	9:00	8.9856	103
6-Oct	10:00	8.4276	124.3
6-Oct	11:00	6.516	104.9
6-Oct	12:00	7.7256	86.8
6-Oct	13:00	8.7984	90.4
6-Oct	14:00	10.656	93.6
6-Oct	15:00	10.0008	98.3
6-Oct	16:00	8.8992	128.5
6-Oct	17:00	5.7168	127.4
6-Oct	18:00	6.5412	110.9
6-Oct	19:00	7.8696	101.5
6-Oct	20:00	7.2288	133.2
6-Oct	21:00	10.2636	114.3
6-Oct	22:00	5.9616	147.5
6-Oct	23:00	5.4468	115.5
7-Oct	0:00	5.7168	111.9
7-Oct	1:00	5.8716	132.1
7-Oct	2:00	4.7232	137
7-Oct	3:00	4.734	127.2
7-Oct	4:00	5.166	142.4
7-Oct	5:00	5.1408	147
7-Oct	6:00	8.9208	171.4
7-Oct	7:00	10.638	173.1
7-Oct	8:00	10.7496	151.9
7-Oct	9:00	13.4496	153.3
7-Oct	10:00	14.5476	141.7
7-Oct	11:00	17.6364	134.5
7-Oct	12:00	19.9656	134.4
7-Oct	13:00	20.232	135.5
7-Oct	14:00	23.0076	135.6
7-Oct	15:00	24.3324	126.9
7-Oct	16:00	25.1064	127.1
7-Oct	17:00	23.5404	131.1
7-Oct	18:00	23.1012	132.3
7-Oct	19:00	25.938	132.3
7-Oct	20:00	29.556	144.6
7-Oct	21:00	25.9524	151.2
7-Oct	22:00	16.0092	164.2
7-Oct	23:00	10.818	172.3
8-Oct	0:00	13.5576	175.1
8-Oct	1:00	14.8824	179.3
8-Oct	2:00	16.8444	187.7
8-Oct	3:00	16.1568	203
8-Oct	4:00	12.6216	200.9
8-Oct	5:00	9.3132	183.3
8-Oct	6:00	12.816	203.8
8-Oct	7:00	12.7368	207.2
8-Oct	8:00	4.8456	202.8
8-Oct	9:00	3.2652	200.8
8-Oct	10:00	5.2056	241
8-Oct	11:00	2.8224	276.3
8-Oct	12:00	2.0844	339.7
8-Oct	13:00	6.3396	103.5
8-Oct	14:00	9.6624	97
8-Oct	15:00	11.0412	102.9
8-Oct	16:00	9.414	106.2
8-Oct	17:00	9.594	88.5
8-Oct	18:00	10.9368	86.1
8-Oct	19:00	14.0328	81.5
8-Oct	20:00	10.6092	73.95
8-Oct	21:00	11.9916	34.38
8-Oct	22:00	16.5816	14.78
8-Oct	23:00	19.8072	41.11
9-Oct	0:00	22.0932	62.93
9-Oct	1:00	20.808	61.23
9-Oct	2:00	20.088	64.11
9-Oct	3:00	13.6944	50.79
9-Oct	4:00	16.326	24.59
9-Oct	5:00	22.6512	20.49
9-Oct	6:00	28.134	25.36
9-Oct	7:00	33.156	23.52
9-Oct	8:00	35.136	26.06
9-Oct	9:00	33.912	29.66
9-Oct	10:00	30.78	28.22
9-Oct	11:00	35.532	14.93
9-Oct	12:00	29.088	1.857
9-Oct	13:00	38.628	356.1
9-Oct	14:00	39.168	348.8
9-Oct	15:00	43.632	344.9
9-Oct	16:00	45.468	343.3
9-Oct	17:00	45.576	336.9
9-Oct	18:00	38.268	331.1
9-Oct	19:00	37.908	326.9
9-Oct	20:00	35.424	330.8
9-Oct	21:00	33.732	333.8
9-Oct	22:00	30.276	335.7
9-Oct	23:00	25.5204	331.5
10-Oct	0:00	24.7248	325.9
10-Oct	1:00	26.9712	328.4
10-Oct	2:00	28.0548	326.4
10-Oct	3:00	24.8328	335
10-Oct	4:00	24.0192	332
10-Oct	5:00	21.3048	328.5

Date	Time	Speed (km/hr)	Direction (°)
10-Oct	6:00	17.7696	333
10-Oct	7:00	16.2612	327
10-Oct	8:00	17.2368	325.8
10-Oct	9:00	14.2992	336.9
10-Oct	10:00	15.5484	330.6
10-Oct	11:00	15.2028	321.9
10-Oct	12:00	15.6276	317
10-Oct	13:00	14.5152	310.8
10-Oct	14:00	14.0256	302.6
10-Oct	15:00	12.8268	304.9
10-Oct	16:00	11.5128	285.4
10-Oct	17:00	8.4888	285.7
10-Oct	18:00	3.708	261.5
10-Oct	19:00	3.186	240.3
10-Oct	20:00	1.3284	240.5
10-Oct	21:00	1.5228	240.1
10-Oct	22:00	4.338	240
10-Oct	23:00	0.9576	239.9
11-Oct	0:00	2.0412	239.9
11-Oct	1:00	0.9504	239.9
11-Oct	2:00	0.7668	239.8
11-Oct	3:00	5.7384	228.7
11-Oct	4:00	8.8884	216.6
11-Oct	5:00	5.5368	189.6
11-Oct	6:00	8.0676	192
11-Oct	7:00	8.7732	205.5
11-Oct	8:00	4.9608	216.9
11-Oct	9:00	5.6988	175.4
11-Oct	10:00	5.688	131.2
11-Oct	11:00	4.8816	85.1
11-Oct	12:00	4.6872	125.2
11-Oct	13:00	7.7256	71.27
11-Oct	14:00	6.12	68.33
11-Oct	15:00	7.578	65.72
11-Oct	16:00	7.866	57.76
11-Oct	17:00	11.268	58.31
11-Oct	18:00	13.1004	82.8

Date	Time	Speed (km/hr)	Direction (°)
11-Oct	19:00	12.6144	88.6
11-Oct	20:00	10.0332	107.3
11-Oct	21:00	10.6092	86.5
11-Oct	22:00	13.4244	68.7
11-Oct	23:00	15.318	79.22
12-Oct	0:00	17.5392	75.08
12-Oct	1:00	20.4336	73.94
12-Oct	2:00	20.754	80.8
12-Oct	3:00	20.0268	83.3
12-Oct	4:00	19.9404	75.81
12-Oct	5:00	18.5292	72.48
12-Oct	6:00	16.9272	75.49
12-Oct	7:00	13.5216	66.27
12-Oct	8:00	11.718	44.8
12-Oct	9:00	11.034	42.96
12-Oct	10:00	13.2264	39.96
12-Oct	11:00	12.0276	48.3
12-Oct	12:00	8.442	57.29
12-Oct	13:00	5.2308	80.8
12-Oct	14:00	5.3064	104.2
12-Oct	15:00	4.23	140.4
12-Oct	16:00	6.1236	157.5
12-Oct	17:00	4.5108	166.4
12-Oct	18:00	4.4928	128.9
12-Oct	19:00	6.0876	140.1
12-Oct	20:00	6.9696	181.3
12-Oct	21:00	8.4492	179
12-Oct	22:00	11.142	166.8
12-Oct	23:00	11.214	170.8
13-Oct	0:00	10.26	178.3
13-Oct	1:00	13.5108	168.8
13-Oct	2:00	13.8564	158.9
13-Oct	3:00	12.0204	165.4
13-Oct	4:00	15.0732	165.2
13-Oct	5:00	18.6156	164.2
13-Oct	6:00	22.3596	151.4
13-Oct	7:00	23.2488	147.1

Date	Time	Speed (km/hr)	Direction (°)
13-Oct	8:00	25.4556	154.8
13-Oct	9:00	28.368	158.9
13-Oct	10:00	32.688	158.2
13-Oct	11:00	37.332	156.2
13-Oct	12:00	37.584	157.4
13-Oct	13:00	38.52	159.5
13-Oct	14:00	38.34	153.8
13-Oct	15:00	40.968	148.4
13-Oct	16:00	40.356	151
13-Oct	17:00	38.376	153.5
13-Oct	18:00	37.116	163.1
13-Oct	19:00	31.968	167.5
13-Oct	20:00	35.352	170.1
13-Oct	21:00	35.316	171.2
13-Oct	22:00	28.0656	182.6
13-Oct	23:00	27.0432	186.7
14-Oct	0:00	24.6312	188.9
14-Oct	1:00	21.4668	188.6
14-Oct	2:00	21.5064	192
14-Oct	3:00	19.9224	191.7
14-Oct	4:00	20.2104	200.8
14-Oct	5:00	15.5988	201
14-Oct	6:00	13.3092	197.3
14-Oct	7:00	6.9768	201.1
14-Oct	8:00	6.192	160.4
14-Oct	9:00	9.9576	163.7
14-Oct	10:00	13.9752	155.7
14-Oct	11:00	17.7588	163.1
14-Oct	12:00	18.072	155.1
14-Oct	13:00	15.1596	151.2
14-Oct	14:00	17.2584	144.9
14-Oct	15:00	18.0684	140
14-Oct	16:00	21.8664	142.7
14-Oct	17:00	22.7232	146.9
14-Oct	18:00	28.3896	166.4
14-Oct	19:00	28.7316	177
14-Oct	20:00	25.8624	184.3

Date	Time	Speed (km/hr)	Direction (°)
14-Oct	21:00	27.7164	188
14-Oct	22:00	24.84	189.1
14-Oct	23:00	22.698	194.4
15-Oct	0:00	22.7196	202.5
15-Oct	1:00	33.444	217.9
15-Oct	2:00	31.752	232.1
15-Oct	3:00	32.22	250.3
15-Oct	4:00	29.052	252.9
15-Oct	5:00	26.5284	244.9
15-Oct	6:00	31.536	249.9
15-Oct	7:00	33.516	253.4
15-Oct	8:00	31.572	254
15-Oct	9:00	35.388	291.6
15-Oct	10:00	30.636	300.2
15-Oct	11:00	29.016	308
15-Oct	12:00	24.408	321.3
15-Oct	13:00	20.8764	332.5
15-Oct	14:00	19.674	339.4
15-Oct	15:00	17.9964	342.6
15-Oct	16:00	8.6688	340.5
15-Oct	17:00	3.3984	340.8
15-Oct	18:00	3.8232	355.5
15-Oct	19:00	7.0488	294
15-Oct	20:00	4.644	200.7
15-Oct	21:00	9.846	189.1
15-Oct	22:00	12.7548	190.2
15-Oct	23:00	16.1244	193.3
16-Oct	0:00	17.4996	191
16-Oct	1:00	19.5444	188.9
16-Oct	2:00	19.9224	181.6
16-Oct	3:00	16.488	184.3
16-Oct	4:00	12.2544	193.6
16-Oct	5:00	12.8196	177.5
16-Oct	6:00	14.6844	187.2
16-Oct	7:00	12.564	193.9
16-Oct	8:00	15.0516	197
16-Oct	9:00	12.8052	203

Date	Time	Speed (km/hr)	Direction (°)
16-Oct	10:00	14.1012	210.6
16-Oct	11:00	9.0252	233.9
16-Oct	12:00	5.5008	288.8
16-Oct	13:00	3.7152	280.2
16-Oct	14:00	4.5936	300.9
16-Oct	15:00	10.5192	17.35
16-Oct	16:00	8.5788	36.24
16-Oct	17:00	10.818	56.32
16-Oct	18:00	10.98	77.74
16-Oct	19:00	13.9932	87.8
16-Oct	20:00	15.1056	95.8
16-Oct	21:00	20.7684	100.1
16-Oct	22:00	17.2584	101.4
16-Oct	23:00	18.5508	101
17-Oct	0:00	19.26	103.9
17-Oct	1:00	18.936	109.5
17-Oct	2:00	19.9728	106.9
17-Oct	3:00	23.0616	102.5
17-Oct	4:00	24.0084	107
17-Oct	5:00	24.0948	110.3
17-Oct	6:00	23.6952	106.6
17-Oct	7:00	25.9236	102.2
17-Oct	8:00	22.7988	97.7
17-Oct	9:00	23.13	99.2
17-Oct	10:00	19.2564	112.6
17-Oct	11:00	19.602	110.5
17-Oct	12:00	18.1404	111.8
17-Oct	13:00	20.4624	115.3
17-Oct	14:00	18.3528	104.6
17-Oct	15:00	18.3888	82.9
17-Oct	16:00	19.8252	77.92
17-Oct	17:00	15.4944	61.91
17-Oct	18:00	16.0596	44.26
17-Oct	19:00	17.6796	26.69
17-Oct	20:00	18.4428	15.38
17-Oct	21:00	18.7416	10.31
17-Oct	22:00	14.9832	357.1

Date	Time	Speed (km/hr)	Direction (°)
17-Oct	23:00	17.82	335.7
18-Oct	0:00	20.5884	321
18-Oct	1:00	30.456	316.1
18-Oct	2:00	40.212	317.2
18-Oct	3:00	44.316	312
18-Oct	4:00	49.356	309.2
18-Oct	5:00	49.392	312.4
18-Oct	6:00	46.512	312.7
18-Oct	7:00	45.972	308.3
18-Oct	8:00	45.36	309.1
18-Oct	9:00	45.864	306.4
18-Oct	10:00	42.624	309.9
18-Oct	11:00	45.252	303.8
18-Oct	12:00	42.264	298
18-Oct	13:00	45.972	290.5
18-Oct	14:00	44.244	295.5
18-Oct	15:00	38.448	297.1
18-Oct	16:00	36.612	291.7
18-Oct	17:00	38.592	287.8
18-Oct	18:00	31.356	275.1
18-Oct	19:00	29.196	266
18-Oct	20:00	34.668	272.5
18-Oct	21:00	31.86	267.7
18-Oct	22:00	34.128	273
18-Oct	23:00	34.38	269
19-Oct	0:00	30.132	271
19-Oct	1:00	30.672	272.7
19-Oct	2:00	35.892	283.7
19-Oct	3:00	36.18	291.6
19-Oct	4:00	34.812	282.5
19-Oct	5:00	31.824	276.2
19-Oct	6:00	30.528	278.6
19-Oct	7:00	30.24	292.1
19-Oct	8:00	31.176	287.4
19-Oct	9:00	32.04	286.4
19-Oct	10:00	30.348	277.9
19-Oct	11:00	28.872	279

Date	Time	Speed (km/hr)	Direction (°)
19-Oct	12:00	32.328	285.2
19-Oct	13:00	31.176	287.1
19-Oct	14:00	31.536	288.4
19-Oct	15:00	27.8784	302.8
19-Oct	16:00	29.808	289.4
19-Oct	17:00	29.448	284.6
19-Oct	18:00	25.7436	290.6
19-Oct	19:00	23.3604	305.2
19-Oct	20:00	28.332	288.3
19-Oct	21:00	24.7356	288.1
19-Oct	22:00	26.3052	292
19-Oct	23:00	30.168	286.4
20-Oct	0:00	30.6	284.9
20-Oct	1:00	28.2672	284
20-Oct	2:00	29.052	284.4
20-Oct	3:00	30.456	291.9
20-Oct	4:00	27.5724	308.1
20-Oct	5:00	25.4304	308.4
20-Oct	6:00	25.5024	305.2
20-Oct	7:00	27.8712	302.2
20-Oct	8:00	29.592	301.5
20-Oct	9:00	32.508	300.4
20-Oct	10:00	26.6148	310.8
20-Oct	11:00	29.844	304.7
20-Oct	12:00	30.096	299.3
20-Oct	13:00	30.708	287.4
20-Oct	14:00	29.124	301.1
20-Oct	15:00	26.694	297.6
20-Oct	16:00	26.8884	289
20-Oct	17:00	24.0264	295.8
20-Oct	18:00	19.6416	280.1
20-Oct	19:00	20.0628	291.5
20-Oct	20:00	17.928	305.1
20-Oct	21:00	15.6708	288.3
20-Oct	22:00	14.6232	304.6
20-Oct	23:00	21.5712	291.2
21-Oct	0:00	17.1324	292.1

Date	Time	Speed (km/hr)	Direction (°)
21-Oct	1:00	16.4196	288.4
21-Oct	2:00	13.7664	295
21-Oct	3:00	11.484	276
21-Oct	4:00	10.7388	297.7
21-Oct	5:00	10.9692	328.8
21-Oct	6:00	16.758	313
21-Oct	7:00	18.252	310.4
21-Oct	8:00	21.2148	314
21-Oct	9:00	16.2288	326.8
21-Oct	10:00	19.3212	322.7
21-Oct	11:00	18.828	297.3
21-Oct	12:00	18.5292	285.8
21-Oct	13:00	16.6752	281.6
21-Oct	14:00	16.0704	279.3
21-Oct	15:00	15.1704	288
21-Oct	16:00	14.688	271.2
21-Oct	17:00	14.4	266.6
21-Oct	18:00	15.0336	273.2
21-Oct	19:00	12.618	271.7
21-Oct	20:00	11.7828	269.9
21-Oct	21:00	10.5192	259.4
21-Oct	22:00	6.9264	236.9
21-Oct	23:00	7.4844	223.2
22-Oct	0:00	8.9172	208.4
22-Oct	1:00	6.552	200.5
22-Oct	2:00	8.28	183.8
22-Oct	3:00	11.52	163.7
22-Oct	4:00	12.6108	150.3
22-Oct	5:00	11.736	178.9
22-Oct	6:00	14.292	196.8
22-Oct	7:00	17.154	198
22-Oct	8:00	18.1188	200.7
22-Oct	9:00	17.4888	197.2
22-Oct	10:00	21.9744	199.9
22-Oct	11:00	24.7248	201.2
22-Oct	12:00	25.2684	199.4
22-Oct	13:00	23.49	200.4

Date	Time	Speed (km/hr)	Direction (°)
22-Oct	14:00	24.048	203
22-Oct	15:00	23.7132	193.5
22-Oct	16:00	25.038	183.7
22-Oct	17:00	23.9976	180.4
22-Oct	18:00	23.544	182.6
22-Oct	19:00	25.5924	189.4
22-Oct	20:00	21.564	184.6
22-Oct	21:00	19.2204	163.5
22-Oct	22:00	20.718	161.2
22-Oct	23:00	16.5276	155.4
23-Oct	0:00	12.8196	146.4
23-Oct	1:00	10.6704	139.7
23-Oct	2:00	8.6688	155.1
23-Oct	3:00	6.2532	188.7
23-Oct	4:00	8.9568	235.6
23-Oct	5:00	11.3004	267
23-Oct	6:00	14.0256	268.5
23-Oct	7:00	16.9992	271.2
23-Oct	8:00	18.1404	269.9
23-Oct	9:00	34.308	305.5
23-Oct	10:00	40.464	301.2
23-Oct	11:00	42.048	301.6
23-Oct	12:00	39.204	304.5
23-Oct	13:00	37.008	302
23-Oct	14:00	33.948	302.7
23-Oct	15:00	34.236	302
23-Oct	16:00	31.284	288.9
23-Oct	17:00	21.6576	278.8
23-Oct	18:00	19.7856	276.1
23-Oct	19:00	20.2032	277.2
23-Oct	20:00	19.8432	278.6
23-Oct	21:00	18.9756	271.3
23-Oct	22:00	19.1556	274.8
23-Oct	23:00	18.0792	258.6
24-Oct	0:00	18.738	268.1
24-Oct	1:00	11.862	248.9
24-Oct	2:00	12.3696	247.5

Date	Time	Speed (km/hr)	Direction (°)
24-Oct	3:00	13.3272	258.4
24-Oct	4:00	11.8764	227.6
24-Oct	5:00	13.5792	213.3
24-Oct	6:00	19.9908	208.8
24-Oct	7:00	15.3036	206.7
24-Oct	8:00	15.3936	226.5
24-Oct	9:00	17.3196	273.9
24-Oct	10:00	20.6532	312.4
24-Oct	11:00	22.338	319.8
24-Oct	12:00	24.9768	311
24-Oct	13:00	27.5112	305
24-Oct	14:00	26.9064	311
24-Oct	15:00	29.808	312.6
24-Oct	16:00	20.718	303.3
24-Oct	17:00	21.6648	288.7
24-Oct	18:00	19.602	291.6
24-Oct	19:00	17.3952	299.3
24-Oct	20:00	22.0104	310.4
24-Oct	21:00	17.7336	307.7
24-Oct	22:00	22.7592	302.5
24-Oct	23:00	16.1532	294
25-Oct	0:00	14.2704	279.2
25-Oct	1:00	16.4196	269.2
25-Oct	2:00	11.844	309.9
25-Oct	3:00	12.9276	297.1
25-Oct	4:00	15.0516	268.6
25-Oct	5:00	17.6796	268.6
25-Oct	6:00	18.558	277.9
25-Oct	7:00	21.6216	269.5
25-Oct	8:00	23.9184	273.8
25-Oct	9:00	23.6844	266.8
25-Oct	10:00	26.5284	273.7
25-Oct	11:00	27.972	281.1
25-Oct	12:00	21.8664	271.5
25-Oct	13:00	32.94	282.8
25-Oct	14:00	27.6804	285.9
25-Oct	15:00	28.4256	290.8

Date	Time	Speed (km/hr)	Direction (°)
25-Oct	16:00	28.2348	281.5
25-Oct	17:00	33.264	281
25-Oct	18:00	28.6776	291.9
25-Oct	19:00	26.532	294.2
25-Oct	20:00	25.9416	304.2
25-Oct	21:00	21.672	295.5
25-Oct	22:00	22.2876	307.4
25-Oct	23:00	23.1192	303.9
26-Oct	0:00	18.2196	300.7
26-Oct	1:00	16.434	281.7
26-Oct	2:00	15.498	273.7
26-Oct	3:00	16.3404	276.1
26-Oct	4:00	13.5936	281.1
26-Oct	5:00	11.844	277.8
26-Oct	6:00	12.5028	277.9
26-Oct	7:00	13.1328	275.9
26-Oct	8:00	11.6892	279
26-Oct	9:00	7.9956	261.9
26-Oct	10:00	7.1496	247.3
26-Oct	11:00	6.7068	245.1
26-Oct	12:00	8.802	262.7
26-Oct	13:00	7.7724	271.1
26-Oct	14:00	8.6364	257.9
26-Oct	15:00	10.6344	215.1
26-Oct	16:00	6.696	213.3
26-Oct	17:00	2.8296	205.3
26-Oct	18:00	2.736	194
26-Oct	19:00	4.176	3.374
26-Oct	20:00	5.8824	99.9
26-Oct	21:00	5.4432	138.9
26-Oct	22:00	6.4008	162.6
26-Oct	23:00	4.554	162.3
27-Oct	0:00	2.718	152.4
27-Oct	1:00	1.7352	141.6
27-Oct	2:00	4.5576	156.8
27-Oct	3:00	6.7572	150.8
27-Oct	4:00	8.6976	127.2

Date	Time	Speed (km/hr)	Direction (°)
27-Oct	5:00	10.6236	130.6
27-Oct	6:00	12.4596	127.3
27-Oct	7:00	17.1324	126
27-Oct	8:00	22.3704	126.1
27-Oct	9:00	26.154	122.3
27-Oct	10:00	26.1792	113.8
27-Oct	11:00	28.6776	125.2
27-Oct	12:00	27.2988	131.2
27-Oct	13:00	25.9056	132.5
27-Oct	14:00	24.21	130.3
27-Oct	15:00	24.1128	129.1
27-Oct	16:00	23.4144	135.7
27-Oct	17:00	23.8032	141.9
27-Oct	18:00	20.8584	148.1
27-Oct	19:00	13.5324	143.6
27-Oct	20:00	7.9272	108.3
27-Oct	21:00	9.6912	115.6
27-Oct	22:00	6.9228	138.9
27-Oct	23:00	6.2388	108.9
28-Oct	0:00	6.8004	83.5
28-Oct	1:00	6.0732	93.7
28-Oct	2:00	6.1812	77.78
28-Oct	3:00	5.6196	63.52
28-Oct	4:00	5.976	33.95
28-Oct	5:00	6.75	38.89
28-Oct	6:00	10.4076	6.451
28-Oct	7:00	14.022	6.662
28-Oct	8:00	13.2588	7.758
28-Oct	9:00	13.4172	6.884
28-Oct	10:00	12.8844	358.8
28-Oct	11:00	18.9	350
28-Oct	12:00	21.798	357.8
28-Oct	13:00	22.0788	355.1
28-Oct	14:00	23.2128	351.8
28-Oct	15:00	24.0984	348
28-Oct	16:00	22.6296	346.2
28-Oct	17:00	25.7076	343.5

Date	Time	Speed (km/hr)	Direction (°)
28-Oct	18:00	24.786	343.4
28-Oct	19:00	26.388	338.8
28-Oct	20:00	27.3204	340.7
28-Oct	21:00	28.836	341
28-Oct	22:00	27.3024	339.2
28-Oct	23:00	25.0308	337.3
29-Oct	0:00	22.7592	330.8
29-Oct	1:00	23.454	333.1
29-Oct	2:00	25.758	330.8
29-Oct	3:00	30.348	329.6
29-Oct	4:00	31.212	331.7
29-Oct	5:00	30.456	332.2
29-Oct	6:00	28.0368	331
29-Oct	7:00	27.72	324.1
29-Oct	8:00	29.268	320.9
29-Oct	9:00	28.5624	323
29-Oct	10:00	28.404	324.3
29-Oct	11:00	28.0188	324.6
29-Oct	12:00	28.422	327.5
29-Oct	13:00	31.932	329.4
29-Oct	14:00	31.824	332.3
29-Oct	15:00	28.7064	331.8
29-Oct	16:00	27.7272	323.3
29-Oct	17:00	26.7408	322.4
29-Oct	18:00	27.8928	320.5
29-Oct	19:00	28.5876	320.5
29-Oct	20:00	28.062	319.6
29-Oct	21:00	30.42	321.3
29-Oct	22:00	30.456	324.5
29-Oct	23:00	27.2268	328.7
30-Oct	0:00	23.6592	325.4
30-Oct	1:00	27.5652	340.6
30-Oct	2:00	24.2172	335.7
30-Oct	3:00	24.3648	334
30-Oct	4:00	22.0248	327.2
30-Oct	5:00	27.7992	339
30-Oct	6:00	29.232	341.6

Date	Time	Speed (km/hr)	Direction (°)
30-Oct	7:00	30.456	342.2
30-Oct	8:00	29.916	342.7
30-Oct	9:00	26.2368	341.7
30-Oct	10:00	24.4008	339.8
30-Oct	11:00	21.0852	330.3
30-Oct	12:00	19.9836	330.9
30-Oct	13:00	18.6588	337.6
30-Oct	14:00	16.5276	330.9
30-Oct	15:00	10.0224	314.2
30-Oct	16:00	12.0708	289.4
30-Oct	17:00	18.3816	309.4
30-Oct	18:00	25.5276	330.2
30-Oct	19:00	21.0348	332
30-Oct	20:00	20.9736	347.2
30-Oct	21:00	22.3524	350.3
30-Oct	22:00	11.2032	328.2
30-Oct	23:00	12.0024	302.6
31-Oct	0:00	12.7728	312.5
31-Oct	1:00	13.2444	317.6
31-Oct	2:00	13.1472	284.4
31-Oct	3:00	16.5528	288.8
31-Oct	4:00	14.8212	275.5
31-Oct	5:00	14.2776	274.5
31-Oct	6:00	12.8556	281.7
31-Oct	7:00	10.4652	279.7
31-Oct	8:00	6.4224	278.4
31-Oct	9:00	5.5476	260.3
31-Oct	10:00	4.932	246.8
31-Oct	11:00	4.3128	239.9
31-Oct	12:00	5.4216	237.1
31-Oct	13:00	4.2156	187.2
31-Oct	14:00	6.6996	152.1
31-Oct	15:00	8.8524	131.2
31-Oct	16:00	9.8028	129.4
31-Oct	17:00	12.7836	122.7
31-Oct	18:00	11.34	122.6
31-Oct	19:00	11.8692	135.3

Date	Time	Speed (km/hr)	Direction (°)
31-Oct	20:00	12.5676	127.6
31-Oct	21:00	14.706	131.1
31-Oct	22:00	16.8876	139.2
31-Oct	23:00	13.5144	141.8

(km/hr = kilometres per hour; ° = degrees, - = Data not available)

Table 25. Summary Results of Kennady Lake Evaporation Monitoring, 2024 Ice Free Season

Basis of Calculation	Evaporation Value (mm)				
	Jun 1 to Jun 30[a]	Jul 1 to 31-Jul	Aug 1 to Aug 31[a]	Sep 1 to Sep 30[a]	Oct 1 to 31-Oct
Penman Combined Method	89.6	107.4	53.9	15.6	1.19
Priestly-Taylor Method	93.9	110.1	49.3	10.2	-5.93
Estimated Baseline Average Monthly Value	38.1	106.7[a]	82.7	57.5	0

[a] Full monthly value.

FIGURES

NOTES:

(1)
(2)
(3)
(4)

OWNER: De Beers Group of Companies	DRAWN BY:	DATE:	PREPARED BY: GK Environment
	REVIEWED BY: -	DATE: -	DRAWING TITLE: Figure 1 — REV.2
PROJECT: GAHCHO KUE DIAMOND MINE	APPROVED BY: -	DATE: -	DRAWING NAME: Active SNP Stations - October 2024
		SCALE:	

Figure 2a. Dissolved Oxygen Concentration of Treated Effluent at SNP-07 (October 2024)

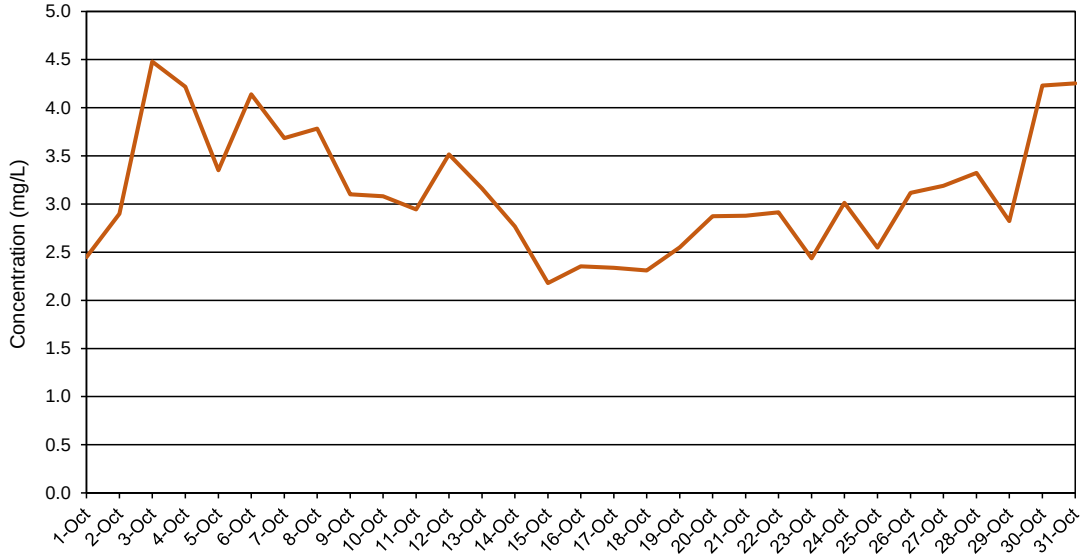


Figure 2b. Temperature of Treated Effluent at SNP-07 (October 2024)

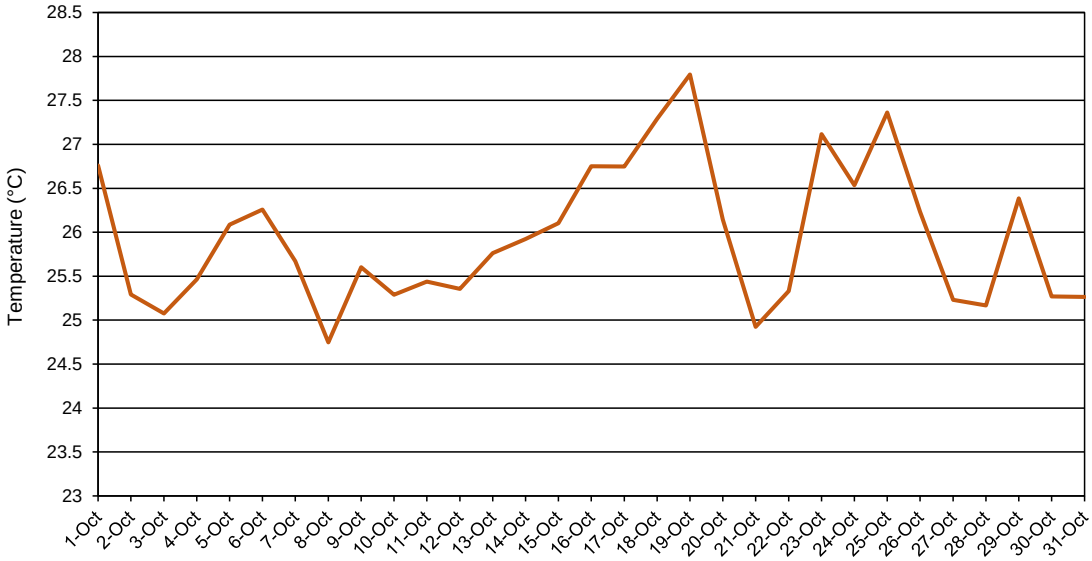


Figure 2c. pH of Treated Effluent at SNP-07 (October2024)

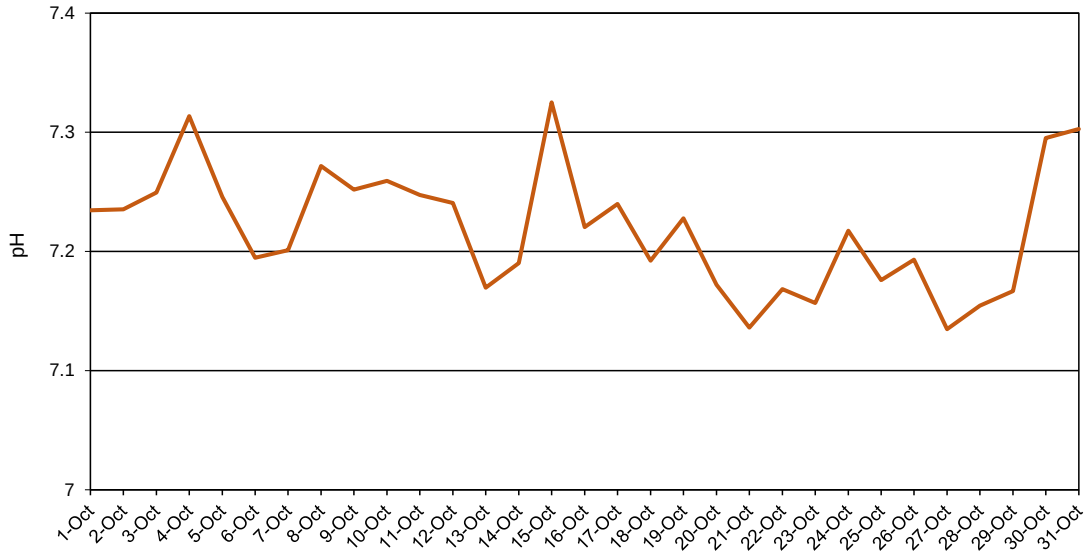


Figure 2d. Specific Conductivity of Treated Effluent at SNP-07 (October 2024)

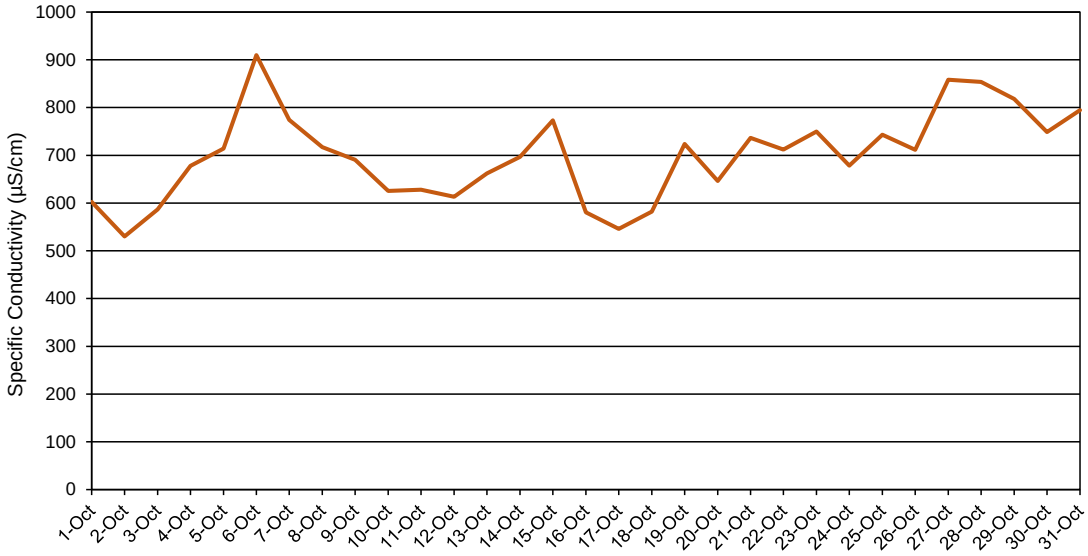


Figure 2e. Turbidity of Treated Effluent at SNP-07 (October 2024)

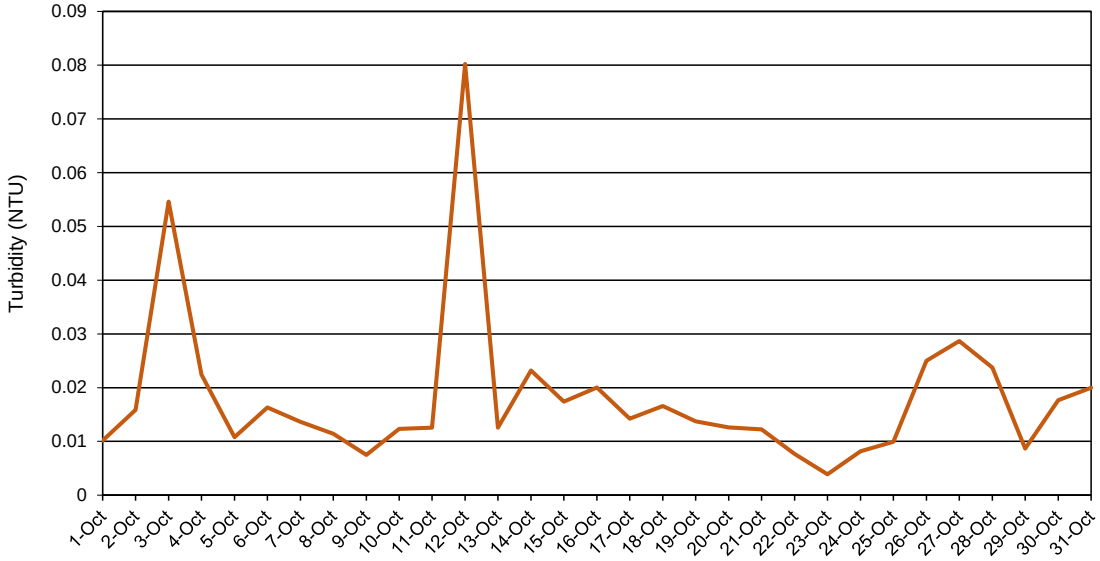


Figure 2f. Total Suspended Solids Concentration of Treated Effluent at SNP-07 (October 2024)

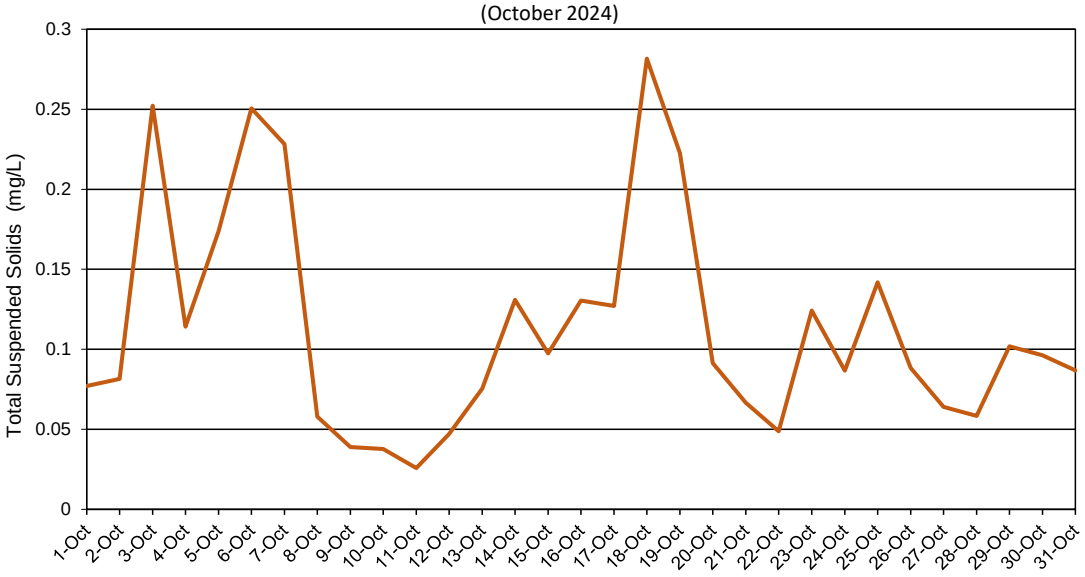
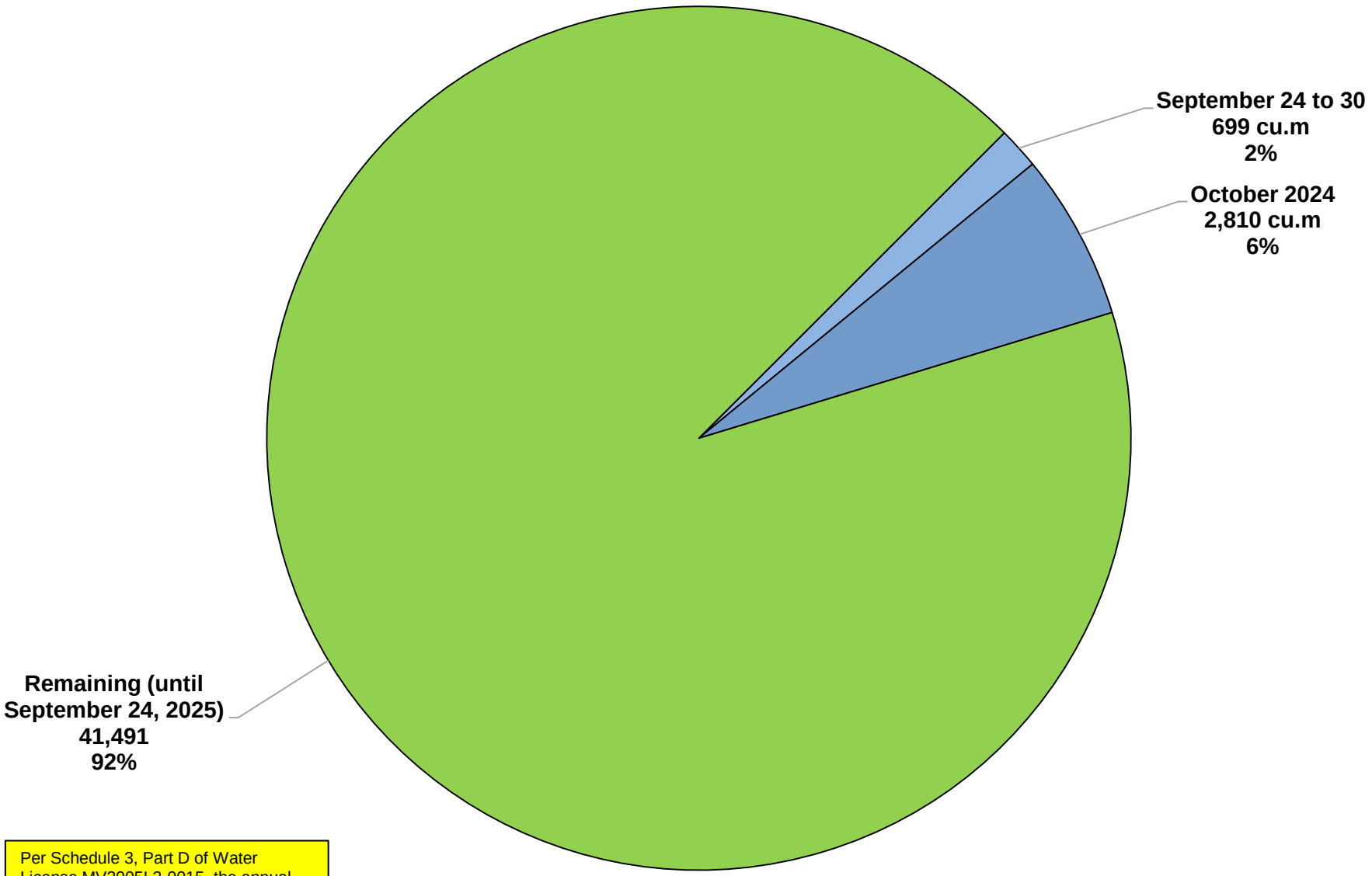


Figure 3. Cumulative Monthly Water Use from Area 8 During Operations (2024 & 2025)



Per Schedule 3, Part D of Water License MV2005L2-0015, the annual quantity of water withdrawn from Area 8 shall not exceed 45,000 cu.m during operations.

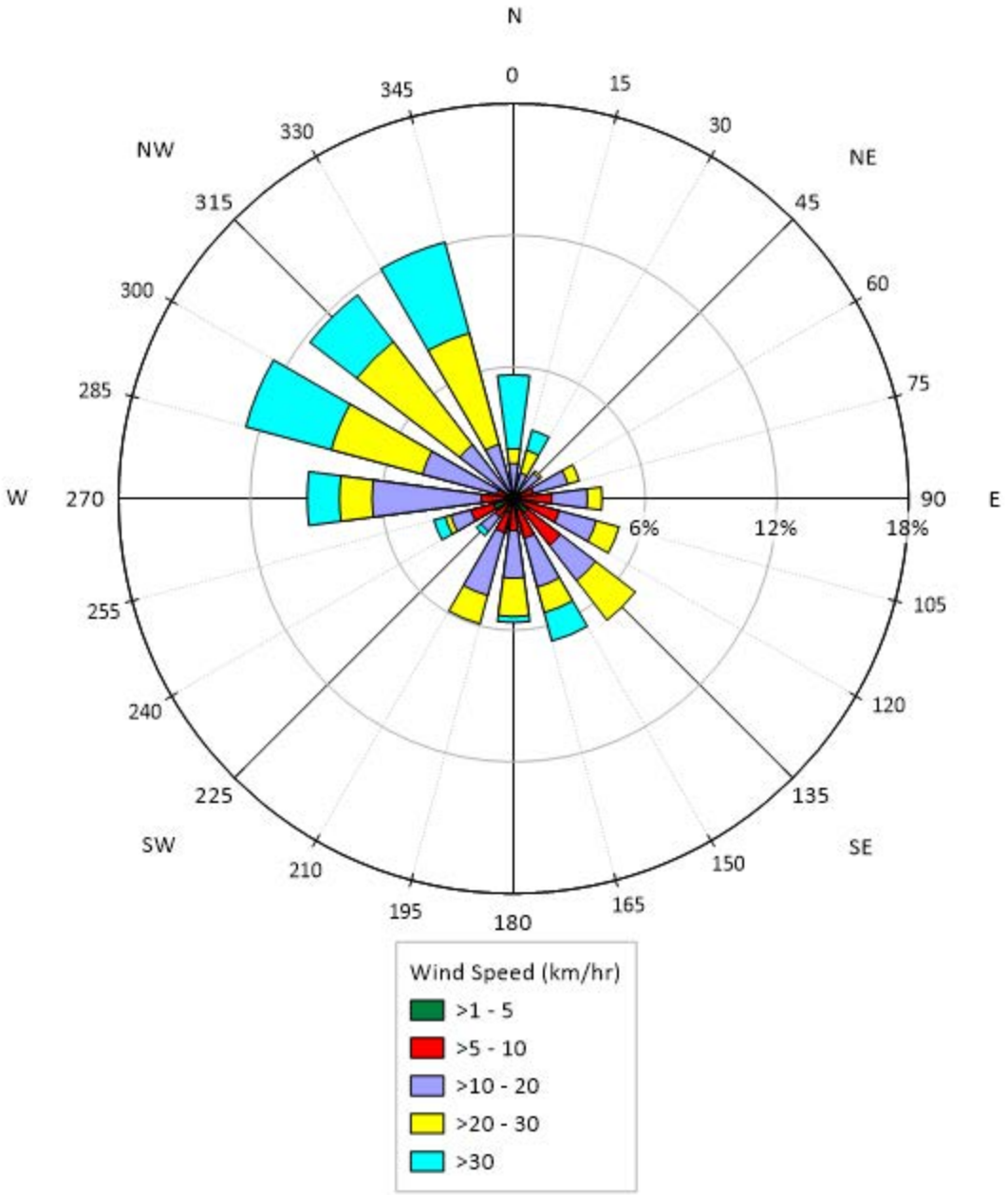


Figure 4. Windrose for the Month of October 2024 – Hill Station, Gahcho Kué Mine

km/hr = kilometres per hour; > greater than

APPENDIX A
Laboratory Analytical Certificates

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **YL2401665**		
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Edmonton
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife Northwest Territories Canada X1A 1P8	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Monthly	Date Samples Received	: 03-Oct-2024 12:10
PO	: 4100968747	Date Analysis Commenced	: 07-Oct-2024
C-O-C number	: 20241002/ 02	Issue Date	: 21-Oct-2024 15:29
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Daniel Shabestani	Lab Assistant	Metals, Burnaby, British Columbia
Janice Leung	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Maya Urquhart	Lab Analyst	Metals, Burnaby, British Columbia
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Oliver Gregg	Client Services Supervisor	External Subcontracting, Saskatoon, Saskatchewan
Owen Cheng		Metals, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units
µS/cm	microsiemens per centimetre
-	no units
Bq/L	becquerels per litre
µg/L	micrograms per litre

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLA	Detection Limit adjusted for required dilution.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	02-Oct-2024 10:41	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401665-001	----	----	----	----
					Result	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	64.5	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	64.5	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	5040	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	1580	----	----	----	----
pH	----	E108/VA	0.10	pH units	7.99	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	3970	----	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	1.6	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	0.90	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	4.79	----	----	----	----
Bromide	24959-67-9	E235.Br-U/VA	0.0500	mg/L	18.0	----	----	----	----
Chloride	16887-00-6	E235.Cl-L/VA	0.50	mg/L	1410	----	----	----	----
Fluoride	16984-48-8	E235.F-L/VA	0.020	mg/L	0.524	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	5.40	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-T/VA	0.0030	mg/L	7.38	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/VA	0.0032	mg/L	7.56	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0050	mg/L	0.177	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	02-Oct-2024 10:41	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401665-001	----	----	----	----
					Result	----	----	----	----
Anions and Nutrients									
Phosphorus, dissolved inorganic	----	E377-L/EO	0.0010	mg/L	<0.0010	----	----	----	----
Phosphorus, dissolved organic	----	EC377-L.ORG/EO	0.0020	mg/L	<0.0020	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0039	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0013	----	----	----	----
Phosphorus, total inorganic	----	E376-L/EO	0.0010	mg/L	<0.0010	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	9.43	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4-L/VA	0.300	mg/L	469	----	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	1.56	----	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.0252	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	0.00034	----	----	----	----
Arsenic, total	7440-38-2	E420-L/VA	0.000030	mg/L	0.000602	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.0331	----	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L	<0.000040	----	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000100	----	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L	1.20	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	<0.0000200 DLM	----	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	461	----	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000137	----	----	----	----
Chromium, total	7440-47-3	E420.Cr-L/VA	0.00010	mg/L	<0.00020	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	02-Oct-2024 10:41	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401665-001	----	----	----	----
					Result	----	----	----	----
Total Metals									
Cobalt, total	7440-48-4	E420-L/VA	0.000050	mg/L	0.000399	----	----	----	----
Copper, total	7440-50-8	E420-L/VA	0.00015	mg/L	0.00130	----	----	----	----
Iron, total	7439-89-6	E420-L/VA	0.0050	mg/L	0.0782	----	----	----	----
Lead, total	7439-92-1	E420-L/VA	0.000030	mg/L	<0.000060	----	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.102	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	95.8	----	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.0514	----	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.0374	----	----	----	----
Nickel, total	7440-02-0	E420-L/VA	0.00010	mg/L	0.0466	----	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	11.6	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.0303	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	<0.000100	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	4.62	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000020	----	----	----	----
Sodium, total	7440-23-5	E420-L/VA	0.030	mg/L	416	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	9.71	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	178	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	0.00120	----	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	0.000106	----	----	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00020	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	02-Oct-2024 10:41	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401665-001	----	----	----	----
					Result	----	----	----	----
Total Metals									
Tin, total	7440-31-5	E420-L/VA	0.000050	mg/L	<0.000100	----	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	0.00078	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00020	----	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.00784	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	<0.00100	----	----	----	----
Zinc, total	7440-66-6	E420-L/VA	0.0015	mg/L	<0.0030	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00040	----	----	----	----
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0037	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	0.00032	----	----	----	----
Arsenic, dissolved	7440-38-2	E421-L/VA	0.000030	mg/L	0.000563	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.0308	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L	<0.000040 DLA	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000100 DLA	----	----	----	----
Boron, dissolved	7440-42-8	E421-L/VA	0.0050	mg/L	1.33	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	<0.0000100 DLA	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	465	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000130	----	----	----	----
Chromium, dissolved	7440-47-3	E421.Cr-L/VA	0.00010	mg/L	<0.00020 DLA	----	----	----	----
Cobalt, dissolved	7440-48-4	E421-L/VA	0.000050	mg/L	0.000378	----	----	----	----
Copper, dissolved	7440-50-8	E421-L/VA	0.00015	mg/L	0.00124	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	02-Oct-2024 10:41	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401665-001	----	----	----	----
					Result	----	----	----	----
Dissolved Metals									
Iron, dissolved	7439-89-6	E421-L/VA	0.0050	mg/L	<0.0100 DLA	----	----	----	----
Lead, dissolved	7439-92-1	E421-L/VA	0.000030	mg/L	<0.000060 DLA	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.101	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	103	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.0519	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.0365	----	----	----	----
Nickel, dissolved	7440-02-0	E421-L/VA	0.00010	mg/L	0.0461	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	12.3	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.0300	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	<0.000100 DLA	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	4.92	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000020 DLA	----	----	----	----
Sodium, dissolved	7440-23-5	E421-L/VA	0.010	mg/L	494	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	494	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	9.70	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	176	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	0.00072	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	0.000104	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00020 DLA	----	----	----	----
Tin, dissolved	7440-31-5	E421-L/VA	0.000050	mg/L	<0.000100 DLA	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	02-Oct-2024 10:41	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401665-001	----	----	----	----
					Result	----	----	----	----
Dissolved Metals									
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	<0.00060 DLA	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	<0.00020 DLA	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.00709	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	<0.00100 DLA	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	<0.0020 DLA	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L	<0.00040 DLA	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-	Laboratory	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Laboratory	----	----	----	----
Volatile Organic Compounds [Fuels]									
Benzene	71-43-2	E611A/VA	0.00050	mg/L	0.00083	----	----	----	----
Ethylbenzene	100-41-4	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Styrene	100-42-5	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Toluene	108-88-3	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Xylene, m+p-	179601-23-1	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Xylene, o-	95-47-6	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Xylenes, total	1330-20-7	E611A/VA	0.00075	mg/L	<0.00075	----	----	----	----
Hydrocarbons									
F1 (C6-C10)	----	E581.VH+F1/VA	0.10	mg/L	<0.10	----	----	----	----
F1-BTEX	----	EC580/VA	0.100	mg/L	<0.100	----	----	----	----
F2 (C10-C16)	----	E601/VA	0.10	mg/L	<0.10	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	02-Oct-2024 10:41	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401665-001	----	----	----	----
					Result	----	----	----	----
Hydrocarbons									
F3 (C16-C34)	----	E601/VA	0.25	mg/L	<0.25	----	----	----	----
F4 (C34-C50)	----	E601/VA	0.25	mg/L	<0.25	----	----	----	----
Hydrocarbons, total (C6-C50)	n/a	EC581/VA	0.40	mg/L	<0.40	----	----	----	----
TEH (C10-C50)	n/a	E601/VA	0.40	mg/L	<0.40	----	----	----	----
TEH (C16-C50)	----	E601/VA	0.40	mg/L	<0.40	----	----	----	----
Hydrocarbons Surrogates									
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	E601/VA	1.0	%	90.8	----	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%	112	----	----	----	----
Volatile Organic Compounds Surrogates									
Bromofluorobenzene, 4-	460-00-4	E611A/VA	1.0	%	99.2	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611A/VA	1.0	%	104	----	----	----	----
Radiological Parameters									
Thorium-234	15065-10-8	NORMS/2I	4	Bq/L	<4	----	----	----	----
Thorium-230	14269-63-7	NORMS/2I	20	Bq/L	<20	----	----	----	----
Thorium-228	14274-82-9	NORMS/2I	0.3	Bq/L	<0.3	----	----	----	----
Uranium-238	7440-61-1	U-238/2I	0.001	Bq/L	0.091	----	----	----	----
Uranium-234	13966-29-5	U-234/2I	0.001	Bq/L	0.091	----	----	----	----
Uranium-235	15117-96-1	U-235/2I	0.00006	Bq/L	0.0046	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

ALS Canada Ltd.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2401665**	Page	: 1 of 17
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Monthly	Date Samples Received	: 03-Oct-2024 12:10
PO	: 4100968747	Issue Date	: 21-Oct-2024 15:29
C-O-C number	: 20241002/ 02		
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-08	E298	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	09-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-08	E235.Br-U	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-08	E235.Cl-L	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-08	E377-L	02-Oct-2024	08-Oct-2024	3 days	6 days	× EHT	10-Oct-2024	28 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE SNP-08	E378-U	02-Oct-2024	07-Oct-2024	3 days	5 days	× EHT	07-Oct-2024	3 days	5 days	× EHT
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE SNP-08	E235.F-L	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE SNP-08	E235.NO3-T	02-Oct-2024	07-Oct-2024	3 days	5 days	× EHT	07-Oct-2024	3 days	5 days	× EHT

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-08	E235.NO2-L	02-Oct-2024	07-Oct-2024	3 days	5 days	✗ EHT	07-Oct-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP-08	E392	02-Oct-2024	----	----	----		07-Oct-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE										
SNP-08	E235.SO4-L	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-08	E375-U	02-Oct-2024	07-Oct-2024	3 days	5 days	✗ EHT	07-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-08	E376-L	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	10-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
SNP-08	E318	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	09-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-08	E372-S	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved)										
SNP-08	E421.Cr-L	02-Oct-2024	08-Oct-2024	180 days	6 days	✓	08-Oct-2024	180 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SNP-08	E509	02-Oct-2024	09-Oct-2024	28 days	7 days	✓	09-Oct-2024	28 days	7 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis: Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)										
HDPE - dissolved (lab preserved) SNP-08	E421-L	02-Oct-2024	08-Oct-2024	180 days	6 days	✓	09-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) SNP-08	E421	02-Oct-2024	08-Oct-2024	180 days	6 days	✓	09-Oct-2024	180 days	7 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) SNP-08	E601	02-Oct-2024	08-Oct-2024	14 days	6 days	✓	08-Oct-2024	40 days	1 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate) SNP-08	E581.VH+F1	02-Oct-2024	09-Oct-2024	14 days	8 days	✓	10-Oct-2024	14 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) SNP-08	E355-L	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	09-Oct-2024	28 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SNP-08	E290	02-Oct-2024	07-Oct-2024	14 days	5 days	✓	07-Oct-2024	14 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP-08	E100	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Physical Tests : pH by Meter										
HDPE SNP-08	E108	02-Oct-2024	07-Oct-2024	0.25 hrs	124 hrs	✗ EHTR-FM	07-Oct-2024	0.25 hrs	124 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SNP-08	E162	02-Oct-2024	----	----	----		09-Oct-2024	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-08	E160-L	02-Oct-2024	----	----	----		09-Oct-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE SNP-08	E121	02-Oct-2024	----	----	----		08-Oct-2024	3 days	6 days	× EHT
Radiological Parameters : NORMS (Ra-226/228,Th-228/230/234,Pb-210,K-40) by Gamma Spectroscopy in Water										
HDPE (nitric acid) SNP-08	NORMS	02-Oct-2024	----	----	----		15-Oct-2024	----	----	
Radiological Parameters : Uranium 234 in Water										
HDPE (nitric acid) SNP-08	U-234	02-Oct-2024	----	----	----		16-Oct-2024	----	14 days	
Radiological Parameters : Uranium 235 in Water										
HDPE (nitric acid) SNP-08	U-235	02-Oct-2024	----	----	----		16-Oct-2024	----	14 days	
Radiological Parameters : Uranium 238										
HDPE (nitric acid) SNP-08	U-238	02-Oct-2024	----	----	----		16-Oct-2024	----	14 days	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) SNP-08	E420.Cr-L	02-Oct-2024	08-Oct-2024	180 days	6 days	✓	08-Oct-2024	180 days	7 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) SNP-08	E508	02-Oct-2024	10-Oct-2024	28 days	8 days	✓	10-Oct-2024	28 days	8 days	✓
Total Metals : Total Metals by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) SNP-08	E420-L	02-Oct-2024	08-Oct-2024	180 days	6 days	✓	08-Oct-2024	180 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP-08	E420	02-Oct-2024	08-Oct-2024	180 days	6 days	✓	09-Oct-2024	180 days	7 days	✓
Volatile Organic Compounds : BTEX by Headspace GC-MS										
Glass vial (sodium bisulfate)										
SNP-08	E611A	02-Oct-2024	09-Oct-2024	14 days	8 days	✓	10-Oct-2024	14 days	8 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1694780	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	1697388	1	19	5.2	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1694789	1	4	25.0	5.0	✓
BTEX by Headspace GC-MS	E611A	1700753	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1694786	1	4	25.0	5.0	✓
Conductivity in Water	E100	1694779	1	16	6.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1696389	1	4	25.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1696584	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1699424	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1696387	1	12	8.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1696388	1	4	25.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1694792	1	6	16.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1694787	1	4	25.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1694788	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1694784	1	19	5.2	5.0	✓
pH by Meter	E108	1694778	1	19	5.2	5.0	✓
Reactive Silica by Colourimetry	E392	1695672	1	17	5.8	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1694790	1	4	25.0	5.0	✓
TDS by Gravimetry	E162	1699661	1	13	7.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1694968	1	4	25.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1693839	1	15	6.6	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1696591	1	13	7.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1697385	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	1700878	1	11	9.0	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1694967	1	4	25.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1694966	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1697386	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1693905	1	18	5.5	5.0	✓
Turbidity by Nephelometry	E121	1696626	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1700752	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1694780	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	1697388	1	19	5.2	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1694789	1	4	25.0	5.0	✓
BTEX by Headspace GC-MS	E611A	1700753	1	20	5.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID	E601	1695697	1	13	7.6	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Chloride in Water by IC (Low Level)	E235.Cl-L	1694786	1	4	25.0	5.0	✓
Conductivity in Water	E100	1694779	1	16	6.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1696389	1	4	25.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1696584	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1699424	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1696387	1	12	8.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1696388	1	4	25.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1694792	1	6	16.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1694787	1	4	25.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1694788	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1694784	1	19	5.2	5.0	✓
pH by Meter	E108	1694778	1	19	5.2	5.0	✓
Reactive Silica by Colourimetry	E392	1695672	1	17	5.8	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1694790	1	4	25.0	5.0	✓
TDS by Gravimetry	E162	1699661	1	13	7.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1694968	1	4	25.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1693839	1	15	6.6	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1696591	1	13	7.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1697385	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	1700878	1	11	9.0	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1694967	1	4	25.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1694966	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1697386	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1693905	1	18	5.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1699649	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1696626	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1700752	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1694780	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	1697388	1	19	5.2	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1694789	1	4	25.0	5.0	✓
BTEX by Headspace GC-MS	E611A	1700753	1	20	5.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID	E601	1695697	1	13	7.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1694786	1	4	25.0	5.0	✓
Conductivity in Water	E100	1694779	1	16	6.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1696389	1	4	25.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1696584	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1699424	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1696387	1	12	8.3	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB) - Continued							
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1696388	1	4	25.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1694792	1	6	16.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1694787	1	4	25.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1694788	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1694784	1	19	5.2	5.0	✓
Reactive Silica by Colourimetry	E392	1695672	1	17	5.8	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1694790	1	4	25.0	5.0	✓
TDS by Gravimetry	E162	1699661	1	13	7.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1694968	1	4	25.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1693839	1	15	6.6	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1696591	1	13	7.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1697385	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	1700878	1	11	9.0	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1694967	1	4	25.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1694966	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1697386	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1693905	1	18	5.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1699649	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1696626	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1700752	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1697388	1	19	5.2	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1694789	1	4	25.0	5.0	✓
BTEX by Headspace GC-MS	E611A	1700753	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1694786	1	4	25.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1696389	1	4	25.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1696584	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1699424	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1696387	1	12	8.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1696388	1	4	25.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1694792	1	6	16.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1694787	1	4	25.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1694788	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1694784	1	19	5.2	5.0	✓
Reactive Silica by Colourimetry	E392	1695672	1	17	5.8	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1694790	1	4	25.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1694968	1	4	25.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1693839	1	15	6.6	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1696591	1	13	7.6	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1697385	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	1700878	1	11	9.0	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1694967	1	4	25.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1694966	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1697386	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1693905	1	18	5.5	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1700752	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry (Low Level)	E160-L ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide by IC (Ultra Trace Level)	E235.Br-U ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC (Low Level)	E235.F-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Trace Level)	E235.NO3-T ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC (Low Level)	E235.SO4-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Total Inorganic Phosphorus is determined colourimetrically after sample has undergone H2SO4 hydrolysis
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved Inorganic Phosphorus is determined colourimetrically after H_2SO_4 hydrolysis of a sample that has been lab or field filtered through a 0.45 micron membrane filter

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Total Metals by CRC ICPMS (Low Level)	E420-L ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L ALS Environmental - Vancouver	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L ALS Environmental - Vancouver	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
VH and F1 by Headspace GC-FID	E581.VH+F1 ALS Environmental - Vancouver	Water	BC MOE Lab Manual / CCME PHC in Soil - Tier 1 (mod)	Volatile Hydrocarbons (VH and F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
CCME PHCs - F2-F4 by GC-FID	E601 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	Sample extracts are analyzed by GC-FID for CCME hydrocarbon fractions (F2-F4). Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
BTEX by Headspace GC-MS	E611A ALS Environmental - Vancouver	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Vancouver	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Phosphorus, dissolved organic (0.0014 mg/L) by calculation.	EC377-L.ORG ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved inorganic phosphorus is subtracted from total dissolved phosphorus to determine dissolved organic phosphorus.
F1-BTEX	EC580 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	F1-BTEX is calculated as follows: F1-BTEX = F1 (C6-C10) minus benzene, toluene, ethylbenzene and xylenes (BTEX).
Sum F1 to F4 (C6-C50)	EC581 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	Hydrocarbons, total (C6-C50) is the sum of CCME Fractions F1(C6-C10), F2(C10-C16), F3(C16-C34), and F4(C34-C50). F4G-sg is not used within this calculation due to overlap with other fractions.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
NORMS (Ra-226/228,Th-228/230/234,Pb-210,K-40) by Gamma Spectroscopy in Water	NORMS Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		Naturally Occurring Radioactive Materials are analyzed using a gamma spectroscopy scan. See attached report for details.
Uranium 234 in Water	U-234 Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		See attached report.
Uranium 235 in Water	U-235 Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		See attached report.
Uranium 238	U-238 Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water	See attached report	See attached report.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Digestion for Total Inorganic Phosphorus in water	EP376 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples undergo H2SO4 hydrolysis.
Digestion for Dissolved Inorganic Phosphorus in water	EP377 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then undergo H2SO4 hydrolysis.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Vancouver	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID.
PHCs and PAHs Hexane Extraction	EP601 ALS Environmental - Vancouver	Water	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.

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QUALITY CONTROL REPORT

Work Order	: **YL2401665**	Page	: 1 of 21
Client	: De Beers Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Monthly	Date Samples Received	: 03-Oct-2024 12:10
PO	: 4100968747	Date Analysis Commenced	: 07-Oct-2024
C-O-C number	: 20241002/ 02	Issue Date	: 21-Oct-2024 15:39
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta
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Daniel Shabestani	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Janice Leung	Supervisor - Organics Instrumentation	Vancouver Organics, Burnaby, British Columbia
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Oliver Gregg	Client Services Supervisor	Saskatchewan Research Council External Subcontracting, Saskatoon, Saskatchewan
Owen Cheng		Vancouver Metals, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Edmonton Inorganics, Edmonton, Alberta

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1694778)											
VA24C6301-003	Anonymous	pH	----	E108	0.10	pH units	8.18	8.18	0.00%	4%	----
Physical Tests (QC Lot: 1694779)											
VA24C6301-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	373	375	0.535%	10%	----
Physical Tests (QC Lot: 1694780)											
VA24C6301-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	140	141	0.426%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	140	141	0.426%	20%	----
Physical Tests (QC Lot: 1696626)											
KS2404125-006	Anonymous	Turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1699661)											
FJ2403021-001	Anonymous	Solids, total dissolved [TDS]	----	E162	13	mg/L	138	141	2.16%	20%	----
Anions and Nutrients (QC Lot: 1693839)											
YL2401594-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1693905)											
FC2402742-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.364	0.367	0.730%	20%	----
Anions and Nutrients (QC Lot: 1694784)											
YL2401670-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1694786)											
YL2401665-001	SNP-08	Chloride	16887-00-6	E235.Cl-L	2.00	mg/L	1410	1410	0.128%	20%	----
Anions and Nutrients (QC Lot: 1694787)											
YL2401665-001	SNP-08	Fluoride	16984-48-8	E235.F-L	0.200	mg/L	0.524	0.518	0.006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1694788)											
YL2401665-001	SNP-08	Nitrate (as N)	14797-55-8	E235.NO3-T	0.0600	mg/L	7.38	7.39	0.178%	20%	----
Anions and Nutrients (QC Lot: 1694789)											
YL2401665-001	SNP-08	Bromide	24959-67-9	E235.Br-U	0.100	mg/L	18.0	17.8	1.01%	20%	----
Anions and Nutrients (QC Lot: 1694790)											
YL2401665-001	SNP-08	Sulfate (as SO4)	14808-79-8	E235.SO4-L	1.00	mg/L	469	479	2.07%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 1694792)											
YL2401665-001	SNP-08	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1695672)											
VA24C6658-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1696584)											
YL2401588-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1696591)											
YL2401588-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0010	mg/L	0.136	0.134	1.58%	20%	----
Anions and Nutrients (QC Lot: 1697385)											
FJ2403038-004	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1697388)											
FJ2403038-004	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1697386)											
FJ2403038-004	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 1694966)											
YL2401665-001	SNP-08	Aluminum, total	7429-90-5	E420	0.0060	mg/L	0.0252	0.0238	0.0014	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00020	mg/L	0.00034	0.00034	0.000006	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00020	mg/L	0.0331	0.0325	1.72%	20%	----
		Beryllium, total	7440-41-7	E420	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.020	mg/L	1.20	1.19	1.07%	20%	----
		Cadmium, total	7440-43-9	E420	0.0000200	mg/L	<0.0000200	<0.0000200	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.100	mg/L	461	454	1.45%	20%	----
		Cesium, total	7440-46-2	E420	0.000020	mg/L	0.000137	0.000140	0.000002	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0020	mg/L	0.102	0.0966	5.14%	20%	----
		Magnesium, total	7439-95-4	E420	0.0100	mg/L	95.8	94.4	1.49%	20%	----
		Manganese, total	7439-96-5	E420	0.00020	mg/L	0.0514	0.0515	0.190%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.0374	0.0383	2.43%	20%	----
		Potassium, total	7440-09-7	E420	0.100	mg/L	11.6	11.3	2.59%	20%	----
		Rubidium, total	7440-17-7	E420	0.00040	mg/L	0.0303	0.0292	3.61%	20%	----
		Selenium, total	7782-49-2	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.20	mg/L	4.62	4.63	0.275%	20%	----
		Silver, total	7440-22-4	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Strontium, total	7440-24-6	E420	0.00040	mg/L	9.71	9.67	0.388%	20%	----
		Sulfur, total	7704-34-9	E420	1.00	mg/L	178	176	1.07%	20%	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 1694966) - continued											
YL2401665-001	SNP-08	Tellurium, total	13494-80-9	E420	0.00040	mg/L	0.00120	0.00121	0.00002	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000020	mg/L	0.000106	0.000114	0.000008	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00060	mg/L	0.00078	0.00083	0.00006	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00020	mg/L	<0.00020	0.00020	0.000004	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000020	mg/L	0.00784	0.00780	0.428%	20%	----
		Vanadium, total	7440-62-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
Total Metals (QC Lot: 1694967)											
YL2401665-001	SNP-08	Arsenic, total	7440-38-2	E420-L	0.000060	mg/L	0.000602	0.000604	0.326%	20%	----
		Cobalt, total	7440-48-4	E420-L	0.000100	mg/L	0.000399	0.000389	0.000010	Diff <2x LOR	----
		Copper, total	7440-50-8	E420-L	0.00030	mg/L	0.00130	0.00129	0.000003	Diff <2x LOR	----
		Iron, total	7439-89-6	E420-L	0.0100	mg/L	0.0782	0.0779	0.0003	Diff <2x LOR	----
		Lead, total	7439-92-1	E420-L	0.000060	mg/L	<0.000060	<0.000060	0	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420-L	0.00020	mg/L	0.0466	0.0466	0.0239%	20%	----
		Sodium, total	7440-23-5	E420-L	0.060	mg/L	416	409	1.65%	20%	----
		Tin, total	7440-31-5	E420-L	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420-L	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
Total Metals (QC Lot: 1694968)											
YL2401665-001	SNP-08	Chromium, total	7440-47-3	E420.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1700878)											
YL2401661-004	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1696387)											
YL2401665-001	SNP-08	Aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	0.0037	0.0025	0.0012	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00032	0.00032	0.000002	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0308	0.0320	3.78%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	<0.0000100	<0.0000100	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.100	mg/L	465	475	2.10%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000020	mg/L	0.000130	0.000128	0.000002	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.101	0.110	8.42%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	103	102	1.13%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.0519	0.0521	0.466%	20%	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1696387) - continued											
YL2401665-001	SNP-08	Molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.0365	0.0377	3.14%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.100	mg/L	12.3	11.9	3.52%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00040	mg/L	0.0300	0.0305	1.71%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.100	mg/L	4.92	4.87	0.919%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.100	mg/L	494	501	1.43%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00040	mg/L	9.70	9.70	0.0373%	20%	----
		Sulfur, dissolved	7704-34-9	E421	1.00	mg/L	176	179	1.49%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00040	mg/L	0.00072	0.00073	0.000007	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000104	0.000097	0.000007	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00020	mg/L	<0.00020	0.00020	0.0000006	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00709	0.00737	3.94%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1696388)											
YL2401665-001	SNP-08	Arsenic, dissolved	7440-38-2	E421-L	0.000060	mg/L	0.000563	0.000597	0.000034	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421-L	0.0100	mg/L	1.33	1.36	2.04%	20%	----
		Cobalt, dissolved	7440-48-4	E421-L	0.000100	mg/L	0.000378	0.000391	0.000013	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421-L	0.00030	mg/L	0.00124	0.00124	0.0000007	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421-L	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421-L	0.000060	mg/L	<0.000060	<0.000060	0	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421-L	0.00020	mg/L	0.0461	0.0460	0.114%	20%	----
		Sodium, dissolved	7440-23-5	E421-L	0.020	mg/L	494	501	1.43%	20%	----
		Tin, dissolved	7440-31-5	E421-L	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1696389)											
YL2401665-001	SNP-08	Chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1699424)											
VA24C5580-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1700753)											
KS2404017-001	Anonymous	Benzene	71-43-2	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 1700753) - continued											
KS2404017-001	Anonymous	Ethylbenzene	100-41-4	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Styrene	100-42-5	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Toluene	108-88-3	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611A	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611A	0.30	µg/L	0.33	0.30	0.02	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1700752)											
KS2404017-001	Anonymous	F1 (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1694779)						
Conductivity	----	E100	1	µS/cm	1.3	----
Physical Tests (QCLot: 1694780)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1696626)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1699649)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 1699661)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1693839)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1693905)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1694784)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1694786)						
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1694787)						
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1694788)						
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	<0.0030	----
Anions and Nutrients (QCLot: 1694789)						
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1694790)						
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1694792)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1695672)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1695672) - continued						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1696584)						
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1696591)						
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1697385)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1697388)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1697386)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 1694966)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1694966) - continued						
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 1694967)						
Arsenic, total	7440-38-2	E420-L	0.00003	mg/L	<0.000030	----
Cobalt, total	7440-48-4	E420-L	0.00005	mg/L	<0.000050	----
Copper, total	7440-50-8	E420-L	0.00015	mg/L	<0.00015	----
Iron, total	7439-89-6	E420-L	0.005	mg/L	<0.0050	----
Lead, total	7439-92-1	E420-L	0.00003	mg/L	<0.000030	----
Nickel, total	7440-02-0	E420-L	0.0001	mg/L	<0.00010	----
Sodium, total	7440-23-5	E420-L	0.03	mg/L	<0.030	----
Tin, total	7440-31-5	E420-L	0.00005	mg/L	<0.000050	----
Zinc, total	7440-66-6	E420-L	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1694968)						
Chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	----
Total Metals (QCLot: 1700878)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1696387)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1696387) - continued						
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 1696388)						
Arsenic, dissolved	7440-38-2	E421-L	0.00003	mg/L	<0.000030	----
Boron, dissolved	7440-42-8	E421-L	0.005	mg/L	<0.0050	----
Cobalt, dissolved	7440-48-4	E421-L	0.00005	mg/L	<0.000050	----
Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	<0.00015	----
Iron, dissolved	7439-89-6	E421-L	0.005	mg/L	<0.0050	----
Lead, dissolved	7439-92-1	E421-L	0.00003	mg/L	<0.000030	----
Nickel, dissolved	7440-02-0	E421-L	0.0001	mg/L	<0.00010	----
Sodium, dissolved	7440-23-5	E421-L	0.01	mg/L	<0.010	----
Tin, dissolved	7440-31-5	E421-L	0.00005	mg/L	<0.000050	----
Dissolved Metals (QCLot: 1696389)						
Chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 1699424)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Volatile Organic Compounds (QCLot: 1700753)						
Benzene	71-43-2	E611A	0.5	µg/L	<0.50	----
Ethylbenzene	100-41-4	E611A	0.5	µg/L	<0.50	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.5	µg/L	<0.50	----
Styrene	100-42-5	E611A	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611A	0.5	µg/L	<0.50	----
Xylene, m+p-	179601-23-1	E611A	0.4	µg/L	<0.40	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1700753) - continued						
Xylene, o-	95-47-6	E611A	0.3	µg/L	<0.30	----
Hydrocarbons (QCLot: 1695697)						
F2 (C10-C16)	----	E601	100	µg/L	<100	----
F3 (C16-C34)	----	E601	250	µg/L	<250	----
F4 (C34-C50)	----	E601	250	µg/L	<250	----
Hydrocarbons (QCLot: 1700752)						
F1 (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1694778)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1694779)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	96.5	90.0	110	----
Physical Tests (QCLot: 1694780)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	111	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1696626)									
Turbidity	----	E121	0.1	NTU	200 NTU	96.0	85.0	115	----
Physical Tests (QCLot: 1699649)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	94.3	85.0	115	----
Physical Tests (QCLot: 1699661)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1693839)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	112	80.0	120	----
Anions and Nutrients (QCLot: 1693905)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	113	80.0	120	----
Anions and Nutrients (QCLot: 1694784)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.0	90.0	110	----
Anions and Nutrients (QCLot: 1694786)									
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.1	90.0	110	----
Anions and Nutrients (QCLot: 1694787)									
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	1 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 1694788)									
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	2.5 mg/L	97.6	90.0	110	----
Anions and Nutrients (QCLot: 1694789)									
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1694790)									
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	98.8	90.0	110	----
Anions and Nutrients (QCLot: 1694792)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	96.4	80.0	120	----
Anions and Nutrients (QCLot: 1695672)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1695672) - continued									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1696584)									
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	0.05 mg/L	101	80.0	120	----
Anions and Nutrients (QCLot: 1696591)									
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	0.05 mg/L	101	80.0	120	----
Anions and Nutrients (QCLot: 1697385)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1697388)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100.0	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1697386)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	100.0	80.0	120	----
Total Metals (QCLot: 1694966)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	100	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	97.7	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	93.4	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	104	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	106	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	99.1	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	100	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	100	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	95.2	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	95.0	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	96.6	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	99.4	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	96.3	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	101	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	97.4	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	90.7	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	96.8	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	98.9	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	106	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1694966) - continued									
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	96.2	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	110	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	99.1	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	93.5	80.0	120	----
Total Metals (QCLot: 1694967)									
Arsenic, total	7440-38-2	E420-L	0.00003	mg/L	1 mg/L	105	80.0	120	----
Cobalt, total	7440-48-4	E420-L	0.00005	mg/L	0.25 mg/L	98.3	80.0	120	----
Copper, total	7440-50-8	E420-L	0.00015	mg/L	0.25 mg/L	98.6	80.0	120	----
Iron, total	7439-89-6	E420-L	0.005	mg/L	1 mg/L	100	80.0	120	----
Lead, total	7439-92-1	E420-L	0.00003	mg/L	0.5 mg/L	105	80.0	120	----
Nickel, total	7440-02-0	E420-L	0.0001	mg/L	0.5 mg/L	98.3	80.0	120	----
Sodium, total	7440-23-5	E420-L	0.03	mg/L	50 mg/L	100	80.0	120	----
Tin, total	7440-31-5	E420-L	0.00005	mg/L	0.5 mg/L	97.4	80.0	120	----
Zinc, total	7440-66-6	E420-L	0.0015	mg/L	0.5 mg/L	93.2	80.0	120	----
Total Metals (QCLot: 1694968)									
Chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	97.7	80.0	120	----
Total Metals (QCLot: 1700878)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	97.2	80.0	120	----
Dissolved Metals (QCLot: 1696387)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	105	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	92.7	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	102	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	100	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	96.6	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.9	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	94.0	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	103	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	103	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	97.1	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.4	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	105	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1696387) - continued									
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	92.0	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	107	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	93.6	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	108	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	94.0	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	94.3	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	94.3	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	97.3	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	93.5	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	99.0	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	99.6	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	97.0	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	98.1	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	94.8	80.0	120	----
Dissolved Metals (QCLot: 1696388)									
Arsenic, dissolved	7440-38-2	E421-L	0.00003	mg/L	1 mg/L	106	80.0	120	----
Boron, dissolved	7440-42-8	E421-L	0.005	mg/L	1 mg/L	115	80.0	120	----
Cobalt, dissolved	7440-48-4	E421-L	0.00005	mg/L	0.25 mg/L	96.8	80.0	120	----
Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	0.25 mg/L	97.0	80.0	120	----
Iron, dissolved	7439-89-6	E421-L	0.005	mg/L	1 mg/L	92.9	80.0	120	----
Lead, dissolved	7439-92-1	E421-L	0.00003	mg/L	0.5 mg/L	97.1	80.0	120	----
Nickel, dissolved	7440-02-0	E421-L	0.0001	mg/L	0.5 mg/L	97.4	80.0	120	----
Sodium, dissolved	7440-23-5	E421-L	0.01	mg/L	50 mg/L	108	80.0	120	----
Tin, dissolved	7440-31-5	E421-L	0.00005	mg/L	0.5 mg/L	97.8	80.0	120	----
Dissolved Metals (QCLot: 1696389)									
Chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	98.6	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	100	80.0	120	----
Volatile Organic Compounds (QCLot: 1700753)									
Benzene	71-43-2	E611A	0.5	µg/L	100 µg/L	91.9	70.0	130	----
Ethylbenzene	100-41-4	E611A	0.5	µg/L	100 µg/L	86.0	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.5	µg/L	100 µg/L	98.8	70.0	130	----
Styrene	100-42-5	E611A	0.5	µg/L	100 µg/L	91.6	70.0	130	----
Toluene	108-88-3	E611A	0.5	µg/L	100 µg/L	82.8	70.0	130	----
Xylene, m+p-	179601-23-1	E611A	0.4	µg/L	200 µg/L	87.6	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1700753) - continued									
Xylene, o-	95-47-6	E611A	0.3	µg/L	100 µg/L	85.3	70.0	130	----
Hydrocarbons (QCLot: 1695697)									
F2 (C10-C16)	----	E601	100	µg/L	3540 µg/L	109	70.0	130	----
F3 (C16-C34)	----	E601	250	µg/L	7050 µg/L	94.8	70.0	130	----
F4 (C34-C50)	----	E601	250	µg/L	5050 µg/L	116	70.0	130	----
Hydrocarbons (QCLot: 1700752)									
F1 (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	98.4	70.0	130	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1693839)										
YL2401594-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0707 mg/L	0.067 mg/L	106	70.0	130	----
Anions and Nutrients (QCLot: 1693905)										
FC2402744-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1694784)										
YL2401671-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.496 mg/L	0.5 mg/L	99.3	75.0	125	----
Anions and Nutrients (QCLot: 1694786)										
YL2401666-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	1010 mg/L	1000 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1694787)										
YL2401666-001	Anonymous	Fluoride	16984-48-8	E235.F-L	10.3 mg/L	10 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1694788)										
YL2401666-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	25.0 mg/L	25 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1694789)										
YL2401666-001	Anonymous	Bromide	24959-67-9	E235.Br-U	5.16 mg/L	5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1694790)										
YL2401666-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	1000 mg/L	1000 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1694792)										
YL2401666-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0322 mg/L	0.03 mg/L	107	70.0	130	----
Anions and Nutrients (QCLot: 1695672)										
YL2401662-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.2 mg/L	10 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1696584)										
YL2401589-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0594 mg/L	0.05 mg/L	119	70.0	130	----
Anions and Nutrients (QCLot: 1696591)										
YL2401589-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0626 mg/L	0.05 mg/L	125	70.0	130	----
Anions and Nutrients (QCLot: 1697385)										
FJ2403039-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.51 mg/L	2.5 mg/L	100	70.0	130	----
Anions and Nutrients (QCLot: 1697388)										
FJ2403039-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0945 mg/L	0.1 mg/L	94.5	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1697386)										
FJ2403039-002	Anonymous	Carbon, total organic [TOC]	----	E355-L	5.26 mg/L	5 mg/L	105	70.0	130	----
Total Metals (QCLot: 1694966)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1694966) - continued										
YL2401666-001	Anonymous	Aluminum, total	7429-90-5	E420	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0393 mg/L	0.04 mg/L	98.4	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00969 mg/L	0.01 mg/L	96.9	70.0	130	----
		Boron, total	7440-42-8	E420	ND mg/L	----	ND	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00389 mg/L	0.004 mg/L	97.2	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0103 mg/L	0.01 mg/L	103	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0957 mg/L	0.1 mg/L	95.7	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	ND mg/L	----	ND	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		Silicon, total	7440-21-3	E420	9.29 mg/L	10 mg/L	92.9	70.0	130	----
		Silver, total	7440-22-4	E420	0.00416 mg/L	0.004 mg/L	104	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	----	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00387 mg/L	0.004 mg/L	96.8	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0217 mg/L	0.02 mg/L	109	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0405 mg/L	0.04 mg/L	101	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00412 mg/L	0.004 mg/L	103	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
Total Metals (QCLot: 1694967)										
YL2401666-001	Anonymous	Arsenic, total	7440-38-2	E420-L	0.0214 mg/L	0.02 mg/L	107	70.0	130	----
		Cobalt, total	7440-48-4	E420-L	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Copper, total	7440-50-8	E420-L	0.0185 mg/L	0.02 mg/L	92.7	70.0	130	----
		Iron, total	7439-89-6	E420-L	2.01 mg/L	2 mg/L	100	70.0	130	----
		Lead, total	7439-92-1	E420-L	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		Nickel, total	7440-02-0	E420-L	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----
		Sodium, total	7440-23-5	E420-L	ND mg/L	----	ND	70.0	130	----
		Tin, total	7440-31-5	E420-L	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Zinc, total	7440-66-6	E420-L	0.359 mg/L	0.4 mg/L	89.8	70.0	130	----
Total Metals (QCLot: 1694968)										
YL2401666-001	Anonymous	Chromium, total	7440-47-3	E420.Cr-L	0.0400 mg/L	0.04 mg/L	99.9	70.0	130	----
Total Metals (QCLot: 1700878)										
YL2401661-005	Anonymous	Mercury, total	7439-97-6	E508	0.0000967 mg/L	0 mg/L	96.7	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1696387)										
YL2401666-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.200 mg/L	0.2 mg/L	99.9	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0380 mg/L	0.04 mg/L	95.1	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00871 mg/L	0.01 mg/L	87.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00385 mg/L	0.004 mg/L	96.2	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00950 mg/L	0.01 mg/L	95.0	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0959 mg/L	0.1 mg/L	95.9	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	ND mg/L	----	ND	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0381 mg/L	0.04 mg/L	95.2	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.68 mg/L	10 mg/L	96.8	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00402 mg/L	0.004 mg/L	100	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	ND mg/L	----	ND	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0382 mg/L	0.04 mg/L	95.5	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00360 mg/L	0.004 mg/L	90.1	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00393 mg/L	0.004 mg/L	98.2	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.372 mg/L	0.4 mg/L	93.0	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0414 mg/L	0.04 mg/L	103	70.0	130	----
Dissolved Metals (QCLot: 1696388)										
YL2401666-001	Anonymous	Arsenic, dissolved	7440-38-2	E421-L	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		Boron, dissolved	7440-42-8	E421-L	ND mg/L	----	ND	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421-L	0.0184 mg/L	0.02 mg/L	91.8	70.0	130	----
		Copper, dissolved	7440-50-8	E421-L	0.0180 mg/L	0.02 mg/L	89.8	70.0	130	----
		Iron, dissolved	7439-89-6	E421-L	1.91 mg/L	2 mg/L	95.6	70.0	130	----
		Lead, dissolved	7439-92-1	E421-L	0.0184 mg/L	0.02 mg/L	92.2	70.0	130	----
		Nickel, dissolved	7440-02-0	E421-L	0.0350 mg/L	0.04 mg/L	87.4	70.0	130	----
		Sodium, dissolved	7440-23-5	E421-L	ND mg/L	----	ND	70.0	130	----
		Tin, dissolved	7440-31-5	E421-L	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
Dissolved Metals (QCLot: 1696389)										
YL2401666-001	Anonymous	Chromium, dissolved	7440-47-3	E421.Cr-L	0.0387 mg/L	0.04 mg/L	96.8	70.0	130	----
Dissolved Metals (QCLot: 1699424)										
YL2401665-001	SNP-08	Mercury, dissolved	7439-97-6	E509	0.0000959 mg/L	0 mg/L	95.9	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1700753)										
KS2404017-001	Anonymous	Benzene	71-43-2	E611A	89.9 µg/L	100 µg/L	89.9	60.0	140	----
		Ethylbenzene	100-41-4	E611A	86.6 µg/L	100 µg/L	86.6	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	98.6 µg/L	100 µg/L	98.6	60.0	140	----
		Styrene	100-42-5	E611A	91.9 µg/L	100 µg/L	91.9	60.0	140	----
		Toluene	108-88-3	E611A	83.3 µg/L	100 µg/L	83.3	60.0	140	----
		Xylene, m+p-	179601-23-1	E611A	175 µg/L	200 µg/L	87.5	60.0	140	----
		Xylene, o-	95-47-6	E611A	86.3 µg/L	100 µg/L	86.3	60.0	140	----
Hydrocarbons (QCLot: 1700752)										
KS2404127-001	Anonymous	F1 (C6-C10)	----	E581.VH+F1	5240 µg/L	6310 µg/L	83.0	60.0	140	----

SASKATCHEWAN RESEARCH COUNCIL

Environmental Analytical Laboratories
143-111 Research Drive, Saskatoon, SK Canada S7N 3R2

T: 306-933-6932 **F:** 306-933-7922
Toll-free: 1-800-240-8808
E: analytical@src.sk.ca

www.src.sk.ca/analytical

Test Report

SRC Group # 2024-12781

Oct 18, 2024

ALS
314 Old Airport Road, Unit 116
Yellowknife, NT X1A 3T3
Attn: Oliver Gregg

Date Samples Received: Oct-08-2024 Client P.O.: YL2401665

All results have been reviewed and approved by a Qualified Person in accordance with the Saskatchewan Environmental Code, Corrective Action Plan Chapter, for the purposes of certifying a laboratory analysis

Results from Lab Section 4 approved by Snook, Vicky
Results from Lab Section 2 approved by Britton, Stephanie

Test methods and data are validated by the laboratory's Quality Assurance Program.

Routine methods follow recognized procedures from sources such as
- -Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF
- -Environment Canada
- -US EPA
- -CANMET

The results reported relate only to the test samples as provided by the client. Results apply to the sample as received, unless otherwise indicated.

Data marked as "by Client" has been provided by the client and may affect the validity of results.

Samples will be kept for 30 days after the final report is sent. Please contact the lab if you have any special requirements.

Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Analytes denoted with * are accredited by CALA to ISO/IEC 17025:2017.

Additional information is available upon request.

This is a final report.

SASKATCHEWAN RESEARCH COUNCIL
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Test Report

SRC Group # 2024-12781

Oct 18, 2024

ALS
314 Old Airport Road, Unit 116
Yellowknife, NT X1A 3T3
Attn : Oliver Gregg

Date Samples Received: Oct-08-2024 Client P.O.: YL2401665
SRC Lab # 36123 Sample Type: WATER

10/02/2024 11:41 SNP-08 YL2401665-001

Analyte Name	Units	Results	Unconditional Release Limit
Uranium-234 calculated	Bq/L	0.091	none set
Uranium-235 calculated	Bq/L	0.0046	none set
Uranium-238 calculated	Bq/L	0.091	10
Radium-228*	Bq/L	<0.9	5
Thorium-228	Bq/L	<0.3	1
Thorium-234*	Bq/L	<4	10
Thorium-230*	Bq/L	<20	5
Radium-226*	Bq/L	<7	5
Lead-210*	Bq/L	<4	1
Potassium-40*	Bq/L	<5	none set

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 3.3 °C upon receipt.

Sample preparation and Analysis Method

A 500 mL aliquot of each sample was measured into a standard Marinelli beaker, sealed with tape, and a high resolution gamma ray spectrometric measurement was performed using a hyperpure Ge detector housed in a 10cm lead castle.

Gamma Spectroscopy (Rad-300) detection limits vary and are influenced by several factors. "Less than" values reported above represent the lowest detection limits achievable for the sample.

Radium 228 and Thorium 228 are not directly detected by Gamma spectroscopy, instead, they are inferred from Actinium 228 and Lead 212.

Concentrations of Uranium were determined by Inductively Coupled Plasma Mass Spectrometry (ICP-MS). The activity of Uranium-234, Uranium-235 and Uranium-238 were calculated from the ICP-MS results based on natural abundance.

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Test Report

SRC Group # 2024-12781

Oct 18, 2024

Sum of Ratios = 10

This sample exceeds the unconditional derived release limits for diffuse NORM sources for one or more isotopes set by the Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials table 5.1.

SASKATCHEWAN RESEARCH COUNCIL

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Test Report

SRC Group # 2024-12781

Oct 18, 2024

Analyte Methods

Name	Units	Method
Uranium-234 calculated	Bq/L	Chm-522
Uranium-235 calculated	Bq/L	Chm-522
Uranium-238 calculated	Bq/L	Chm-522
Potassium-40	Bq/L	Rad-300
Lead-210	Bq/L	Rad-300
Radium-226	Bq/L	Rad-300
Radium-228	Bq/L	Rad-300
Thorium-228	Bq/L	Rad-300
Thorium-230	Bq/L	Rad-300
Thorium-234	Bq/L	Rad-300

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 20241002/ 02

Report To	Contact and company name below will appear on the final report
Company:	DeBeers Gahcho Kué
Contact:	Dave Ott/Michelle Burger
Phone:	867-679-5812/5814
	Company address below will appear on the final report
Street:	5120 49th Street Suite 300
City/Province:	Yellowknife, NT
Postal Code:	X1A 3S8

Report Format / Distribution

Select Report Format: Quality Control (QC) Report with Report

Select Distribution:

Email 1 or Fax: Environment.GahchoKue@debeersgroup.com
Email 2: Dave.Ott@debeersgroup.com
Email 3: Michelle.Burger@debeersgroup.com

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days): 4 day [P4-20%]; 3 day [P3-25%]; 2 day [P2-50%]

EMERGENCY: 1 Business day [E - 100%]; Same Day. Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]

Date and time Required for all E&P TAT: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To	Yes	No
	Copy of Invoice with Report	Yes	No
Company:	DeBeers Group		
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8		

Invoice Distribution

Select Invoice Distribution:
Email 1 or Fax: ap.invoices@debeersgroup.com
Email 2: Mason.Elwood@debeersgroup.com

Project Information

ALS Account # / Quote #:
Job #: SNP-08 Monthly
PO / AFE: 4100968747
LSD:

Oil and Gas Required Fields (client use)

Approver ID: | Cost Center:
GL Account: | Routing Code:
Activity Code:
Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg | Sampler: J. Vornbrock

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical Parameters	Major Ions	Total Nutrients	Dissolved Nutrients	Total Metals	Dissolved Metals	Total Mercury	Dissolved Mercury	BTEX	Total Petroleum Hydrocarbons	Radionuclides				SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
								P				P		P	P	P					
	SNP-08	2-Oct-24	10:41	Water	16	R	R	R	R	R	R	R	R	R	R	R					

Environmental Division
Yellowknife
Work Order Reference
YL2401665

Telephone : +1 867 873 5593

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

Are samples for human drinking water use?

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
10.3							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: J. Vornbrock	Date: 2-Oct-24	Time:	Received by: NA	Date: Oct 3/24	Time: 12:10	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0328e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241002/ 02

Date: October 2, 2024

Sample Date	2-Oct-24				
Sample Name	SNP-08				
Physical Parameters — Rush (Y/N)	N				
Conductivity	X				
pH	X				
Total Suspended Solids (Ultra Low)	X				
Turbidity	X				
Major Ions — Rush (Y/N)	N				
Alkalinity, Bicarbonate (as CaCO3)	X				
Alkalinity, Carbonate (as CaCO3)	X				
Alkalinity, Hydroxide (as CaCO3)	X				
Alkalinity, Total (as CaCO3)	X				
Hardness (as CaCO3)	X				
Calcium	X				
Magnesium	X				
Potassium	X				
Sodium	X				
Chloride (Cl)	X				
Fluoride (F)	X				
Total Dissolved Solids (SNP-07)	X				
Sulphate (SO4)	X				
Reactive Silicate	X				
Nutrients — Rush (Y/N)	N				
Lab to Filter Dissolved Nutrients	X				
Ammonia, Total (as N)	X				
Nitrate and Nitrite (as N)	X				
Nitrate (as N)	X				
Nitrite (as N)	X				
Total Kjeldahl Nitrogen	X				
Orthophosphate-Dissolved (as P)	X				
Phosphorus (P)-Total Dissolved	X				
Phosphorus (P)-Total	X				
Phosphorus (P)-Dissolved Organic	X				
Phosphorus (P)-Total Inorganic	X				
Phosphorus (P)-Dissolved Inorganic	X				
Total Organic Carbon	X				
Aggregate Organics — Rush (Y/N)					
Biochemical Oxygen Demand (SNP-07)					
Oil and Grease (SNP-07)					
Metals — Rush (Y/N)	N				
Lab to Filter Dissolved Metals	X				
Total Metals (preserved with HNO3)	X				
Dissolved Metals (not preserved)	X				

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Rubidium, Selenium, Silver, Strontium, Thallium, Titanium, Uranium, Vanadium, Zinc.

Speciated Metals — Rush (Y/N)	N				
Hydrocarbons and VOCs — Rush (Y/N)	N				
BTEX, F1-F4	X				
Total Petroleum Hydrocarbons	X				
Bacteria — Rush (Y/N)					
Total Coliforms, Fecal Coliforms, and E. coli					
Radionuclides (SNP-08/09/10) — Rush (Y/N)	N				
Uranium and Thorium	X				
Radium-226 (if U & Th leach to grndwtr)					

ALS Canada Ltd.

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CERTIFICATE OF ANALYSIS

Work Order	: **YL2401667**		
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Edmonton
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife Northwest Territories Canada X1A 1P8	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-10 MONTHLY	Date Samples Received	: 03-Oct-2024 12:10
PO	: 4100968747	Date Analysis Commenced	: 07-Oct-2024
C-O-C number	: 20241002/ 01	Issue Date	: 21-Oct-2024 15:39
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Daniel Shabestani	Lab Assistant	Metals, Burnaby, British Columbia
Janice Leung	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Maya Urquhart	Lab Analyst	Metals, Burnaby, British Columbia
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Oliver Gregg	Client Services Supervisor	External Subcontracting, Saskatoon, Saskatchewan
Owen Cheng		Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units
µS/cm	microsiemens per centimetre
-	no units
Bq/L	becquerels per litre
µg/L	micrograms per litre

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
SFP	Sample was filtered and preserved at the laboratory.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-10	----	----	----	----
				Client sampling date / time	02-Oct-2024 10:21	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401667-001	----	----	----	----
					Result	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	151	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	151	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	2260	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	888	----	----	----	----
pH	----	E108/VA	0.10	pH units	7.72	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	2000	----	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	9.9	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	6.76	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	8.96	----	----	----	----
Bromide	24959-67-9	E235.Br-U/VA	0.0500	mg/L	5.05	----	----	----	----
Chloride	16887-00-6	E235.Cl-L/VA	0.50	mg/L	416	----	----	----	----
Fluoride	16984-48-8	E235.F-L/VA	0.020	mg/L	0.783	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	10.1	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-T/VA	0.0030	mg/L	21.6	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/VA	0.0032	mg/L	22.6	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0050	mg/L	1.02	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-10	----	----	----	----
				Client sampling date / time	02-Oct-2024 10:21	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401667-001	----	----	----	----
					Result	----	----	----	----
Anions and Nutrients									
Phosphorus, dissolved inorganic	----	E377-L/EO	0.0010	mg/L	<0.0010	----	----	----	----
Phosphorus, dissolved organic	----	EC377-L.ORG/EO	0.0020	mg/L	<0.0020	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0182	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	<0.0010 SFP	----	----	----	----
Phosphorus, total inorganic	----	E376-L/EO	0.0010	mg/L	0.0158	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	10.7	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4-L/VA	0.300	mg/L	327	----	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	2.86	----	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.169	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	0.00020	----	----	----	----
Arsenic, total	7440-38-2	E420-L/VA	0.000030	mg/L	0.000466	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.0560	----	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L	<0.000020	----	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	----	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L	0.580	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	<0.0000150 DLM	----	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	208	----	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000211	----	----	----	----
Chromium, total	7440-47-3	E420.Cr-L/VA	0.00010	mg/L	0.00033	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-10	----	----	----	----
				Client sampling date / time	02-Oct-2024 10:21	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401667-001	----	----	----	----
					Result	----	----	----	----
Total Metals									
Cobalt, total	7440-48-4	E420-L/VA	0.000050	mg/L	0.000710	----	----	----	----
Copper, total	7440-50-8	E420-L/VA	0.00015	mg/L	0.00452	----	----	----	----
Iron, total	7439-89-6	E420-L/VA	0.0050	mg/L	0.289	----	----	----	----
Lead, total	7439-92-1	E420-L/VA	0.000030	mg/L	0.000066	----	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0738	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	77.9	----	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.133	----	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.0512	----	----	----	----
Nickel, total	7440-02-0	E420-L/VA	0.00010	mg/L	0.0105	----	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	20.8	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.0224	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	0.000149	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	5.45	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----
Sodium, total	7440-23-5	E420-L/VA	0.030	mg/L	93.2	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	2.66	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	120	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	0.00057	----	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00030 DLM	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-10	----	----	----	----
				Client sampling date / time	02-Oct-2024 10:21	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401667-001	----	----	----	----
					Result	----	----	----	----
Total Metals									
Tin, total	7440-31-5	E420-L/VA	0.000050	mg/L	<0.000050	----	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	0.00195	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	0.00133	----	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.0298	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	0.00135	----	----	----	----
Zinc, total	7440-66-6	E420-L/VA	0.0015	mg/L	<0.0015	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	0.00081	----	----	----	----
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0048	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	0.00019	----	----	----	----
Arsenic, dissolved	7440-38-2	E421-L/VA	0.000030	mg/L	0.000455	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.0579	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L	<0.000020	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	----	----	----	----
Boron, dissolved	7440-42-8	E421-L/VA	0.0050	mg/L	0.594	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	<0.0000100 DLM	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	207	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000193	----	----	----	----
Chromium, dissolved	7440-47-3	E421.Cr-L/VA	0.00010	mg/L	<0.00010	----	----	----	----
Cobalt, dissolved	7440-48-4	E421-L/VA	0.000050	mg/L	0.000633	----	----	----	----
Copper, dissolved	7440-50-8	E421-L/VA	0.00015	mg/L	0.00480	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-10	----	----	----	----
				Client sampling date / time	02-Oct-2024 10:21	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401667-001	----	----	----	----
					Result	----	----	----	----
Dissolved Metals									
Iron, dissolved	7439-89-6	E421-L/VA	0.0050	mg/L	0.0581	----	----	----	----
Lead, dissolved	7439-92-1	E421-L/VA	0.000030	mg/L	<0.000030	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.0750	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	90.1	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.140	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.0495	----	----	----	----
Nickel, dissolved	7440-02-0	E421-L/VA	0.00010	mg/L	0.00995	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	23.4	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.0240	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	0.000160	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	5.21	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	----	----	----	----
Sodium, dissolved	7440-23-5	E421-L/VA	0.010	mg/L	118	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	118	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	2.70	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	117	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	0.00027	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	<0.000010	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----
Tin, dissolved	7440-31-5	E421-L/VA	0.000050	mg/L	<0.000050	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-10	----	----	----	----
				Client sampling date / time	02-Oct-2024 10:21	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401667-001	----	----	----	----
					Result	----	----	----	----
Dissolved Metals									
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	<0.00030	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	0.00133	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.0294	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	0.00076	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	<0.0010	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L	<0.00030	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-	Laboratory	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Laboratory	----	----	----	----
Volatile Organic Compounds [Fuels]									
Benzene	71-43-2	E611A/VA	0.00050	mg/L	0.0198	----	----	----	----
Ethylbenzene	100-41-4	E611A/VA	0.00050	mg/L	0.00091	----	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Styrene	100-42-5	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Toluene	108-88-3	E611A/VA	0.00050	mg/L	0.00609	----	----	----	----
Xylene, m+p-	179601-23-1	E611A/VA	0.00050	mg/L	0.00138	----	----	----	----
Xylene, o-	95-47-6	E611A/VA	0.00050	mg/L	0.00114	----	----	----	----
Xylenes, total	1330-20-7	E611A/VA	0.00075	mg/L	0.00252	----	----	----	----
Hydrocarbons									
F1 (C6-C10)	----	E581.VH+F1/VA	0.10	mg/L	<0.10	----	----	----	----
F1-BTEX	----	EC580/VA	0.100	mg/L	<0.100	----	----	----	----
F2 (C10-C16)	----	E601/VA	0.10	mg/L	<0.10	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-10	----	----	----	----
				Client sampling date / time	02-Oct-2024 10:21	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401667-001	----	----	----	----
					Result	----	----	----	----
Hydrocarbons									
F3 (C16-C34)	----	E601/VA	0.25	mg/L	<0.25	----	----	----	----
F4 (C34-C50)	----	E601/VA	0.25	mg/L	<0.25	----	----	----	----
Hydrocarbons, total (C6-C50)	n/a	EC581/VA	0.40	mg/L	<0.40	----	----	----	----
TEH (C10-C50)	n/a	E601/VA	0.40	mg/L	<0.40	----	----	----	----
TEH (C16-C50)	----	E601/VA	0.40	mg/L	<0.40	----	----	----	----
Hydrocarbons Surrogates									
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	E601/VA	1.0	%	86.5	----	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%	81.8	----	----	----	----
Volatile Organic Compounds Surrogates									
Bromofluorobenzene, 4-	460-00-4	E611A/VA	1.0	%	92.2	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611A/VA	1.0	%	103	----	----	----	----
Radiological Parameters									
Thorium-234	15065-10-8	NORMS/2I	4	Bq/L	<4	----	----	----	----
Thorium-230	14269-63-7	NORMS/2I	30	Bq/L	<30	----	----	----	----
Thorium-228	14274-82-9	NORMS/2I	0.4	Bq/L	<0.4	----	----	----	----
Uranium-238	7440-61-1	U-238/2I	0.001	Bq/L	0.30	----	----	----	----
Uranium-234	13966-29-5	U-234/2I	0.001	Bq/L	0.30	----	----	----	----
Uranium-235	15117-96-1	U-235/2I	0.00006	Bq/L	0.015	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

ALS Canada Ltd.

right solutions. right partner.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2401667**	Page	: 1 of 17
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-10 MONTHLY	Date Samples Received	: 03-Oct-2024 12:10
PO	: 4100968747	Issue Date	: 21-Oct-2024 15:29
C-O-C number	: 20241002/ 01		
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-10	E298	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	09-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-10	E235.Br-U	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-10	E235.Cl-L	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-10	E377-L	02-Oct-2024	08-Oct-2024	3 days	6 days	× EHT	10-Oct-2024	28 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE SNP-10	E378-U	02-Oct-2024	07-Oct-2024	3 days	5 days	× EHT	07-Oct-2024	3 days	5 days	× EHT
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE SNP-10	E235.F-L	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE SNP-10	E235.NO3-T	02-Oct-2024	07-Oct-2024	3 days	5 days	× EHT	07-Oct-2024	3 days	5 days	× EHT

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-10	E235.NO2-L	02-Oct-2024	07-Oct-2024	3 days	5 days	✗ EHT	07-Oct-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP-10	E392	02-Oct-2024	----	----	----		07-Oct-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE										
SNP-10	E235.SO4-L	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-10	E375-U	02-Oct-2024	07-Oct-2024	3 days	5 days	✗ EHT	07-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-10	E376-L	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	10-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
SNP-10	E318	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	09-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-10	E372-S	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved)										
SNP-10	E421.Cr-L	02-Oct-2024	08-Oct-2024	180 days	6 days	✓	08-Oct-2024	180 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SNP-10	E509	02-Oct-2024	09-Oct-2024	28 days	7 days	✓	09-Oct-2024	28 days	7 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis: Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)										
HDPE - dissolved (lab preserved) SNP-10	E421-L	02-Oct-2024	08-Oct-2024	180 days	6 days	✓	09-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) SNP-10	E421	02-Oct-2024	08-Oct-2024	180 days	6 days	✓	09-Oct-2024	180 days	7 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) SNP-10	E601	02-Oct-2024	08-Oct-2024	14 days	6 days	✓	08-Oct-2024	40 days	1 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate) SNP-10	E581.VH+F1	02-Oct-2024	09-Oct-2024	14 days	8 days	✓	10-Oct-2024	14 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) SNP-10	E355-L	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	09-Oct-2024	28 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SNP-10	E290	02-Oct-2024	07-Oct-2024	14 days	5 days	✓	07-Oct-2024	14 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP-10	E100	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Physical Tests : pH by Meter										
HDPE SNP-10	E108	02-Oct-2024	07-Oct-2024	0.25 hrs	124 hrs	✗ EHTR-FM	07-Oct-2024	0.25 hrs	125 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SNP-10	E162	02-Oct-2024	----	----	----		09-Oct-2024	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-10	E160-L	02-Oct-2024	----	----	----		09-Oct-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE SNP-10	E121	02-Oct-2024	----	----	----		08-Oct-2024	3 days	6 days	× EHT
Radiological Parameters : NORMS (Ra-226/228,Th-228/230/234,Pb-210,K-40) by Gamma Spectroscopy in Water										
HDPE (nitric acid) SNP-10	NORMS	02-Oct-2024	----	----	----		15-Oct-2024	----	----	
Radiological Parameters : Uranium 234 in Water										
HDPE (nitric acid) SNP-10	U-234	02-Oct-2024	----	----	----		16-Oct-2024	----	14 days	
Radiological Parameters : Uranium 235 in Water										
HDPE (nitric acid) SNP-10	U-235	02-Oct-2024	----	----	----		16-Oct-2024	----	14 days	
Radiological Parameters : Uranium 238										
HDPE (nitric acid) SNP-10	U-238	02-Oct-2024	----	----	----		16-Oct-2024	----	14 days	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) SNP-10	E420.Cr-L	02-Oct-2024	08-Oct-2024	180 days	6 days	✓	08-Oct-2024	180 days	7 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) SNP-10	E508	02-Oct-2024	10-Oct-2024	28 days	8 days	✓	10-Oct-2024	28 days	8 days	✓
Total Metals : Total Metals by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) SNP-10	E420-L	02-Oct-2024	08-Oct-2024	180 days	6 days	✓	08-Oct-2024	180 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP-10	E420	02-Oct-2024	08-Oct-2024	180 days	6 days	✓	09-Oct-2024	180 days	7 days	✓
Volatile Organic Compounds : BTEX by Headspace GC-MS										
Glass vial (sodium bisulfate)										
SNP-10	E611A	02-Oct-2024	09-Oct-2024	14 days	8 days	✓	10-Oct-2024	14 days	8 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1694780	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	1697388	1	19	5.2	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1694789	1	4	25.0	5.0	✓
BTEX by Headspace GC-MS	E611A	1700753	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1694786	1	4	25.0	5.0	✓
Conductivity in Water	E100	1694779	1	16	6.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1696389	1	4	25.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1696584	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1699424	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1696387	1	12	8.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1696388	1	4	25.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1694792	1	6	16.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1694787	1	4	25.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1694788	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1694784	1	19	5.2	5.0	✓
pH by Meter	E108	1694778	1	19	5.2	5.0	✓
Reactive Silica by Colourimetry	E392	1695672	1	17	5.8	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1694790	1	4	25.0	5.0	✓
TDS by Gravimetry	E162	1699661	1	13	7.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1694968	1	4	25.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1693839	1	15	6.6	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1696591	1	13	7.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1697385	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	1700878	1	11	9.0	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1694967	1	4	25.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1694966	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1697386	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1693905	1	18	5.5	5.0	✓
Turbidity by Nephelometry	E121	1696626	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1700752	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1694780	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	1697388	1	19	5.2	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1694789	1	4	25.0	5.0	✓
BTEX by Headspace GC-MS	E611A	1700753	1	20	5.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID	E601	1695697	1	13	7.6	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Chloride in Water by IC (Low Level)	E235.Cl-L	1694786	1	4	25.0	5.0	✓
Conductivity in Water	E100	1694779	1	16	6.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1696389	1	4	25.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1696584	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1699424	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1696387	1	12	8.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1696388	1	4	25.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1694792	1	6	16.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1694787	1	4	25.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1694788	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1694784	1	19	5.2	5.0	✓
pH by Meter	E108	1694778	1	19	5.2	5.0	✓
Reactive Silica by Colourimetry	E392	1695672	1	17	5.8	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1694790	1	4	25.0	5.0	✓
TDS by Gravimetry	E162	1699661	1	13	7.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1694968	1	4	25.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1693839	1	15	6.6	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1696591	1	13	7.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1697385	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	1700878	1	11	9.0	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1694967	1	4	25.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1694966	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1697386	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1693905	1	18	5.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1699649	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1696626	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1700752	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1694780	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	1697388	1	19	5.2	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1694789	1	4	25.0	5.0	✓
BTEX by Headspace GC-MS	E611A	1700753	1	20	5.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID	E601	1695697	1	13	7.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1694786	1	4	25.0	5.0	✓
Conductivity in Water	E100	1694779	1	16	6.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1696389	1	4	25.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1696584	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1699424	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1696387	1	12	8.3	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB) - Continued							
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1696388	1	4	25.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1694792	1	6	16.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1694787	1	4	25.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1694788	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1694784	1	19	5.2	5.0	✓
Reactive Silica by Colourimetry	E392	1695672	1	17	5.8	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1694790	1	4	25.0	5.0	✓
TDS by Gravimetry	E162	1699661	1	13	7.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1694968	1	4	25.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1693839	1	15	6.6	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1696591	1	13	7.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1697385	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	1700878	1	11	9.0	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1694967	1	4	25.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1694966	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1697386	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1693905	1	18	5.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1699649	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1696626	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1700752	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1697388	1	19	5.2	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1694789	1	4	25.0	5.0	✓
BTEX by Headspace GC-MS	E611A	1700753	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1694786	1	4	25.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1696389	1	4	25.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1696584	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1699424	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1696387	1	12	8.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1696388	1	4	25.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1694792	1	6	16.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1694787	1	4	25.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1694788	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1694784	1	19	5.2	5.0	✓
Reactive Silica by Colourimetry	E392	1695672	1	17	5.8	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1694790	1	4	25.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1694968	1	4	25.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1693839	1	15	6.6	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1696591	1	13	7.6	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1697385	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	1700878	1	11	9.0	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1694967	1	4	25.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1694966	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1697386	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1693905	1	18	5.5	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1700752	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry (Low Level)	E160-L ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide by IC (Ultra Trace Level)	E235.Br-U ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC (Low Level)	E235.F-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Trace Level)	E235.NO3-T ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC (Low Level)	E235.SO4-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Total Inorganic Phosphorus is determined colourimetrically after sample has undergone H2SO4 hydrolysis
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved Inorganic Phosphorus is determined colourimetrically after H_2SO_4 hydrolysis of a sample that has been lab or field filtered through a 0.45 micron membrane filter

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Total Metals by CRC ICPMS (Low Level)	E420-L ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L ALS Environmental - Vancouver	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L ALS Environmental - Vancouver	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
VH and F1 by Headspace GC-FID	E581.VH+F1 ALS Environmental - Vancouver	Water	BC MOE Lab Manual / CCME PHC in Soil - Tier 1 (mod)	Volatile Hydrocarbons (VH and F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
CCME PHCs - F2-F4 by GC-FID	E601 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	Sample extracts are analyzed by GC-FID for CCME hydrocarbon fractions (F2-F4). Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
BTEX by Headspace GC-MS	E611A ALS Environmental - Vancouver	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Vancouver	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Phosphorus, dissolved organic (0.0014 mg/L) by calculation.	EC377-L.ORG ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved inorganic phosphorus is subtracted from total dissolved phosphorus to determine dissolved organic phosphorus.
F1-BTEX	EC580 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	F1-BTEX is calculated as follows: F1-BTEX = F1 (C6-C10) minus benzene, toluene, ethylbenzene and xylenes (BTEX).
Sum F1 to F4 (C6-C50)	EC581 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	Hydrocarbons, total (C6-C50) is the sum of CCME Fractions F1(C6-C10), F2(C10-C16), F3(C16-C34), and F4(C34-C50). F4G-sg is not used within this calculation due to overlap with other fractions.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
NORMS (Ra-226/228,Th-228/230/234,Pb-210,K-40) by Gamma Spectroscopy in Water	NORMS Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		Naturally Occurring Radioactive Materials are analyzed using a gamma spectroscopy scan. See attached report for details.
Uranium 234 in Water	U-234 Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		See attached report.
Uranium 235 in Water	U-235 Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		See attached report.
Uranium 238	U-238 Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water	See attached report	See attached report.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Digestion for Total Inorganic Phosphorus in water	EP376 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples undergo H2SO4 hydrolysis.
Digestion for Dissolved Inorganic Phosphorus in water	EP377 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then undergo H2SO4 hydrolysis.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Vancouver	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID.
PHCs and PAHs Hexane Extraction	EP601 ALS Environmental - Vancouver	Water	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.

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QUALITY CONTROL REPORT

Work Order	: **YL2401667**	Page	: 1 of 21
Client	: De Beers Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-10 MONTHLY	Date Samples Received	: 03-Oct-2024 12:10
PO	: 4100968747	Date Analysis Commenced	: 07-Oct-2024
C-O-C number	: 20241002/ 01	Issue Date	: 21-Oct-2024 15:29
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta
Dan Gebert	Laboratory Analyst	Vancouver Metals, Burnaby, British Columbia
Daniel Shabestani	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
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Monica Ko	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
Oliver Gregg	Client Services Supervisor	Saskatchewan Research Council External Subcontracting, Saskatoon, Saskatchewan
Owen Cheng		Vancouver Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1694778)											
VA24C6301-003	Anonymous	pH	----	E108	0.10	pH units	8.18	8.18	0.00%	4%	----
Physical Tests (QC Lot: 1694779)											
VA24C6301-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	373	375	0.535%	10%	----
Physical Tests (QC Lot: 1694780)											
VA24C6301-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	140	141	0.426%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	140	141	0.426%	20%	----
Physical Tests (QC Lot: 1696626)											
KS2404125-006	Anonymous	Turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1699661)											
FJ2403021-001	Anonymous	Solids, total dissolved [TDS]	----	E162	13	mg/L	138	141	2.16%	20%	----
Anions and Nutrients (QC Lot: 1693839)											
YL2401594-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1693905)											
FC2402742-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.364	0.367	0.730%	20%	----
Anions and Nutrients (QC Lot: 1694784)											
YL2401670-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1694786)											
YL2401665-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	2.00	mg/L	1410	1410	0.128%	20%	----
Anions and Nutrients (QC Lot: 1694787)											
YL2401665-001	Anonymous	Fluoride	16984-48-8	E235.F-L	0.200	mg/L	0.524	0.518	0.006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1694788)											
YL2401665-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	0.0600	mg/L	7.38	7.39	0.178%	20%	----
Anions and Nutrients (QC Lot: 1694789)											
YL2401665-001	Anonymous	Bromide	24959-67-9	E235.Br-U	0.100	mg/L	18.0	17.8	1.01%	20%	----
Anions and Nutrients (QC Lot: 1694790)											
YL2401665-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	1.00	mg/L	469	479	2.07%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 1694792)											
YL2401665-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1695672)											
VA24C6658-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1696584)											
YL2401588-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1696591)											
YL2401588-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0010	mg/L	0.136	0.134	1.58%	20%	----
Anions and Nutrients (QC Lot: 1697385)											
FJ2403038-004	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1697388)											
FJ2403038-004	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1697386)											
FJ2403038-004	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 1694966)											
YL2401665-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0060	mg/L	0.0252	0.0238	0.0014	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00020	mg/L	0.00034	0.00034	0.000006	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00020	mg/L	0.0331	0.0325	1.72%	20%	----
		Beryllium, total	7440-41-7	E420	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.020	mg/L	1.20	1.19	1.07%	20%	----
		Cadmium, total	7440-43-9	E420	0.0000200	mg/L	<0.0000200	<0.0000200	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.100	mg/L	461	454	1.45%	20%	----
		Cesium, total	7440-46-2	E420	0.000020	mg/L	0.000137	0.000140	0.000002	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0020	mg/L	0.102	0.0966	5.14%	20%	----
		Magnesium, total	7439-95-4	E420	0.0100	mg/L	95.8	94.4	1.49%	20%	----
		Manganese, total	7439-96-5	E420	0.00020	mg/L	0.0514	0.0515	0.190%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.0374	0.0383	2.43%	20%	----
		Potassium, total	7440-09-7	E420	0.100	mg/L	11.6	11.3	2.59%	20%	----
		Rubidium, total	7440-17-7	E420	0.00040	mg/L	0.0303	0.0292	3.61%	20%	----
		Selenium, total	7782-49-2	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.20	mg/L	4.62	4.63	0.275%	20%	----
		Silver, total	7440-22-4	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Strontium, total	7440-24-6	E420	0.00040	mg/L	9.71	9.67	0.388%	20%	----
		Sulfur, total	7704-34-9	E420	1.00	mg/L	178	176	1.07%	20%	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 1694966) - continued											
YL2401665-001	Anonymous	Tellurium, total	13494-80-9	E420	0.00040	mg/L	0.00120	0.00121	0.00002	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000020	mg/L	0.000106	0.000114	0.000008	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00060	mg/L	0.00078	0.00083	0.00006	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00020	mg/L	<0.00020	0.00020	0.000004	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000020	mg/L	0.00784	0.00780	0.428%	20%	----
		Vanadium, total	7440-62-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
Total Metals (QC Lot: 1694967)											
YL2401665-001	Anonymous	Arsenic, total	7440-38-2	E420-L	0.000060	mg/L	0.000602	0.000604	0.326%	20%	----
		Cobalt, total	7440-48-4	E420-L	0.000100	mg/L	0.000399	0.000389	0.000010	Diff <2x LOR	----
		Copper, total	7440-50-8	E420-L	0.00030	mg/L	0.00130	0.00129	0.000003	Diff <2x LOR	----
		Iron, total	7439-89-6	E420-L	0.0100	mg/L	0.0782	0.0779	0.0003	Diff <2x LOR	----
		Lead, total	7439-92-1	E420-L	0.000060	mg/L	<0.000060	<0.000060	0	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420-L	0.00020	mg/L	0.0466	0.0466	0.0239%	20%	----
		Sodium, total	7440-23-5	E420-L	0.060	mg/L	416	409	1.65%	20%	----
		Tin, total	7440-31-5	E420-L	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420-L	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
Total Metals (QC Lot: 1694968)											
YL2401665-001	Anonymous	Chromium, total	7440-47-3	E420.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1700878)											
YL2401661-004	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1696387)											
YL2401665-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	0.0037	0.0025	0.0012	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00032	0.00032	0.000002	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0308	0.0320	3.78%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	<0.0000100	<0.0000100	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.100	mg/L	465	475	2.10%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000020	mg/L	0.000130	0.000128	0.000002	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.101	0.110	8.42%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	103	102	1.13%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.0519	0.0521	0.466%	20%	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1696387) - continued											
YL2401665-001	Anonymous	Molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.0365	0.0377	3.14%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.100	mg/L	12.3	11.9	3.52%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00040	mg/L	0.0300	0.0305	1.71%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.100	mg/L	4.92	4.87	0.919%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.100	mg/L	494	501	1.43%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00040	mg/L	9.70	9.70	0.0373%	20%	----
		Sulfur, dissolved	7704-34-9	E421	1.00	mg/L	176	179	1.49%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00040	mg/L	0.00072	0.00073	0.000007	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000104	0.000097	0.000007	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00020	mg/L	<0.00020	0.00020	0.0000006	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00709	0.00737	3.94%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1696388)											
YL2401665-001	Anonymous	Arsenic, dissolved	7440-38-2	E421-L	0.000060	mg/L	0.000563	0.000597	0.000034	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421-L	0.0100	mg/L	1.33	1.36	2.04%	20%	----
		Cobalt, dissolved	7440-48-4	E421-L	0.000100	mg/L	0.000378	0.000391	0.000013	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421-L	0.00030	mg/L	0.00124	0.00124	0.0000007	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421-L	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421-L	0.000060	mg/L	<0.000060	<0.000060	0	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421-L	0.00020	mg/L	0.0461	0.0460	0.114%	20%	----
		Sodium, dissolved	7440-23-5	E421-L	0.020	mg/L	494	501	1.43%	20%	----
		Tin, dissolved	7440-31-5	E421-L	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1696389)											
YL2401665-001	Anonymous	Chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1699424)											
VA24C5580-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1700753)											
KS2404017-001	Anonymous	Benzene	71-43-2	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 1700753) - continued											
KS2404017-001	Anonymous	Ethylbenzene	100-41-4	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Styrene	100-42-5	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Toluene	108-88-3	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611A	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611A	0.30	µg/L	0.33	0.30	0.02	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1700752)											
KS2404017-001	Anonymous	F1 (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1694779)						
Conductivity	----	E100	1	µS/cm	1.3	----
Physical Tests (QCLot: 1694780)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1696626)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1699649)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 1699661)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1693839)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1693905)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1694784)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1694786)						
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1694787)						
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1694788)						
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	<0.0030	----
Anions and Nutrients (QCLot: 1694789)						
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1694790)						
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1694792)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1695672)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1695672) - continued						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1696584)						
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1696591)						
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1697385)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1697388)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1697386)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 1694966)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1694966) - continued						
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 1694967)						
Arsenic, total	7440-38-2	E420-L	0.00003	mg/L	<0.000030	----
Cobalt, total	7440-48-4	E420-L	0.00005	mg/L	<0.000050	----
Copper, total	7440-50-8	E420-L	0.00015	mg/L	<0.00015	----
Iron, total	7439-89-6	E420-L	0.005	mg/L	<0.0050	----
Lead, total	7439-92-1	E420-L	0.00003	mg/L	<0.000030	----
Nickel, total	7440-02-0	E420-L	0.0001	mg/L	<0.00010	----
Sodium, total	7440-23-5	E420-L	0.03	mg/L	<0.030	----
Tin, total	7440-31-5	E420-L	0.00005	mg/L	<0.000050	----
Zinc, total	7440-66-6	E420-L	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1694968)						
Chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	----
Total Metals (QCLot: 1700878)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1696387)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1696387) - continued						
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 1696388)						
Arsenic, dissolved	7440-38-2	E421-L	0.00003	mg/L	<0.000030	----
Boron, dissolved	7440-42-8	E421-L	0.005	mg/L	<0.0050	----
Cobalt, dissolved	7440-48-4	E421-L	0.00005	mg/L	<0.000050	----
Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	<0.00015	----
Iron, dissolved	7439-89-6	E421-L	0.005	mg/L	<0.0050	----
Lead, dissolved	7439-92-1	E421-L	0.00003	mg/L	<0.000030	----
Nickel, dissolved	7440-02-0	E421-L	0.0001	mg/L	<0.00010	----
Sodium, dissolved	7440-23-5	E421-L	0.01	mg/L	<0.010	----
Tin, dissolved	7440-31-5	E421-L	0.00005	mg/L	<0.000050	----
Dissolved Metals (QCLot: 1696389)						
Chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 1699424)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Volatile Organic Compounds (QCLot: 1700753)						
Benzene	71-43-2	E611A	0.5	µg/L	<0.50	----
Ethylbenzene	100-41-4	E611A	0.5	µg/L	<0.50	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.5	µg/L	<0.50	----
Styrene	100-42-5	E611A	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611A	0.5	µg/L	<0.50	----
Xylene, m+p-	179601-23-1	E611A	0.4	µg/L	<0.40	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1700753) - continued						
Xylene, o-	95-47-6	E611A	0.3	µg/L	<0.30	----
Hydrocarbons (QCLot: 1695697)						
F2 (C10-C16)	----	E601	100	µg/L	<100	----
F3 (C16-C34)	----	E601	250	µg/L	<250	----
F4 (C34-C50)	----	E601	250	µg/L	<250	----
Hydrocarbons (QCLot: 1700752)						
F1 (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1694778)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1694779)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	96.5	90.0	110	----
Physical Tests (QCLot: 1694780)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	111	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1696626)									
Turbidity	----	E121	0.1	NTU	200 NTU	96.0	85.0	115	----
Physical Tests (QCLot: 1699649)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	94.3	85.0	115	----
Physical Tests (QCLot: 1699661)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1693839)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	112	80.0	120	----
Anions and Nutrients (QCLot: 1693905)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	113	80.0	120	----
Anions and Nutrients (QCLot: 1694784)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.0	90.0	110	----
Anions and Nutrients (QCLot: 1694786)									
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.1	90.0	110	----
Anions and Nutrients (QCLot: 1694787)									
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	1 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 1694788)									
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	2.5 mg/L	97.6	90.0	110	----
Anions and Nutrients (QCLot: 1694789)									
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1694790)									
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	98.8	90.0	110	----
Anions and Nutrients (QCLot: 1694792)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	96.4	80.0	120	----
Anions and Nutrients (QCLot: 1695672)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1695672) - continued									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1696584)									
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	0.05 mg/L	101	80.0	120	----
Anions and Nutrients (QCLot: 1696591)									
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	0.05 mg/L	101	80.0	120	----
Anions and Nutrients (QCLot: 1697385)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1697388)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100.0	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1697386)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	100.0	80.0	120	----
Total Metals (QCLot: 1694966)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	100	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	97.7	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	93.4	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	104	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	106	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	99.1	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	100	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	100	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	95.2	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	95.0	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	96.6	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	99.4	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	96.3	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	101	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	97.4	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	90.7	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	96.8	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	98.9	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	106	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1694966) - continued									
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	96.2	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	110	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	99.1	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	93.5	80.0	120	----
Total Metals (QCLot: 1694967)									
Arsenic, total	7440-38-2	E420-L	0.00003	mg/L	1 mg/L	105	80.0	120	----
Cobalt, total	7440-48-4	E420-L	0.00005	mg/L	0.25 mg/L	98.3	80.0	120	----
Copper, total	7440-50-8	E420-L	0.00015	mg/L	0.25 mg/L	98.6	80.0	120	----
Iron, total	7439-89-6	E420-L	0.005	mg/L	1 mg/L	100	80.0	120	----
Lead, total	7439-92-1	E420-L	0.00003	mg/L	0.5 mg/L	105	80.0	120	----
Nickel, total	7440-02-0	E420-L	0.0001	mg/L	0.5 mg/L	98.3	80.0	120	----
Sodium, total	7440-23-5	E420-L	0.03	mg/L	50 mg/L	100	80.0	120	----
Tin, total	7440-31-5	E420-L	0.00005	mg/L	0.5 mg/L	97.4	80.0	120	----
Zinc, total	7440-66-6	E420-L	0.0015	mg/L	0.5 mg/L	93.2	80.0	120	----
Total Metals (QCLot: 1694968)									
Chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	97.7	80.0	120	----
Total Metals (QCLot: 1700878)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	97.2	80.0	120	----
Dissolved Metals (QCLot: 1696387)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	105	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	92.7	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	102	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	100	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	96.6	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.9	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	94.0	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	103	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	103	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	97.1	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.4	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	105	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1696387) - continued									
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	92.0	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	107	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	93.6	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	108	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	94.0	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	94.3	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	94.3	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	97.3	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	93.5	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	99.0	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	99.6	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	97.0	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	98.1	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	94.8	80.0	120	----
Dissolved Metals (QCLot: 1696388)									
Arsenic, dissolved	7440-38-2	E421-L	0.00003	mg/L	1 mg/L	106	80.0	120	----
Boron, dissolved	7440-42-8	E421-L	0.005	mg/L	1 mg/L	115	80.0	120	----
Cobalt, dissolved	7440-48-4	E421-L	0.00005	mg/L	0.25 mg/L	96.8	80.0	120	----
Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	0.25 mg/L	97.0	80.0	120	----
Iron, dissolved	7439-89-6	E421-L	0.005	mg/L	1 mg/L	92.9	80.0	120	----
Lead, dissolved	7439-92-1	E421-L	0.00003	mg/L	0.5 mg/L	97.1	80.0	120	----
Nickel, dissolved	7440-02-0	E421-L	0.0001	mg/L	0.5 mg/L	97.4	80.0	120	----
Sodium, dissolved	7440-23-5	E421-L	0.01	mg/L	50 mg/L	108	80.0	120	----
Tin, dissolved	7440-31-5	E421-L	0.00005	mg/L	0.5 mg/L	97.8	80.0	120	----
Dissolved Metals (QCLot: 1696389)									
Chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	98.6	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	100	80.0	120	----
Volatile Organic Compounds (QCLot: 1700753)									
Benzene	71-43-2	E611A	0.5	µg/L	100 µg/L	91.9	70.0	130	----
Ethylbenzene	100-41-4	E611A	0.5	µg/L	100 µg/L	86.0	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.5	µg/L	100 µg/L	98.8	70.0	130	----
Styrene	100-42-5	E611A	0.5	µg/L	100 µg/L	91.6	70.0	130	----
Toluene	108-88-3	E611A	0.5	µg/L	100 µg/L	82.8	70.0	130	----
Xylene, m+p-	179601-23-1	E611A	0.4	µg/L	200 µg/L	87.6	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1700753) - continued									
Xylene, o-	95-47-6	E611A	0.3	µg/L	100 µg/L	85.3	70.0	130	----
Hydrocarbons (QCLot: 1695697)									
F2 (C10-C16)	----	E601	100	µg/L	3540 µg/L	109	70.0	130	----
F3 (C16-C34)	----	E601	250	µg/L	7050 µg/L	94.8	70.0	130	----
F4 (C34-C50)	----	E601	250	µg/L	5050 µg/L	116	70.0	130	----
Hydrocarbons (QCLot: 1700752)									
F1 (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	98.4	70.0	130	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1693839)										
YL2401594-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0707 mg/L	0.067 mg/L	106	70.0	130	----
Anions and Nutrients (QCLot: 1693905)										
FC2402744-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1694784)										
YL2401671-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.496 mg/L	0.5 mg/L	99.3	75.0	125	----
Anions and Nutrients (QCLot: 1694786)										
YL2401666-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	1010 mg/L	1000 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1694787)										
YL2401666-001	Anonymous	Fluoride	16984-48-8	E235.F-L	10.3 mg/L	10 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1694788)										
YL2401666-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	25.0 mg/L	25 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1694789)										
YL2401666-001	Anonymous	Bromide	24959-67-9	E235.Br-U	5.16 mg/L	5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1694790)										
YL2401666-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	1000 mg/L	1000 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1694792)										
YL2401666-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0322 mg/L	0.03 mg/L	107	70.0	130	----
Anions and Nutrients (QCLot: 1695672)										
YL2401662-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.2 mg/L	10 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1696584)										
YL2401589-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0594 mg/L	0.05 mg/L	119	70.0	130	----
Anions and Nutrients (QCLot: 1696591)										
YL2401589-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0626 mg/L	0.05 mg/L	125	70.0	130	----
Anions and Nutrients (QCLot: 1697385)										
FJ2403039-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.51 mg/L	2.5 mg/L	100	70.0	130	----
Anions and Nutrients (QCLot: 1697388)										
FJ2403039-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0945 mg/L	0.1 mg/L	94.5	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1697386)										
FJ2403039-002	Anonymous	Carbon, total organic [TOC]	----	E355-L	5.26 mg/L	5 mg/L	105	70.0	130	----
Total Metals (QCLot: 1694966)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1694966) - continued										
YL2401666-001	Anonymous	Aluminum, total	7429-90-5	E420	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0393 mg/L	0.04 mg/L	98.4	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00969 mg/L	0.01 mg/L	96.9	70.0	130	----
		Boron, total	7440-42-8	E420	ND mg/L	----	ND	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00389 mg/L	0.004 mg/L	97.2	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0103 mg/L	0.01 mg/L	103	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0957 mg/L	0.1 mg/L	95.7	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	ND mg/L	----	ND	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		Silicon, total	7440-21-3	E420	9.29 mg/L	10 mg/L	92.9	70.0	130	----
		Silver, total	7440-22-4	E420	0.00416 mg/L	0.004 mg/L	104	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	----	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00387 mg/L	0.004 mg/L	96.8	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0217 mg/L	0.02 mg/L	109	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0405 mg/L	0.04 mg/L	101	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00412 mg/L	0.004 mg/L	103	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
Total Metals (QCLot: 1694967)										
YL2401666-001	Anonymous	Arsenic, total	7440-38-2	E420-L	0.0214 mg/L	0.02 mg/L	107	70.0	130	----
		Cobalt, total	7440-48-4	E420-L	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Copper, total	7440-50-8	E420-L	0.0185 mg/L	0.02 mg/L	92.7	70.0	130	----
		Iron, total	7439-89-6	E420-L	2.01 mg/L	2 mg/L	100	70.0	130	----
		Lead, total	7439-92-1	E420-L	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		Nickel, total	7440-02-0	E420-L	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----
		Sodium, total	7440-23-5	E420-L	ND mg/L	----	ND	70.0	130	----
		Tin, total	7440-31-5	E420-L	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Zinc, total	7440-66-6	E420-L	0.359 mg/L	0.4 mg/L	89.8	70.0	130	----
Total Metals (QCLot: 1694968)										
YL2401666-001	Anonymous	Chromium, total	7440-47-3	E420.Cr-L	0.0400 mg/L	0.04 mg/L	99.9	70.0	130	----
Total Metals (QCLot: 1700878)										
YL2401661-005	Anonymous	Mercury, total	7439-97-6	E508	0.0000967 mg/L	0 mg/L	96.7	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1696387)										
YL2401666-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.200 mg/L	0.2 mg/L	99.9	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0380 mg/L	0.04 mg/L	95.1	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00871 mg/L	0.01 mg/L	87.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00385 mg/L	0.004 mg/L	96.2	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00950 mg/L	0.01 mg/L	95.0	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0959 mg/L	0.1 mg/L	95.9	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	ND mg/L	----	ND	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0381 mg/L	0.04 mg/L	95.2	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.68 mg/L	10 mg/L	96.8	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00402 mg/L	0.004 mg/L	100	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	ND mg/L	----	ND	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0382 mg/L	0.04 mg/L	95.5	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00360 mg/L	0.004 mg/L	90.1	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00393 mg/L	0.004 mg/L	98.2	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.372 mg/L	0.4 mg/L	93.0	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0414 mg/L	0.04 mg/L	103	70.0	130	----
Dissolved Metals (QCLot: 1696388)										
YL2401666-001	Anonymous	Arsenic, dissolved	7440-38-2	E421-L	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		Boron, dissolved	7440-42-8	E421-L	ND mg/L	----	ND	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421-L	0.0184 mg/L	0.02 mg/L	91.8	70.0	130	----
		Copper, dissolved	7440-50-8	E421-L	0.0180 mg/L	0.02 mg/L	89.8	70.0	130	----
		Iron, dissolved	7439-89-6	E421-L	1.91 mg/L	2 mg/L	95.6	70.0	130	----
		Lead, dissolved	7439-92-1	E421-L	0.0184 mg/L	0.02 mg/L	92.2	70.0	130	----
		Nickel, dissolved	7440-02-0	E421-L	0.0350 mg/L	0.04 mg/L	87.4	70.0	130	----
		Sodium, dissolved	7440-23-5	E421-L	ND mg/L	----	ND	70.0	130	----
		Tin, dissolved	7440-31-5	E421-L	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
Dissolved Metals (QCLot: 1696389)										
YL2401666-001	Anonymous	Chromium, dissolved	7440-47-3	E421.Cr-L	0.0387 mg/L	0.04 mg/L	96.8	70.0	130	----
Dissolved Metals (QCLot: 1699424)										
YL2401665-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000959 mg/L	0 mg/L	95.9	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1700753)										
KS2404017-001	Anonymous	Benzene	71-43-2	E611A	89.9 µg/L	100 µg/L	89.9	60.0	140	----
		Ethylbenzene	100-41-4	E611A	86.6 µg/L	100 µg/L	86.6	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	98.6 µg/L	100 µg/L	98.6	60.0	140	----
		Styrene	100-42-5	E611A	91.9 µg/L	100 µg/L	91.9	60.0	140	----
		Toluene	108-88-3	E611A	83.3 µg/L	100 µg/L	83.3	60.0	140	----
		Xylene, m+p-	179601-23-1	E611A	175 µg/L	200 µg/L	87.5	60.0	140	----
		Xylene, o-	95-47-6	E611A	86.3 µg/L	100 µg/L	86.3	60.0	140	----
Hydrocarbons (QCLot: 1700752)										
KS2404127-001	Anonymous	F1 (C6-C10)	----	E581.VH+F1	5240 µg/L	6310 µg/L	83.0	60.0	140	----

SASKATCHEWAN RESEARCH COUNCIL

Environmental Analytical Laboratories
143-111 Research Drive, Saskatoon, SK Canada S7N 3R2

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Toll-free: 1-800-240-8808
E: analytical@src.sk.ca

www.src.sk.ca/analytical

Test Report

SRC Group # 2024-12782

Oct 18, 2024

ALS
314 Old Airport Road, Unit 116
Yellowknife, NT X1A 3T3
Attn: Oliver Gregg

Date Samples Received: Oct-08-2024 Client P.O.: YL2401667

All results have been reviewed and approved by a Qualified Person in accordance with the Saskatchewan Environmental Code, Corrective Action Plan Chapter, for the purposes of certifying a laboratory analysis

Results from Lab Section 4 approved by Snook, Vicky
Results from Lab Section 2 approved by Britton, Stephanie

Test methods and data are validated by the laboratory's Quality Assurance Program.

Routine methods follow recognized procedures from sources such as
- -Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF
- -Environment Canada
- -US EPA
- -CANMET

The results reported relate only to the test samples as provided by the client. Results apply to the sample as received, unless otherwise indicated.

Data marked as "by Client" has been provided by the client and may affect the validity of results.

Samples will be kept for 30 days after the final report is sent. Please contact the lab if you have any special requirements.

Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Analytes denoted with * are accredited by CALA to ISO/IEC 17025:2017.

Additional information is available upon request.

This is a final report.

SASKATCHEWAN RESEARCH COUNCIL
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Test Report

SRC Group # 2024-12782

Oct 18, 2024

ALS
314 Old Airport Road, Unit 116
Yellowknife, NT X1A 3T3
Attn : Oliver Gregg

Date Samples Received: Oct-08-2024 Client P.O.: YL2401667
SRC Lab # 36127 Sample Type: WATER

10/02/2024 11:21 SNP-10 YL2401667-001

Analyte Name	Units	Results	Unconditional Release Limit
Uranium-234 calculated	Bq/L	0.30	none set
Uranium-235 calculated	Bq/L	0.015	none set
Uranium-238 calculated	Bq/L	0.30	10
Radium-228*	Bq/L	<0.9	5
Thorium-228	Bq/L	<0.4	1
Thorium-234*	Bq/L	<4	10
Thorium-230*	Bq/L	<30	5
Radium-226*	Bq/L	<7	5
Lead-210*	Bq/L	<4	1
Potassium-40*	Bq/L	<5	none set

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 3.3 °C upon receipt.

Sample preparation and Analysis Method

A 500 mL aliquot of each sample was measured into a standard Marinelli beaker, sealed with tape, and a high resolution gamma ray spectrometric measurement was performed using a hyperpure Ge detector housed in a 10cm lead castle.

Gamma Spectroscopy (Rad-300) detection limits vary and are influenced by several factors. "Less than" values reported above represent the lowest detection limits achievable for the sample.

Radium 228 and Thorium 228 are not directly detected by Gamma spectroscopy, instead, they are inferred from Actinium 228 and Lead 212.

Concentrations of Uranium were determined by Inductively Coupled Plasma Mass Spectrometry (ICP-MS). The activity of Uranium-234, Uranium-235 and Uranium-238 were calculated from the ICP-MS results based on natural abundance.

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Test Report

SRC Group # 2024-12782

Oct 18, 2024

Sum of Ratios = 12

This sample exceeds the unconditional derived release limits for diffuse NORM sources for one or more isotopes set by the Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials table 5.1.

SASKATCHEWAN RESEARCH COUNCIL

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Test Report

SRC Group # 2024-12782

Oct 18, 2024

Analyte Methods

Name	Units	Method
Uranium-234 calculated	Bq/L	Chm-522
Uranium-235 calculated	Bq/L	Chm-522
Uranium-238 calculated	Bq/L	Chm-522
Potassium-40	Bq/L	Rad-300
Lead-210	Bq/L	Rad-300
Radium-226	Bq/L	Rad-300
Radium-228	Bq/L	Rad-300
Thorium-228	Bq/L	Rad-300
Thorium-230	Bq/L	Rad-300
Thorium-234	Bq/L	Rad-300

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 20241002/ 01

Report To	Contact and company name below will appear on the final report
Company:	DeBeers Gahcho Kué
Contact:	Dave Ott/Michelle Burger
Phone:	867-679-5812/5814
	Company address below will appear on the final report
Street:	5120 49th Street Suite 300
City/Province:	Yellowknife, NT
Postal Code:	X1A 3S8
Invoice To	Same as Report To Yes No
	Copy of Invoice with Report Yes No
Company:	DeBeers Group
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8

Report Format / Distribution

Select Report Format: Quality Control (QC) Report with Report

Select Distribution:

Email 1 or Fax: Environment.GahchoKue@debeersgroup.com
Email 2: Dave.Ott@debeersgroup.com
Email 3: Michelle.Burger@debeersgroup.com

Invoice Distribution

Select Invoice Distribution:
Email 1 or Fax: ap.invoices@debeersgroup.com
Email 2: Mason.Elwood@debeersgroup.com

Project Information

ALS Account # / Quote #:
Job #: SNP-10 Monthly
PO / AFE: 4100968747
LSD:

Oil and Gas Required Fields (client use)

Approver ID: Cost Center:
GL Account: Routing Code:
Activity Code:
Location:

ALS Lab Work Order # (lab use only)

ALS Contact: Oliver Gregg Sampler: J. Vornbrock

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days): 4 day [P4-20%]; 3 day [P3-25%]; 2 day [P2-50%]

EMERGENCY: 1 Business day [E - 100%]; Same Day. Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]

Date and time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical Parameters	Major Ions	Total Nutrients	Dissolved Nutrients	Total Metals	Dissolved Metals	Total Mercury	Dissolved Mercury	BTEX	Total Petroleum Hydrocarbons	Radionuclides	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
								P				P		P	P	P		
	SNP-10	2-Oct-24	10:21	Water	16	R	R	R	R	R	R	R	R	R	R	R		

Environmental Division
Yellowknife
Work Order Reference
YL2401667

Telephone : +1 867 873 5593

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

Are samples for human drinking water use?

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
10.3							

SHIPMENT RELEASE (client use)

Released by: J. Vornbrock Date: 2-Oct-24 Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Oct 3/24 Time: 12:10

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NAFM-032Ba v09 Front/94 January 2014

complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

If samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241002/ 01

Date: October 2, 2024

Sample Date	2-Oct-24				
Sample Name	SNP-10				
Physical Parameters — Rush (Y/N)	N				
Conductivity	X				
pH	X				
Total Suspended Solids (Ultra Low)	X				
Turbidity	X				
Major Ions — Rush (Y/N)	N				
Alkalinity, Bicarbonate (as CaCO3)	X				
Alkalinity, Carbonate (as CaCO3)	X				
Alkalinity, Hydroxide (as CaCO3)	X				
Alkalinity, Total (as CaCO3)	X				
Hardness (as CaCO3)	X				
Calcium	X				
Magnesium	X				
Potassium	X				
Sodium	X				
Chloride (Cl)	X				
Fluoride (F)	X				
Total Dissolved Solids (SNP-07)	X				
Sulphate (SO4)	X				
Reactive Silicate	X				
Nutrients — Rush (Y/N)	N				
Lab to Filter Dissolved Nutrients	X				
Ammonia, Total (as N)	X				
Nitrate and Nitrite (as N)	X				
Nitrate (as N)	X				
Nitrite (as N)	X				
Total Kjeldahl Nitrogen	X				
Orthophosphate-Dissolved (as P)	X				
Phosphorus (P)-Total Dissolved	X				
Phosphorus (P)-Total	X				
Phosphorus (P)-Dissolved Organic	X				
Phosphorus (P)-Total Inorganic	X				
Phosphorus (P)-Dissolved Inorganic	X				
Total Organic Carbon	X				
Aggregate Organics — Rush (Y/N)					
Biochemical Oxygen Demand (SNP-07)					
Oil and Grease (SNP-07)					
Metals — Rush (Y/N)	N				
Lab to Filter Dissolved Metals	X				
Total Metals (preserved with HNO3)	X				
Dissolved Metals (not preserved)	X				

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Rubidium, Selenium, Silver, Strontium, Thallium, Titanium, Uranium, Vanadium, Zinc.

Speciated Metals — Rush (Y/N)	N				
Hydrocarbons and VOCs — Rush (Y/N)	N				
BTEX, F1-F4	X				
Total Petroleum Hydrocarbons	X				
Bacteria — Rush (Y/N)					
Total Coliforms, Fecal Coliforms, and E. coli					
Radionuclides (SNP-08/09/10) — Rush (Y/N)	N				
Uranium and Thorium	X				
Radium-226 (if U & Th leach to grndwtr)					

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **YL2401668**		
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Calgary
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife Northwest Territories Canada X1A 1P8	Address	: 2559 29th Street NE Calgary AB Canada T1Y 7B5
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-07 Monthly	Date Samples Received	: 03-Oct-2024 12:10
PO	: 4100968747	Date Analysis Commenced	: 03-Oct-2024
C-O-C number	: 20241002/ 05	Issue Date	: 10-Oct-2024 18:10
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Janice Leung	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Marsha Calero	Laboratory Assistant	Organics, Calgary, Alberta
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Oliver Gregg	Client Services Supervisor	External Subcontracting, Yellowknife, Northwest Territories

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
pH units	pH units
µS/cm	microsiemens per centimetre
NTU	nephelometric turbidity units
MPN/100mL	most probable number per hundred millilitres
CFU/100mL	colony forming units per hundred millilitres
µg/L	micrograms per litre

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
SFP	Sample was filtered and preserved at the laboratory.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-07	SNP-07-01	----	----	----
				Client sampling date / time	02-Oct-2024 14:27	02-Oct-2024 14:27	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401668-001	YL2401668-002	----	----	----
					Result	Result	----	----	----
Physical Tests									
Conductivity	----	E100/VA	2.0	µS/cm	668	660	----	----	----
pH	----	E108/VA	0.10	pH units	7.61	7.59	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	436	440	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	<1.0	<1.0	----	----	----
Turbidity	----	E121/VA	0.10	NTU	0.21	0.16	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	2.05	2.24	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	3.81	3.98	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-T/VA	0.0030	mg/L	6.65	6.54	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/VA	0.0032	mg/L	6.69	6.57	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0050	mg/L	0.0388	0.0320	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	2.16	2.16	----	----	----
Phosphorus, dissolved inorganic	----	E377-L/EO	0.0010	mg/L	2.07	2.16	----	----	----
Phosphorus, dissolved organic	----	EC377-L.ORG/EO	0.0020	mg/L	<0.198	<0.198	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	1.81	1.94	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	1.93 SFP	1.87 SFP	----	----	----
Phosphorus, total inorganic	----	E376-L/EO	0.0010	mg/L	2.18	2.02	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	12.0	12.8	----	----	----
Microbiological Tests									
Coliforms, Escherichia coli [E. coli]	----	EC-MPN/1Y	1.0	MPN/100 mL	<1.0	<1.0	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-07	SNP-07-01	----	----	----
				Client sampling date / time	02-Oct-2024 14:27	02-Oct-2024 14:27	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401668-001	YL2401668-002	----	----	----
					Result	Result	----	----	----
Microbiological Tests									
Coliforms, thermotolerant [fecal]	----	FC-MF/1Y	1.0	CFU/100 mL	<1.0	1.0	----	----	----
Coliforms, total	----	TC-MPN/1Y	1.0	MPN/100 mL	<1.0	12.0	----	----	----
Aggregate Organics									
Biochemical oxygen demand [BOD]	----	BOD5/1Y	2.0	mg/L	<2.0	<2.0	----	----	----
Oil & grease (gravimetric)	----	E567/CG	5.0	mg/L	<5.0	<5.0	----	----	----
Volatile Organic Compounds [Fuels]									
Benzene	71-43-2	E611A/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Ethylbenzene	100-41-4	E611A/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Styrene	100-42-5	E611A/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Toluene	108-88-3	E611A/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Xylene, m+p-	179601-23-1	E611A/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Xylene, o-	95-47-6	E611A/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Xylenes, total	1330-20-7	E611A/VA	0.00075	mg/L	<0.00075	<0.00075	----	----	----
Hydrocarbons									
F1 (C6-C10)	----	E581.VH+F1/VA	0.10	mg/L	<0.10	<0.10	----	----	----
F1-BTEX	----	EC580/VA	0.100	mg/L	<0.100	<0.100	----	----	----
F2 (C10-C16)	----	E601/VA	0.10	mg/L	<0.10	<0.10	----	----	----
F3 (C16-C34)	----	E601/VA	0.25	mg/L	<0.25	<0.25	----	----	----
F4 (C34-C50)	----	E601/VA	0.25	mg/L	<0.25	<0.25	----	----	----
Hydrocarbons, total (C6-C50)	n/a	EC581/VA	0.40	mg/L	<0.40	<0.40	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-07	SNP-07-01	----	----	----
				Client sampling date / time	02-Oct-2024 14:27	02-Oct-2024 14:27	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401668-001	YL2401668-002	----	----	----
					Result	Result	----	----	----
Hydrocarbons									
TEH (C10-C50)	n/a	E601/VA	0.40	mg/L	<0.40	<0.40	----	----	----
TEH (C16-C50)	----	E601/VA	0.40	mg/L	<0.40	<0.40	----	----	----
Hydrocarbons Surrogates									
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	E601/VA	1.0	%	84.4	84.0	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%	99.8	121	----	----	----
Volatile Organic Compounds Surrogates									
Bromofluorobenzene, 4-	460-00-4	E611A/VA	1.0	%	99.1	101	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611A/VA	1.0	%	102	103	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2401668**	Page	: 1 of 15
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-07 Monthly	Date Samples Received	: 03-Oct-2024 12:10
PO	: 4100968747	Issue Date	: 10-Oct-2024 18:27
C-O-C number	: 20241002/ 05		
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand (BOD) 5-day										
HDPE [BOD HT-48h] SNP-07	BOD5	02-Oct-2024	----	----	----		03-Oct-2024	48 hrs	18 hrs	✓
Aggregate Organics : Biochemical Oxygen Demand (BOD) 5-day										
HDPE [BOD HT-48h] SNP-07-01	BOD5	02-Oct-2024	----	----	----		03-Oct-2024	48 hrs	18 hrs	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid) SNP-07	E567	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	08-Oct-2024	28 days	6 days	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid) SNP-07-01	E567	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	08-Oct-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-07	E298	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	10-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-07-01	E298	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	10-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-07	E377-L	02-Oct-2024	08-Oct-2024	3 days	6 days	× EHT	10-Oct-2024	28 days	2 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis: Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-07-01	E377-L	02-Oct-2024	08-Oct-2024	3 days	6 days	✗ EHT	10-Oct-2024	28 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE										
SNP-07	E378-U	02-Oct-2024	07-Oct-2024	3 days	5 days	✗ EHT	07-Oct-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE										
SNP-07-01	E378-U	02-Oct-2024	07-Oct-2024	3 days	5 days	✗ EHT	07-Oct-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE										
SNP-07	E235.NO3-T	02-Oct-2024	07-Oct-2024	3 days	5 days	✗ EHT	07-Oct-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE										
SNP-07-01	E235.NO3-T	02-Oct-2024	07-Oct-2024	3 days	5 days	✗ EHT	07-Oct-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-07	E235.NO2-L	02-Oct-2024	07-Oct-2024	3 days	5 days	✗ EHT	07-Oct-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-07-01	E235.NO2-L	02-Oct-2024	07-Oct-2024	3 days	5 days	✗ EHT	07-Oct-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-07	E375-U	02-Oct-2024	07-Oct-2024	3 days	5 days	✗ EHT	07-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-07-01	E375-U	02-Oct-2024	07-Oct-2024	3 days	5 days	✗ EHT	07-Oct-2024	28 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) SNP-07	E376-L	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	10-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) SNP-07-01	E376-L	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	10-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) SNP-07	E318	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	09-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) SNP-07-01	E318	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	09-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) SNP-07	E372-S	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) SNP-07-01	E372-S	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) SNP-07	E601	02-Oct-2024	08-Oct-2024	14 days	5 days	✓	08-Oct-2024	40 days	1 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) SNP-07-01	E601	02-Oct-2024	08-Oct-2024	14 days	5 days	✓	08-Oct-2024	40 days	1 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate) SNP-07	E581.VH+F1	02-Oct-2024	09-Oct-2024	14 days	7 days	✓	10-Oct-2024	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate) SNP-07-01	E581.VH+F1	02-Oct-2024	09-Oct-2024	14 days	7 days	✓	10-Oct-2024	14 days	8 days	✓
Microbiological Tests : E. Coli by MPN										
Sterile HDPE (Sodium thiosulphate) SNP-07	EC-MPN	02-Oct-2024	----	----	----		03-Oct-2024	30 hrs	18 hrs	✓
Microbiological Tests : E. Coli by MPN										
Sterile HDPE (Sodium thiosulphate) SNP-07-01	EC-MPN	02-Oct-2024	----	----	----		03-Oct-2024	30 hrs	18 hrs	✓
Microbiological Tests : Fecal Coliforms in Water by MF										
Sterile HDPE (Sodium thiosulphate) SNP-07	FC-MF	02-Oct-2024	----	----	----		03-Oct-2024	30 hrs	18 hrs	✓
Microbiological Tests : Fecal Coliforms in Water by MF										
Sterile HDPE (Sodium thiosulphate) SNP-07-01	FC-MF	02-Oct-2024	----	----	----		03-Oct-2024	30 hrs	18 hrs	✓
Microbiological Tests : Total Coliforms by MPN										
Sterile HDPE (Sodium thiosulphate) SNP-07	TC-MPN	02-Oct-2024	----	----	----		03-Oct-2024	30 hrs	18 hrs	✓
Microbiological Tests : Total Coliforms by MPN										
Sterile HDPE (Sodium thiosulphate) SNP-07-01	TC-MPN	02-Oct-2024	----	----	----		03-Oct-2024	30 hrs	18 hrs	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) SNP-07	E355-L	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	09-Oct-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) SNP-07-01	E355-L	02-Oct-2024	08-Oct-2024	28 days	6 days	✓	09-Oct-2024	28 days	7 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE SNP-07	E100	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP-07-01	E100	02-Oct-2024	07-Oct-2024	28 days	5 days	✓	07-Oct-2024	28 days	5 days	✓
Physical Tests : pH by Meter										
HDPE SNP-07	E108	02-Oct-2024	07-Oct-2024	0.25 hrs	120 hrs	✗ EHTR-FM	07-Oct-2024	0.25 hrs	121 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE SNP-07-01	E108	02-Oct-2024	07-Oct-2024	0.25 hrs	120 hrs	✗ EHTR-FM	07-Oct-2024	0.25 hrs	121 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SNP-07	E162	02-Oct-2024	----	----	----		09-Oct-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SNP-07-01	E162	02-Oct-2024	----	----	----		09-Oct-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-07	E160-L	02-Oct-2024	----	----	----		09-Oct-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-07-01	E160-L	02-Oct-2024	----	----	----		09-Oct-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE SNP-07	E121	02-Oct-2024	----	----	----		08-Oct-2024	3 days	6 days	✗ EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Turbidity by Nephelometry										
HDPE										
SNP-07-01	E121	02-Oct-2024	----	----	----		08-Oct-2024	3 days	6 days	× EHT
Volatile Organic Compounds : BTEX by Headspace GC-MS										
Glass vial (sodium bisulfate)										
SNP-07	E611A	02-Oct-2024	09-Oct-2024	14 days	7 days	✓	10-Oct-2024	14 days	8 days	✓
Volatile Organic Compounds : BTEX by Headspace GC-MS										
Glass vial (sodium bisulfate)										
SNP-07-01	E611A	02-Oct-2024	09-Oct-2024	14 days	7 days	✓	10-Oct-2024	14 days	8 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Ammonia by Fluorescence	E298	1697388	1	19	5.2	5.0	✓
BTEX by Headspace GC-MS	E611A	1700753	1	20	5.0	5.0	✓
Conductivity in Water	E100	1694779	1	16	6.2	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1696584	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1694792	1	6	16.6	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1694788	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1694784	1	19	5.2	5.0	✓
pH by Meter	E108	1694778	1	19	5.2	5.0	✓
TDS by Gravimetry	E162	1699661	1	13	7.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1693839	1	15	6.6	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1696591	1	13	7.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1697385	1	8	12.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1697386	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1693905	1	18	5.5	5.0	✓
Turbidity by Nephelometry	E121	1696955	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1700752	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Ammonia by Fluorescence	E298	1697388	1	19	5.2	5.0	✓
BTEX by Headspace GC-MS	E611A	1700753	1	20	5.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID	E601	1695697	1	13	7.6	5.0	✓
Conductivity in Water	E100	1694779	1	16	6.2	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1696584	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1694792	1	6	16.6	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1694788	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1694784	1	19	5.2	5.0	✓
Oil & Grease by Gravimetry	E567	1696309	1	5	20.0	5.0	✓
pH by Meter	E108	1694778	1	19	5.2	5.0	✓
TDS by Gravimetry	E162	1699661	1	13	7.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1693839	1	15	6.6	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1696591	1	13	7.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1697385	1	8	12.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1697386	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1693905	1	18	5.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1699649	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1696955	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1700752	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB)							
Ammonia by Fluorescence	E298	1697388	1	19	5.2	5.0	✓
BTEX by Headspace GC-MS	E611A	1700753	1	20	5.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID	E601	1695697	1	13	7.6	5.0	✓
Conductivity in Water	E100	1694779	1	16	6.2	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1696584	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1694792	1	6	16.6	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1694788	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1694784	1	19	5.2	5.0	✓
Oil & Grease by Gravimetry	E567	1696309	1	5	20.0	5.0	✓
TDS by Gravimetry	E162	1699661	1	13	7.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1693839	1	15	6.6	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1696591	1	13	7.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1697385	1	8	12.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1697386	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1693905	1	18	5.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1699649	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1696955	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1700752	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1697388	1	19	5.2	5.0	✓
BTEX by Headspace GC-MS	E611A	1700753	1	20	5.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1696584	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1694792	1	6	16.6	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1694788	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1694784	1	19	5.2	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1693839	1	15	6.6	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1696591	1	13	7.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1697385	1	8	12.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1697386	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1693905	1	18	5.5	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1700752	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Biochemical Oxygen Demand (BOD) 5-day	BOD5 Taiga Environmental Laboratory - 4601 - 52nd Avenue P.O. BOX 1500 Yellowknife Northwest Territories Canada X1A 2R3	Water	SM5210B	Sample was diluted, seeded, and incubated at specified temperature for 5 days. Dissolved oxygen is measured initially and after incubation, and the BOD is computed from the difference between initial and final DO.
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry (Low Level)	E160-L ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Trace Level)	E235.NO3-T ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Total Inorganic Phosphorus is determined colourimetrically after sample has undergone H2SO4 hydrolysis
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved Inorganic Phosphorus is determined colourimetrically after H_2SO_4 hydrolysis of a sample that has been lab or field filtered through a 0.45 micron membrane filter
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Oil & Grease by Gravimetry	E567 ALS Environmental - Calgary	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane and the extract is evaporated to dryness. The residue is then weighed to determine Oil and Grease.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
VH and F1 by Headspace GC-FID	E581.VH+F1 ALS Environmental - Vancouver	Water	BC MOE Lab Manual / CCME PHC in Soil - Tier 1 (mod)	Volatile Hydrocarbons (VH and F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
CCME PHCs - F2-F4 by GC-FID	E601 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	Sample extracts are analyzed by GC-FID for CCME hydrocarbon fractions (F2-F4). Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
BTEX by Headspace GC-MS	E611A ALS Environmental - Vancouver	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Vancouver	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Phosphorus, dissolved organic (0.0014 mg/L) by calculation.	EC377-L.ORG ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved inorganic phosphorus is subtracted from total dissolved phosphorus to determine dissolved organic phosphorus.
F1-BTEX	EC580 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	F1-BTEX is calculated as follows: F1-BTEX = F1 (C6-C10) minus benzene, toluene, ethylbenzene and xylenes (BTEX).
Sum F1 to F4 (C6-C50)	EC581 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	Hydrocarbons, total (C6-C50) is the sum of CCME Fractions F1(C6-C10), F2(C10-C16), F3(C16-C34), and F4(C34-C50). F4G-sg is not used within this calculation due to overlap with other fractions.
E. Coli by MPN	EC-MPN Taiga Environmental Laboratory - 4601 - 52nd Avenue P.O. BOX 1500 Yellowknife Northwest Territories Canada X1A 2R3	Water	SM9223B	See attached report.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Fecal Coliforms in Water by MF	FC-MF Taiga Environmental Laboratory - 4601 - 52nd Avenue P.O. BOX 1500 Yellowknife Northwest Territories Canada X1A 2R3	Water	APHA 9222D	See attached report.
Total Coliforms by MPN	TC-MPN Taiga Environmental Laboratory - 4601 - 52nd Avenue P.O. BOX 1500 Yellowknife Northwest Territories Canada X1A 2R3	Water	SM9223B	See attached report.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Digestion for Total Inorganic Phosphorus in water	EP376 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples undergo H2SO4 hydrolysis.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Digestion for Dissolved Inorganic Phosphorus in water	EP377 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then undergo H2SO4 hydrolysis.
Oil & Grease Extraction for Gravimetry	EP567 ALS Environmental - Calgary	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane by liquid-liquid extraction.
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Vancouver	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID.
PHCs and PAHs Hexane Extraction	EP601 ALS Environmental - Vancouver	Water	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.

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QUALITY CONTROL REPORT

Work Order	: **YL2401668**	Page	: 1 of 10
Client	: De Beers Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-07 Monthly	Date Samples Received	: 03-Oct-2024 12:10
PO	: 4100968747	Date Analysis Commenced	: 03-Oct-2024
C-O-C number	: 20241002/ 05	Issue Date	: 10-Oct-2024 18:05
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta
Janice Leung	Supervisor - Organics Instrumentation	Vancouver Organics, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Vancouver Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Marsha Calero	Laboratory Assistant	Calgary Organics, Calgary, Alberta
Monica Ko	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
Oliver Gregg	Client Services Supervisor	Taiga Environmental Laboratory External Subcontracting, Yellowknife, Northwest Territories

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1694778)											
VA24C6301-003	Anonymous	pH	----	E108	0.10	pH units	8.18	8.18	0.00%	4%	----
Physical Tests (QC Lot: 1694779)											
VA24C6301-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	373	375	0.535%	10%	----
Physical Tests (QC Lot: 1696955)											
VA24C6635-001	Anonymous	Turbidity	----	E121	0.10	NTU	5.30	5.56	4.79%	15%	----
Physical Tests (QC Lot: 1699661)											
FJ2403021-001	Anonymous	Solids, total dissolved [TDS]	----	E162	13	mg/L	138	141	2.16%	20%	----
Anions and Nutrients (QC Lot: 1693839)											
YL2401594-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1693905)											
FC2402742-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.364	0.367	0.730%	20%	----
Anions and Nutrients (QC Lot: 1694788)											
YL2401665-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	0.0600	mg/L	7.38	7.39	0.178%	20%	----
Anions and Nutrients (QC Lot: 1694792)											
YL2401665-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1696584)											
YL2401588-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1696591)											
YL2401588-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0010	mg/L	0.136	0.134	1.58%	20%	----
Anions and Nutrients (QC Lot: 1697385)											
FJ2403038-004	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1697388)											
FJ2403038-004	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1697386)											
FJ2403038-004	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1700753)											
KS2404017-001	Anonymous	Benzene	71-43-2	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Styrene	100-42-5	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 1700753) - continued											
KS2404017-001	Anonymous	Toluene	108-88-3	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611A	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611A	0.30	µg/L	0.33	0.30	0.02	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1700752)											
KS2404017-001	Anonymous	F1 (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1694779)						
Conductivity	----	E100	1	µS/cm	1.3	----
Physical Tests (QCLot: 1696955)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1699649)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 1699661)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1693839)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1693905)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1694784)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1694788)						
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	<0.0030	----
Anions and Nutrients (QCLot: 1694792)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1696584)						
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1696591)						
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1697385)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1697388)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1697386)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Aggregate Organics (QCLot: 1696309)						
Oil & grease (gravimetric)	----	E567	5	mg/L	<5.0	----
Volatile Organic Compounds (QCLot: 1700753)						
Benzene	71-43-2	E611A	0.5	µg/L	<0.50	----
Ethylbenzene	100-41-4	E611A	0.5	µg/L	<0.50	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1700753) - continued						
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.5	µg/L	<0.50	----
Styrene	100-42-5	E611A	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611A	0.5	µg/L	<0.50	----
Xylene, m+p-	179601-23-1	E611A	0.4	µg/L	<0.40	----
Xylene, o-	95-47-6	E611A	0.3	µg/L	<0.30	----
Hydrocarbons (QCLot: 1695697)						
F2 (C10-C16)	----	E601	100	µg/L	<100	----
F3 (C16-C34)	----	E601	250	µg/L	<250	----
F4 (C34-C50)	----	E601	250	µg/L	<250	----
Hydrocarbons (QCLot: 1700752)						
F1 (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1694778)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1694779)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	96.5	90.0	110	----
Physical Tests (QCLot: 1696955)									
Turbidity	----	E121	0.1	NTU	200 NTU	96.5	85.0	115	----
Physical Tests (QCLot: 1699649)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	94.3	85.0	115	----
Physical Tests (QCLot: 1699661)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1693839)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	112	80.0	120	----
Anions and Nutrients (QCLot: 1693905)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	113	80.0	120	----
Anions and Nutrients (QCLot: 1694784)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.0	90.0	110	----
Anions and Nutrients (QCLot: 1694788)									
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	2.5 mg/L	97.6	90.0	110	----
Anions and Nutrients (QCLot: 1694792)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	96.4	80.0	120	----
Anions and Nutrients (QCLot: 1696584)									
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	0.05 mg/L	101	80.0	120	----
Anions and Nutrients (QCLot: 1696591)									
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	0.05 mg/L	101	80.0	120	----
Anions and Nutrients (QCLot: 1697385)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1697388)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100.0	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1697386)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	100.0	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Aggregate Organics (QCLot: 1696309)									
Oil & grease (gravimetric)	----	E567	5	mg/L	100 mg/L	128	70.0	130	----
Volatile Organic Compounds (QCLot: 1700753)									
Benzene	71-43-2	E611A	0.5	µg/L	100 µg/L	91.9	70.0	130	----
Ethylbenzene	100-41-4	E611A	0.5	µg/L	100 µg/L	86.0	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.5	µg/L	100 µg/L	98.8	70.0	130	----
Styrene	100-42-5	E611A	0.5	µg/L	100 µg/L	91.6	70.0	130	----
Toluene	108-88-3	E611A	0.5	µg/L	100 µg/L	82.8	70.0	130	----
Xylene, m+p-	179601-23-1	E611A	0.4	µg/L	200 µg/L	87.6	70.0	130	----
Xylene, o-	95-47-6	E611A	0.3	µg/L	100 µg/L	85.3	70.0	130	----
Hydrocarbons (QCLot: 1695697)									
F2 (C10-C16)	----	E601	100	µg/L	3540 µg/L	109	70.0	130	----
F3 (C16-C34)	----	E601	250	µg/L	7050 µg/L	94.8	70.0	130	----
F4 (C34-C50)	----	E601	250	µg/L	5050 µg/L	116	70.0	130	----
Hydrocarbons (QCLot: 1700752)									
F1 (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	98.4	70.0	130	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1693839)										
YL2401594-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0707 mg/L	0.067 mg/L	106	70.0	130	----
Anions and Nutrients (QCLot: 1693905)										
FC2402744-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1694784)										
YL2401671-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	----	----		75.0	125	----
Anions and Nutrients (QCLot: 1694788)										
YL2401666-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	25.0 mg/L	25 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1694792)										
YL2401666-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0322 mg/L	0.03 mg/L	107	70.0	130	----
Anions and Nutrients (QCLot: 1696584)										
YL2401589-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0594 mg/L	0.05 mg/L	119	70.0	130	----
Anions and Nutrients (QCLot: 1696591)										
YL2401589-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0626 mg/L	0.05 mg/L	125	70.0	130	----
Anions and Nutrients (QCLot: 1697385)										
FJ2403039-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.51 mg/L	2.5 mg/L	100	70.0	130	----
Anions and Nutrients (QCLot: 1697388)										
FJ2403039-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0945 mg/L	0.1 mg/L	94.5	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1697386)										
FJ2403039-002	Anonymous	Carbon, total organic [TOC]	----	E355-L	5.26 mg/L	5 mg/L	105	70.0	130	----
Volatile Organic Compounds (QCLot: 1700753)										
KS2404017-001	Anonymous	Benzene	71-43-2	E611A	89.9 µg/L	100 µg/L	89.9	60.0	140	----
		Ethylbenzene	100-41-4	E611A	86.6 µg/L	100 µg/L	86.6	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	98.6 µg/L	100 µg/L	98.6	60.0	140	----
		Styrene	100-42-5	E611A	91.9 µg/L	100 µg/L	91.9	60.0	140	----
		Toluene	108-88-3	E611A	83.3 µg/L	100 µg/L	83.3	60.0	140	----
		Xylene, m+p-	179601-23-1	E611A	175 µg/L	200 µg/L	87.5	60.0	140	----
		Xylene, o-	95-47-6	E611A	86.3 µg/L	100 µg/L	86.3	60.0	140	----
Hydrocarbons (QCLot: 1700752)										
KS2404127-001	Anonymous	F1 (C6-C10)	----	E581.VH+F1	5240 µg/L	6310 µg/L	83.0	60.0	140	----

Taiga Batch No.:
241558

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

- FINAL REPORT -

Prepared For: ALS Environmental

Address: 314 Old Airport Road
Unit 116
Yellowknife,NT
X1A 2R1

Attn: **Oliver Gregg** **Facsimile:**

Final report has been reviewed and approved by:

Shalene Manickum
Laboratory Manager

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.
- BC MOE accepts a hold time of 30 hours for Coliforms and Enterococcus in all water sample types.

ReportDate: Thursday, October 10, 2024
Print Date: ***Thursday, October 10, 2024***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 241558

- CERTIFICATE OF ANALYSIS -

Client Sample ID: YL2401668-001 SNP-07 **Taiga Sample ID:** 001

Client Project:
Sample Type: Water
Received Date: 03-Oct-24
Sampling Date: 02-Oct-24
Sampling Time: 14:27
Location:
Report Status: **Final**

Test Parameter	Result		Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients							
Biochemical Oxygen Demand	<	2	2	mg/L	03-Oct-24	TEL019	
Microbiology							
Coliforms, Fecal	<	1	1	CFU/100mL	03-Oct-24	TEL017	
Coliforms, Total	<	1.0	1	MPN/100ml	03-Oct-24	TEL053	
Escherichia coli	<	1.0	1	MPN/100ml	03-Oct-24	TEL053	

ReportDate: Thursday, October 10, 2024
Print Date: *Thursday, October 10, 2024*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 241558

- CERTIFICATE OF ANALYSIS -

Client Sample ID: YL2401668-001 SNP-07 **Taiga Sample ID:** 001

ReportDate: Thursday, October 10, 2024
Print Date: *Thursday, October 10, 2024*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 241558

- CERTIFICATE OF ANALYSIS -

Client Sample ID: YL2401668-002 SNP-07-01 **Taiga Sample ID:** 002

Client Project:
Sample Type: Water
Received Date: 03-Oct-24
Sampling Date: 02-Oct-24
Sampling Time: 14:27
Location:
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Biochemical Oxygen Demand	< 2	2	mg/L	03-Oct-24	TEL019	
Microbiology						
Coliforms, Fecal	1	1	CFU/100mL	03-Oct-24	TEL017	
Coliforms, Total	12.0	1	MPN/100ml	03-Oct-24	TEL053	
Escherichia coli	< 1.0	1	MPN/100ml	03-Oct-24	TEL053	

ReportDate: Thursday, October 10, 2024
Print Date: *Thursday, October 10, 2024*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: **241558**

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **YL2401668-002 SNP-07-01** **Taiga Sample ID:** **002**

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater
EPA - United States Environmental Protection Agency

ReportDate: Thursday, October 10, 2024
Print Date: ***Thursday, October 10, 2024***

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 20241002/ 05

Report To	Contact and company name below will appear on the final report
Company:	DeBeers Gahcho Kué
Contact:	Dave Ott/Michelle Burger
Phone:	867-679-5812/5814
	Company address below will appear on the final report
Street:	5120 49th Street Suite 300
City/Province:	Yellowknife, NT
Postal Code:	X1A 3S8
Invoice To	Same as Report To — Yes — No
	Copy of Invoice with Report — Yes — No
Company:	DeBeers Group
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8

Report Format / Distribution

Select Report Format: Quality Control (QC) Report with Report

Select Distribution:

Email 1 or Fax: Environment.GahchoKue@debeersgroup.com
Email 2: Dave.Ott@debeersgroup.com
Email 3: Michelle.Burger@debeersgroup.com

Invoice Distribution

Select Invoice Distribution:
Email 1 or Fax: ap.invoices@debeersgroup.com
Email 2: Mason.Elwood@debeersgroup.com

Project Information

ALS Account # / Quote #:
Job #: SNP-07 Monthly
PO / AFE: 4100968747
LSD:

Oil and Gas Required Fields (client use)

Approver ID: | Cost Center:
GL Account: | Routing Code:
Activity Code:
Location:

ALS Lab Work Order # (lab use only)

ALS Contact: Oliver Gregg | Sampler: J. Vornbrock

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days): 4 day [P4-20%]; 3 day [P3-25%]; 2 day [P2-50%]

EMERGENCY: 1 Business day [E - 100%]; Same Day. Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]

Date and time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Routine	Total Nutrients (P)	Dissolved Nutrients	BOD	Total Petroleum Hydrocarbons (P)	Ultra Low TSS	Oil and Grease (P)	Total Coliform (P)	Faecal Coliform (P)	E.Coli (P)	BTEX (P)	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	SNP-07	2-Oct-24	14:27	Water	13	R	R	R	R	R	R	R	R	R	R	R		
	SNP-07-01	2-Oct-24	14:27	Water	13	R	R	R	R	R	R	R	R	R	R	R		

Environmental Division
Yellowknife
Work Order Reference
YL2401668

Telephone : +1 867 873 5593

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

Are samples for human drinking water use?

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
10.3	

SHIPMENT RELEASE (client use)

Released by: J. Vornbrock | Date: 2-Oct-24 | Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: MA | Date: Oct 3/24 | Time: 12:10

FINAL SHIPMENT RECEPTION (lab use only)

Received by: | Date: | Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0325a v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241002/ 05

Date: October 2, 2024

Sample Date	2-Oct-24	2-Oct-24			
Sample Name	SNP-07	SNP-07-01			
Physical Parameters — Rush (Y/N)	N	N			
Conductivity	X	X			
pH	X	X			
Total Suspended Solids (Ultra Low)	X	X			
Turbidity	X	X			
Major Ions — Rush (Y/N)	N	N			
Alkalinity, Bicarbonate (as CaCO3)					
Alkalinity, Carbonate (as CaCO3)					
Alkalinity, Hydroxide (as CaCO3)					
Alkalinity, Total (as CaCO3)					
Hardness (as CaCO3)					
Calcium					
Magnesium					
Potassium					
Sodium					
Chloride (Cl)					
Fluoride (F)					
Total Dissolved Solids (SNP-07)	X	X			
Sulphate (SO4)					
Reactive Silicate					
Nutrients — Rush (Y/N)	N	N			
Lab to Filter Dissolved Nutrients	X	X			
Ammonia, Total (as N)	X	X			
Nitrate and Nitrite (as N)	X	X			
Nitrate (as N)	X	X			
Nitrite (as N)	X	X			
Total Kjeldahl Nitrogen	X	X			
Orthophosphate-Dissolved (as P)	X	X			
Phosphorus (P)-Total Dissolved	X	X			
Phosphorus (P)-Total	X	X			
Phosphorus (P)-Dissolved Organic	X	X			
Phosphorus (P)-Total Inorganic	X	X			
Phosphorus (P)-Dissolved Inorganic	X	X			
Total Organic Carbon	X	X			
Aggregate Organics — Rush (Y/N)	N	N			
Biochemical Oxygen Demand (SNP-07)	X	X			
Oil and Grease (SNP-07)	X	X			
Metals — Rush (Y/N)					
Lab to Filter Dissolved Metals					
Total Metals (preserved with HNO3)					
Dissolved Metals (not preserved)					

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Rubidium, Selenium, Silver, Strontium, Thallium, Titanium, Uranium, Vanadium, Zinc.

Speciated Metals — Rush (Y/N)					
Hydrocarbons and VOCs — Rush (Y/N)	N	N			
BTEX, F1-F4	X	X			
Total Petroleum Hydrocarbons	X	X			
Bacteria — Rush (Y/N)	N	N			
Total Coliforms, Fecal Coliforms, and E. coli	X	X			
Radionuclides (SNP-08/09/10) — Rush (Y/N)					
Uranium and Thorium					
Radium-226 (if U & Th leach to grndwtr)					

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 20241002/ 05

Report To	Contact and company name below will appear on the final report
Company:	DeBeers Gahcho Kué
Contact:	Dave Ott/Michelle Burger
Phone:	867-679-5812/5814
	Company address below will appear on the final report
Street:	5120 49th Street Suite 300
City/Province:	Yellowknife, NT
Postal Code:	X1A 3S8
Invoice To	Same as Report To Yes No
	Copy of Invoice with Report Yes No
Company:	DeBeers Group
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8

Report Format / Distribution

Select Report Format: Quality Control (QC) Report with Report

Select Distribution:

Email 1 or Fax: Environment.GahchoKue@debeersgroup.com
Email 2: Dave.Ott@debeersgroup.com
Email 3: Michelle.Burger@debeersgroup.com

Invoice Distribution

Select Invoice Distribution:
Email 1 or Fax: ap.invoices@debeersgroup.com
Email 2: Mason.Elwood@debeersgroup.com

Project Information

ALS Account # / Quote #:
Job #: SNP-07 Monthly
PO / AFE: 4100968747
LSD:

Oil and Gas Required Fields (client use)

Approver ID: Cost Center:
GL Account: Routing Code:
Activity Code:
Location:

ALS Lab Work Order # (lab use only)

ALS Contact: Oliver Gregg Sampler: J. Vornbrock

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days): 4 day [P4-20%]; 3 day [P3-25%]; 2 day [P2-50%]

EMERGENCY: 1 Business day [E - 100%]; Same Day. Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]

Date and time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Routine	Total Nutrients	Dissolved Nutrients	BOD	Total Petroleum Hydrocarbons	Ultra Low TSS	Oil and Grease	Total Coliform	Faecal Coliform	E.Coli	BTEX	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
							P			P		P	P	P	P	P		
	SNP-07	2-Oct-24	14:27	Water	13	R	R	R	R	R	R	R	R	R	R	R		
	SNP-07-01	2-Oct-24	14:27	Water	13	R	R	R	R	R	R	R	R	R	R	R		

Environmental Division
Yellowknife
Work Order Reference
YL2401668

Telephone : +1 867 873 5593

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

Are samples for human drinking water use?

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
10.3							

SHIPMENT RELEASE (client use)

Released by: J. Vornbrock Date: 2-Oct-24 Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Oct 3/24 Time: 12:10

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0325e v08 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241002/ 05

Date: October 2, 2024

Sample Date	2-Oct-24	2-Oct-24			
Sample Name	SNP-07	SNP-07-01			
Physical Parameters — Rush (Y/N)	N	N			
Conductivity	X	X			
pH	X	X			
Total Suspended Solids (Ultra Low)	X	X			
Turbidity	X	X			
Major Ions — Rush (Y/N)	N	N			
Alkalinity, Bicarbonate (as CaCO3)					
Alkalinity, Carbonate (as CaCO3)					
Alkalinity, Hydroxide (as CaCO3)					
Alkalinity, Total (as CaCO3)					
Hardness (as CaCO3)					
Calcium					
Magnesium					
Potassium					
Sodium					
Chloride (Cl)					
Fluoride (F)					
Total Dissolved Solids (SNP-07)	X	X			
Sulphate (SO4)					
Reactive Silicate					
Nutrients — Rush (Y/N)	N	N			
Lab to Filter Dissolved Nutrients	X	X			
Ammonia, Total (as N)	X	X			
Nitrate and Nitrite (as N)	X	X			
Nitrate (as N)	X	X			
Nitrite (as N)	X	X			
Total Kjeldahl Nitrogen	X	X			
Orthophosphate-Dissolved (as P)	X	X			
Phosphorus (P)-Total Dissolved	X	X			
Phosphorus (P)-Total	X	X			
Phosphorus (P)-Dissolved Organic	X	X			
Phosphorus (P)-Total Inorganic	X	X			
Phosphorus (P)-Dissolved Inorganic	X	X			
Total Organic Carbon	X	X			
Aggregate Organics — Rush (Y/N)	N	N			
Biochemical Oxygen Demand (SNP-07)	X	X			
Oil and Grease (SNP-07)	X	X			
Metals — Rush (Y/N)					
Lab to Filter Dissolved Metals					
Total Metals (preserved with HNO3)					
Dissolved Metals (not preserved)					

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Rubidium, Selenium, Silver, Strontium, Thallium, Titanium, Uranium, Vanadium, Zinc.

Speciated Metals — Rush (Y/N)					
Hydrocarbons and VOCs — Rush (Y/N)	N	N			
BTEX, F1-F4	X	X			
Total Petroleum Hydrocarbons	X	X			
Bacteria — Rush (Y/N)	N	N			
Total Coliforms, Fecal Coliforms, and E. coli	X	X			
Radionuclides (SNP-08/09/10) — Rush (Y/N)					
Uranium and Thorium					
Radium-226 (if U & Th leach to grndwtr)					

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **YL2401690**		
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Edmonton
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife Northwest Territories Canada X1A 1P8	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-09 Monthly	Date Samples Received	: 08-Oct-2024 09:31
PO	: 4100968747	Date Analysis Commenced	: 11-Oct-2024
C-O-C number	: 20241006/ 01	Issue Date	: 25-Oct-2024 16:01
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Janice Leung	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Manpreet Cheema	Lab Assistant	Metals, Burnaby, British Columbia
Maya Urquhart	Lab Analyst	Metals, Burnaby, British Columbia
Oliver Gregg	Client Services Supervisor	External Subcontracting, Saskatoon, Saskatchewan
Owen Cheng		Metals, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
pH units	pH units
µS/cm	microsiemens per centimetre
NTU	nephelometric turbidity units
-	no units
Bq/L	becquerels per litre
µg/L	micrograms per litre

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLA	Detection Limit adjusted for required dilution.
SFP	Sample was filtered and preserved at the laboratory.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-09	----	----	----	----
				Client sampling date / time	05-Oct-2024 12:52	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401690-001	----	----	----	----
					Result	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	44.0	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	44.0	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	3090	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	926	----	----	----	----
pH	----	E108/VA	0.10	pH units	7.51	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	2310	----	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	74.7	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	51.2	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	3.10	----	----	----	----
Bromide	24959-67-9	E235.Br-U/VA	0.0500	mg/L	8.50	----	----	----	----
Chloride	16887-00-6	E235.Cl-L/VA	0.50	mg/L	712	----	----	----	----
Fluoride	16984-48-8	E235.F-L/VA	0.020	mg/L	0.544	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	3.69	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-T/VA	0.0030	mg/L	3.53	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/VA	0.0032	mg/L	3.59	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0050	mg/L	0.0584	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-09	----	----	----	----
				Client sampling date / time	05-Oct-2024 12:52	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401690-001	----	----	----	----
					Result	----	----	----	----
Anions and Nutrients									
Phosphorus, dissolved inorganic	----	E377-L/EO	0.0010	mg/L	0.0020 SFP	----	----	----	----
Phosphorus, dissolved organic	----	EC377-L.ORG/EO	0.0020	mg/L	<0.0020	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0540	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0020 SFP	----	----	----	----
Phosphorus, total inorganic	----	E376-L/EO	0.0010	mg/L	0.0633	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	8.18	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4-L/VA	0.300	mg/L	408	----	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	2.50	----	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	1.29	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	0.00044	----	----	----	----
Arsenic, total	7440-38-2	E420-L/VA	0.000030	mg/L	0.00110	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.0796	----	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L	0.000055	----	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000100 DLA	----	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L	1.24	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	<0.0000100 DLA	----	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	276	----	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000166	----	----	----	----
Chromium, total	7440-47-3	E420.Cr-L/VA	0.00010	mg/L	0.00632	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-09	----	----	----	----
				Client sampling date / time	05-Oct-2024 12:52	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401690-001	----	----	----	----
					Result	----	----	----	----
Total Metals									
Cobalt, total	7440-48-4	E420-L/VA	0.000050	mg/L	0.00226	----	----	----	----
Copper, total	7440-50-8	E420-L/VA	0.00015	mg/L	0.00237	----	----	----	----
Iron, total	7439-89-6	E420-L/VA	0.0050	mg/L	1.92	----	----	----	----
Lead, total	7439-92-1	E420-L/VA	0.000030	mg/L	0.000847	----	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0676	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	62.8	----	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.0823	----	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.0182	----	----	----	----
Nickel, total	7440-02-0	E420-L/VA	0.00010	mg/L	0.0515	----	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	14.5	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.0270	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	<0.000100 DLA	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	9.86	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000020 DLA	----	----	----	----
Sodium, total	7440-23-5	E420-L/VA	0.030	mg/L	226	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	6.63	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	144	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	0.00094	----	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	0.000069	----	----	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	0.00079	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-09	----	----	----	----
				Client sampling date / time	05-Oct-2024 12:52	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401690-001	----	----	----	----
					Result	----	----	----	----
Total Metals									
Tin, total	7440-31-5	E420-L/VA	0.000050	mg/L	<0.000100 DLA	----	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	0.0494	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	0.00028	----	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.00405	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	0.00414	----	----	----	----
Zinc, total	7440-66-6	E420-L/VA	0.0015	mg/L	0.0050	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	0.00125	----	----	----	----
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0032	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	0.00044	----	----	----	----
Arsenic, dissolved	7440-38-2	E421-L/VA	0.000030	mg/L	0.000869	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.0497	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L	<0.000040 DLA	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000100 DLA	----	----	----	----
Boron, dissolved	7440-42-8	E421-L/VA	0.0050	mg/L	1.10	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	<0.0000100 DLA	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	268	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000134	----	----	----	----
Chromium, dissolved	7440-47-3	E421.Cr-L/VA	0.00010	mg/L	<0.00020 DLA	----	----	----	----
Cobalt, dissolved	7440-48-4	E421-L/VA	0.000050	mg/L	0.000321	----	----	----	----
Copper, dissolved	7440-50-8	E421-L/VA	0.00015	mg/L	0.00110	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-09	----	----	----	----
				Client sampling date / time	05-Oct-2024 12:52	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401690-001	----	----	----	----
					Result	----	----	----	----
Dissolved Metals									
Iron, dissolved	7439-89-6	E421-L/VA	0.0050	mg/L	<0.0100 DLA	----	----	----	----
Lead, dissolved	7439-92-1	E421-L/VA	0.000030	mg/L	<0.000060 DLA	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.0609	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	62.3	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.0552	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.0183	----	----	----	----
Nickel, dissolved	7440-02-0	E421-L/VA	0.00010	mg/L	0.0245	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	15.2	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.0254	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	<0.000100 DLA	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	4.29	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000020 DLA	----	----	----	----
Sodium, dissolved	7440-23-5	E421-L/VA	0.010	mg/L	214	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	214	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	6.80	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	157	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	0.00048	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	0.000058	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00020 DLA	----	----	----	----
Tin, dissolved	7440-31-5	E421-L/VA	0.000050	mg/L	<0.000100 DLA	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-09	----	----	----	----
				Client sampling date / time	05-Oct-2024 12:52	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401690-001	----	----	----	----
					Result	----	----	----	----
Dissolved Metals									
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	<0.00060 DLA	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	0.00027	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.00393	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	<0.00100 DLA	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	<0.0020 DLA	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L	<0.00040 DLA	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-	Laboratory	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Laboratory	----	----	----	----
Volatile Organic Compounds [Fuels]									
Benzene	71-43-2	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Ethylbenzene	100-41-4	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Styrene	100-42-5	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Toluene	108-88-3	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Xylene, m+p-	179601-23-1	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Xylene, o-	95-47-6	E611A/VA	0.00050	mg/L	<0.00050	----	----	----	----
Xylenes, total	1330-20-7	E611A/VA	0.00075	mg/L	<0.00075	----	----	----	----
Hydrocarbons									
F1 (C6-C10)	----	E581.VH+F1/VA	0.10	mg/L	<0.10	----	----	----	----
F1-BTEX	----	EC580/VA	0.100	mg/L	<0.100	----	----	----	----
F2 (C10-C16)	----	E601/VA	0.10	mg/L	<0.10	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-09	----	----	----	----
				Client sampling date / time	05-Oct-2024 12:52	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401690-001	----	----	----	----
					Result	----	----	----	----
Hydrocarbons									
F3 (C16-C34)	----	E601/VA	0.25	mg/L	<0.25	----	----	----	----
F4 (C34-C50)	----	E601/VA	0.25	mg/L	<0.25	----	----	----	----
Hydrocarbons, total (C6-C50)	n/a	EC581/VA	0.40	mg/L	<0.40	----	----	----	----
TEH (C10-C50)	n/a	E601/VA	0.40	mg/L	<0.40	----	----	----	----
TEH (C16-C50)	----	E601/VA	0.40	mg/L	<0.40	----	----	----	----
Hydrocarbons Surrogates									
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	E601/VA	1.0	%	75.1	----	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%	96.3	----	----	----	----
Volatile Organic Compounds Surrogates									
Bromofluorobenzene, 4-	460-00-4	E611A/VA	1.0	%	90.1	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611A/VA	1.0	%	99.7	----	----	----	----
Radiological Parameters									
Thorium-234	15065-10-8	NORMS/2I	4	Bq/L	<4	----	----	----	----
Thorium-230	14269-63-7	NORMS/2I	20	Bq/L	<20	----	----	----	----
Thorium-228	14274-82-9	NORMS/2I	0.4	Bq/L	<0.4	----	----	----	----
Uranium-238	7440-61-1	U-238/2I	0.001	Bq/L	0.055	----	----	----	----
Uranium-234	13966-29-5	U-234/2I	0.001	Bq/L	0.055	----	----	----	----
Uranium-235	15117-96-1	U-235/2I	0.00006	Bq/L	0.0028	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2401690**	Page	: 1 of 18
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-09 Monthly	Date Samples Received	: 08-Oct-2024 09:31
PO	: 4100968747	Issue Date	: 25-Oct-2024 16:01
C-O-C number	: 20241006/ 01		
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- Duplicate outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Dissolved Metals	QC-MRG3-1704459 001	----	Sodium, dissolved	7440-23-5	E421-L	0.029 B mg/L	0.01 mg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	*Description*
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Duplicate (DUP) RPDs								
Physical Tests	Anonymous	Anonymous	Alkalinity, phenolphthalein (as CaCO3)	----	E290	2.0 %	Diff <2x LOR	Low Level DUP DQO exceeded (difference > 2 LOR).

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-09	E298	05-Oct-2024	11-Oct-2024	28 days	6 days	✓	12-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-09	E235.Br-U	05-Oct-2024	10-Oct-2024	28 days	5 days	✓	10-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-09	E235.Cl-L	05-Oct-2024	10-Oct-2024	28 days	5 days	✓	10-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-09	E377-L	05-Oct-2024	16-Oct-2024	3 days	11 days	× EHTL	17-Oct-2024	28 days	1 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE SNP-09	E378-U	05-Oct-2024	10-Oct-2024	3 days	5 days	× EHTL	10-Oct-2024	3 days	5 days	× EHTL
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE SNP-09	E235.F-L	05-Oct-2024	10-Oct-2024	28 days	5 days	✓	10-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE SNP-09	E235.NO3-T	05-Oct-2024	10-Oct-2024	3 days	5 days	× EHTL	10-Oct-2024	3 days	5 days	× EHTL

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-09	E235.NO2-L	05-Oct-2024	10-Oct-2024	3 days	5 days	✗ EHTL	10-Oct-2024	3 days	5 days	✗ EHTL
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP-09	E392	05-Oct-2024	----	----	----		10-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE										
SNP-09	E235.SO4-L	05-Oct-2024	10-Oct-2024	28 days	5 days	✓	10-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-09	E375-U	05-Oct-2024	15-Oct-2024	3 days	10 days	✗ EHTL	15-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-09	E376-L	05-Oct-2024	16-Oct-2024	28 days	11 days	✓	17-Oct-2024	28 days	12 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
SNP-09	E318	05-Oct-2024	11-Oct-2024	28 days	6 days	✓	15-Oct-2024	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-09	E372-S	05-Oct-2024	15-Oct-2024	28 days	10 days	✓	15-Oct-2024	28 days	10 days	✓
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved)										
SNP-09	E421.Cr-L	05-Oct-2024	11-Oct-2024	180 days	6 days	✓	11-Oct-2024	180 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SNP-09	E509	05-Oct-2024	15-Oct-2024	28 days	10 days	✓	15-Oct-2024	28 days	10 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)										
HDPE - dissolved (lab preserved)										
SNP-09	E421-L	05-Oct-2024	11-Oct-2024	180 days	6 days	✓	12-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SNP-09	E421	05-Oct-2024	11-Oct-2024	180 days	6 days	✓	12-Oct-2024	180 days	7 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate)										
SNP-09	E601	05-Oct-2024	12-Oct-2024	14 days	7 days	✓	16-Oct-2024	40 days	4 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate)										
SNP-09	E581.VH+F1	05-Oct-2024	12-Oct-2024	14 days	7 days	✓	12-Oct-2024	14 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP-09	E355-L	05-Oct-2024	11-Oct-2024	28 days	6 days	✓	11-Oct-2024	28 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
SNP-09	E290	05-Oct-2024	10-Oct-2024	14 days	5 days	✓	11-Oct-2024	14 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE										
SNP-09	E100	05-Oct-2024	10-Oct-2024	28 days	5 days	✓	11-Oct-2024	28 days	6 days	✓
Physical Tests : pH by Meter										
HDPE										
SNP-09	E108	05-Oct-2024	10-Oct-2024	0.25 hrs	129 hrs	✗ EHTR-FM	11-Oct-2024	0.25 hrs	139 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE										
SNP-09	E162	05-Oct-2024	----	----	----		12-Oct-2024	7 days	7 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-09	E160-L	05-Oct-2024	----	----	----		12-Oct-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE SNP-09	E121	05-Oct-2024	----	----	----		12-Oct-2024	3 days	7 days	✗ EHTL
Radiological Parameters : NORMS (Ra-226/228,Th-228/230/234,Pb-210,K-40) by Gamma Spectroscopy in Water										
HDPE (nitric acid) SNP-09	NORMS	05-Oct-2024	----	----	----		21-Oct-2024	----	----	
Radiological Parameters : Uranium 234 in Water										
HDPE (nitric acid) SNP-09	U-234	05-Oct-2024	----	----	----		24-Oct-2024	----	19 days	
Radiological Parameters : Uranium 235 in Water										
HDPE (nitric acid) SNP-09	U-235	05-Oct-2024	----	----	----		24-Oct-2024	----	19 days	
Radiological Parameters : Uranium 238										
HDPE (nitric acid) SNP-09	U-238	05-Oct-2024	----	----	----		24-Oct-2024	----	19 days	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) SNP-09	E420.Cr-L	05-Oct-2024	12-Oct-2024	180 days	7 days	✓	13-Oct-2024	180 days	8 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) SNP-09	E508	05-Oct-2024	14-Oct-2024	28 days	9 days	✓	14-Oct-2024	28 days	9 days	✓
Total Metals : Total Metals by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) SNP-09	E420-L	05-Oct-2024	12-Oct-2024	180 days	7 days	✓	14-Oct-2024	180 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP-09	E420	05-Oct-2024	12-Oct-2024	180 days	7 days	✓	14-Oct-2024	180 days	9 days	✓
Volatile Organic Compounds : BTEX by Headspace GC-MS										
Glass vial (sodium bisulfate)										
SNP-09	E611A	05-Oct-2024	12-Oct-2024	14 days	7 days	✓	12-Oct-2024	14 days	7 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1703028	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1704625	1	14	7.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1703040	1	6	16.6	5.0	✓
BTEX by Headspace GC-MS	E611A	1706465	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1703037	1	6	16.6	5.0	✓
Conductivity in Water	E100	1703029	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1704462	1	2	50.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1710739	1	2	50.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1710105	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1704459	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1704461	1	2	50.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1703042	1	9	11.1	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1703038	1	6	16.6	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1703039	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1703035	1	20	5.0	5.0	✓
pH by Meter	E108	1703027	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1703191	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1703041	1	6	16.6	5.0	✓
TDS by Gravimetry	E162	1706837	1	16	6.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1705528	1	3	33.3	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1708297	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1710737	1	2	50.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1704627	1	5	20.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1707925	1	9	11.1	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1705527	2	3	66.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1705526	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1704624	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1708304	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1706389	1	15	6.6	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1706466	1	18	5.5	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1703028	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1704625	1	14	7.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1703040	1	6	16.6	5.0	✓
BTEX by Headspace GC-MS	E611A	1706465	1	20	5.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID	E601	1706124	1	1	100.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Chloride in Water by IC (Low Level)	E235.Cl-L	1703037	1	6	16.6	5.0	✓
Conductivity in Water	E100	1703029	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1704462	1	2	50.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1710739	1	2	50.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1710105	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1704459	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1704461	1	2	50.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1703042	1	9	11.1	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1703038	1	6	16.6	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1703039	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1703035	1	20	5.0	5.0	✓
pH by Meter	E108	1703027	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1703191	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1703041	1	6	16.6	5.0	✓
TDS by Gravimetry	E162	1706837	1	16	6.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1705528	1	3	33.3	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1708297	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1710737	1	2	50.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1704627	1	5	20.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1707925	1	9	11.1	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1705527	1	3	33.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1705526	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1704624	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1708304	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1706831	1	16	6.2	5.0	✓
Turbidity by Nephelometry	E121	1706389	1	15	6.6	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1706466	1	18	5.5	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1703028	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1704625	1	14	7.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1703040	1	6	16.6	5.0	✓
BTEX by Headspace GC-MS	E611A	1706465	1	20	5.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID	E601	1706124	1	1	100.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1703037	1	6	16.6	5.0	✓
Conductivity in Water	E100	1703029	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1704462	1	2	50.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1710739	1	2	50.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1710105	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1704459	1	18	5.5	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB) - Continued							
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1704461	1	2	50.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1703042	1	9	11.1	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1703038	1	6	16.6	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1703039	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1703035	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1703191	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1703041	1	6	16.6	5.0	✓
TDS by Gravimetry	E162	1706837	1	16	6.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1705528	1	3	33.3	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1708297	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1710737	1	2	50.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1704627	1	5	20.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1707925	1	9	11.1	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1705527	1	3	33.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1705526	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1704624	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1708304	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1706831	1	16	6.2	5.0	✓
Turbidity by Nephelometry	E121	1706389	1	15	6.6	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1706466	1	18	5.5	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1704625	1	14	7.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1703040	1	6	16.6	5.0	✓
BTEX by Headspace GC-MS	E611A	1706465	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1703037	1	6	16.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1704462	1	2	50.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1710739	1	2	50.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1710105	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1704459	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1704461	1	2	50.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1703042	1	9	11.1	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1703038	1	6	16.6	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1703039	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1703035	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1703191	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1703041	1	6	16.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1705528	1	3	33.3	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1708297	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1710737	1	2	50.0	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1704627	1	5	20.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1707925	1	9	11.1	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1705527	1	3	33.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1705526	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1704624	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1708304	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1706466	1	18	5.5	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry (Low Level)	E160-L ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide by IC (Ultra Trace Level)	E235.Br-U ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC (Low Level)	E235.F-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Trace Level)	E235.NO3-T ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC (Low Level)	E235.SO4-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Total Inorganic Phosphorus is determined colourimetrically after sample has undergone H2SO4 hydrolysis
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved Inorganic Phosphorus is determined colourimetrically after H_2SO_4 hydrolysis of a sample that has been lab or field filtered through a 0.45 micron membrane filter

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Total Metals by CRC ICPMS (Low Level)	E420-L ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L ALS Environmental - Vancouver	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L ALS Environmental - Vancouver	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
VH and F1 by Headspace GC-FID	E581.VH+F1 ALS Environmental - Vancouver	Water	BC MOE Lab Manual / CCME PHC in Soil - Tier 1 (mod)	Volatile Hydrocarbons (VH and F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
CCME PHCs - F2-F4 by GC-FID	E601 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	Sample extracts are analyzed by GC-FID for CCME hydrocarbon fractions (F2-F4). Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
BTEX by Headspace GC-MS	E611A ALS Environmental - Vancouver	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Vancouver	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Phosphorus, dissolved organic (0.0014 mg/L) by calculation.	EC377-L.ORG ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved inorganic phosphorus is subtracted from total dissolved phosphorus to determine dissolved organic phosphorus.
F1-BTEX	EC580 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	F1-BTEX is calculated as follows: F1-BTEX = F1 (C6-C10) minus benzene, toluene, ethylbenzene and xylenes (BTEX).
Sum F1 to F4 (C6-C50)	EC581 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	Hydrocarbons, total (C6-C50) is the sum of CCME Fractions F1(C6-C10), F2(C10-C16), F3(C16-C34), and F4(C34-C50). F4G-sg is not used within this calculation due to overlap with other fractions.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
NORMS (Ra-226/228,Th-228/230/234,Pb-210,K-40) by Gamma Spectroscopy in Water	NORMS Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		Naturally Occurring Radioactive Materials are analyzed using a gamma spectroscopy scan. See attached report for details.
Uranium 234 in Water	U-234 Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		See attached report.
Uranium 235 in Water	U-235 Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		See attached report.
Uranium 238	U-238 Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water	See attached report	See attached report.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Digestion for Total Inorganic Phosphorus in water	EP376 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples undergo H2SO4 hydrolysis.
Digestion for Dissolved Inorganic Phosphorus in water	EP377 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then undergo H2SO4 hydrolysis.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Vancouver	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID.
PHCs and PAHs Hexane Extraction	EP601 ALS Environmental - Vancouver	Water	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.

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QUALITY CONTROL REPORT

Work Order	: **YL2401690**	Page	: 1 of 21
Client	: De Beers Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-09 Monthly	Date Samples Received	: 08-Oct-2024 09:31
PO	: 4100968747	Date Analysis Commenced	: 10-Oct-2024
C-O-C number	: 20241006/ 01	Issue Date	: 25-Oct-2024 16:01
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Janice Leung	Supervisor - Organics Instrumentation	Vancouver Organics, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Vancouver Inorganics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
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Maya Urquhart	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Oliver Gregg	Client Services Supervisor	Saskatchewan Research Council External Subcontracting, Saskatoon, Saskatchewan
Owen Cheng		Vancouver Metals, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Edmonton Inorganics, Edmonton, Alberta

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1703027)											
VA24C6951-003	Anonymous	pH	----	E108	0.10	pH units	8.33	8.34	0.120%	4%	----
Physical Tests (QC Lot: 1703028)											
VA24C6951-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	444	431	2.97%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	10.2	14.2	32.8%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	5.1	# 7.1	2.0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	455	446	2.00%	20%	----
Physical Tests (QC Lot: 1703029)											
VA24C6951-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	13600	13500	0.296%	10%	----
Physical Tests (QC Lot: 1706389)											
VA24C7038-001	Anonymous	Turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1706837)											
KS2404189-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	3790	3800	0.264%	20%	----
Anions and Nutrients (QC Lot: 1703035)											
VA24C6951-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0200	mg/L	<0.0200	<0.0200	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1703037)											
YL2401685-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	5.00	mg/L	1700	1650	3.30%	20%	----
Anions and Nutrients (QC Lot: 1703038)											
YL2401685-001	Anonymous	Fluoride	16984-48-8	E235.F-L	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1703039)											
YL2401685-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	0.150	mg/L	0.757	0.745	0.0122	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1703040)											
YL2401685-001	Anonymous	Bromide	24959-67-9	E235.Br-U	0.250	mg/L	15.2	14.8	2.61%	20%	----
Anions and Nutrients (QC Lot: 1703041)											
YL2401685-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	2.50	mg/L	965	936	3.04%	20%	----
Anions and Nutrients (QC Lot: 1703042)											
VA24C7081-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1703191)											
CG2414763-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	4.05	4.06	0.02	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 1704625)											
VA24C5009-005	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1704627)											
VA24C6991-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.250	mg/L	20.5	20.5	0.199%	20%	----
Anions and Nutrients (QC Lot: 1708297)											
EO2408918-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.185	0.184	0.850%	20%	----
Anions and Nutrients (QC Lot: 1708304)											
FC2402787-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.648	0.646	0.389%	20%	----
Anions and Nutrients (QC Lot: 1710737)											
YL2401689-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0010	mg/L	0.0071	0.0083	0.0012	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1710739)											
YL2401689-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0010	mg/L	0.0025	0.0017	0.0008	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1704624)											
VA24C5009-005	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 1705526)											
YL2401689-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0527	0.0525	0.350%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0107	0.0105	1.67%	20%	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	0.046	0.046	0.00007	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	6.80	6.65	2.23%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000011	0.000012	0.0000007	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0024	0.0023	0.00006	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	2.48	2.51	1.43%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0578	0.0573	0.896%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000069	0.000072	0.000004	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	1.82	1.77	2.72%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00282	0.00265	6.53%	20%	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	0.39	0.35	0.04	Diff <2x LOR	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0741	0.0734	1.02%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	1.45	1.38	0.07	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 1705526) - continued											
YL2401689-001	Anonymous	Tellurium, total	13494-80-9	E420	0.00020	mg/L	0.00021	0.00020	0.000002	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00159	0.00157	0.00002	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000027	0.000023	0.000004	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1705527)											
YL2401689-001	Anonymous	Nickel, total	7440-02-0	E420-L	0.00010	mg/L	0.00109	0.00103	5.86%	20%	----
YL2401689-001	Anonymous	Arsenic, total	7440-38-2	E420-L	0.000030	mg/L	0.000239	0.000222	0.000017	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420-L	0.000050	mg/L	0.000352	0.000359	0.000007	Diff <2x LOR	----
		Copper, total	7440-50-8	E420-L	0.00015	mg/L	0.00096	0.00095	0.000004	Diff <2x LOR	----
		Iron, total	7439-89-6	E420-L	0.0050	mg/L	0.228	0.230	1.10%	20%	----
		Lead, total	7439-92-1	E420-L	0.000030	mg/L	0.000051	0.000050	0.0000007	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420-L	0.030	mg/L	5.47	5.42	0.872%	20%	----
		Tin, total	7440-31-5	E420-L	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420-L	0.0015	mg/L	0.0023	0.0023	0.00005	Diff <2x LOR	----
Total Metals (QC Lot: 1705528)											
YL2401689-001	Anonymous	Chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00031	0.00025	0.00006	Diff <2x LOR	----
Total Metals (QC Lot: 1707925)											
VA24C6691-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0000323	0.0000314	0.0000009	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1704459)											
YL2401689-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0083	0.0086	0.0003	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00970	0.00942	2.94%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	6.43	6.51	1.25%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0022	0.0022	0.00002	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	2.41	2.39	0.833%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00026	0.00030	0.00004	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1704459) - continued											
YL2401689-001	Anonymous	Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000062	0.000058	0.000004	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.67	1.65	1.33%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00274	0.00280	2.15%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	0.269	0.265	0.004	Diff <2x LOR	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	4.89	4.90	0.0908%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0740	0.0727	1.79%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	1.65	1.41	0.24	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000015	0.000015	0.0000003	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1704461)											
YL2401689-001	Anonymous	Arsenic, dissolved	7440-38-2	E421-L	0.000030	mg/L	0.000210	0.000198	0.000012	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421-L	0.0050	mg/L	0.0390	0.0409	0.0019	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421-L	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	0.00060	0.00060	0.000008	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421-L	0.0050	mg/L	0.0168	0.0170	0.0002	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421-L	0.000030	mg/L	<0.000030	<0.000030	0	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421-L	0.00010	mg/L	0.00061	0.00062	0.00001	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421-L	0.010	mg/L	4.89	4.90	0.0908%	20%	----
		Tin, dissolved	7440-31-5	E421-L	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1704462)											
YL2401689-001	Anonymous	Chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1710105)											
VA24C6648-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1706465)											
VA24C6378-001	Anonymous	Benzene	71-43-2	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 1706465) - continued											
VA24C6378-001	Anonymous	Ethylbenzene	100-41-4	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Styrene	100-42-5	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Toluene	108-88-3	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611A	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611A	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1706466)											
VA24C6717-001	Anonymous	F1 (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1703028)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1703029)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1706389)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1706831)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 1706837)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1703035)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1703037)						
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1703038)						
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1703039)						
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	<0.0030	----
Anions and Nutrients (QCLot: 1703040)						
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1703041)						
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1703042)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1703191)						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1704625)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1704627)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1704627) - continued						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1708297)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1708304)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1710737)						
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1710739)						
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 1704624)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 1705526)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1705526) - continued						
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 1705527)						
Arsenic, total	7440-38-2	E420-L	0.00003	mg/L	<0.000030	----
Cobalt, total	7440-48-4	E420-L	0.00005	mg/L	<0.000050	----
Copper, total	7440-50-8	E420-L	0.00015	mg/L	<0.00015	----
Iron, total	7439-89-6	E420-L	0.005	mg/L	<0.0050	----
Lead, total	7439-92-1	E420-L	0.00003	mg/L	<0.000030	----
Nickel, total	7440-02-0	E420-L	0.0001	mg/L	<0.00010	----
Sodium, total	7440-23-5	E420-L	0.03	mg/L	<0.030	----
Tin, total	7440-31-5	E420-L	0.00005	mg/L	<0.000050	----
Zinc, total	7440-66-6	E420-L	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1705528)						
Chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	----
Total Metals (QCLot: 1707925)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1704459)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1704459) - continued						
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 1704461)						
Arsenic, dissolved	7440-38-2	E421-L	0.00003	mg/L	<0.000030	----
Boron, dissolved	7440-42-8	E421-L	0.005	mg/L	<0.0050	----
Cobalt, dissolved	7440-48-4	E421-L	0.00005	mg/L	<0.000050	----
Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	<0.00015	----
Iron, dissolved	7439-89-6	E421-L	0.005	mg/L	<0.0050	----
Lead, dissolved	7439-92-1	E421-L	0.00003	mg/L	<0.000030	----
Nickel, dissolved	7440-02-0	E421-L	0.0001	mg/L	<0.00010	----
Sodium, dissolved	7440-23-5	E421-L	0.01	mg/L	# 0.029	B
Tin, dissolved	7440-31-5	E421-L	0.00005	mg/L	<0.000050	----
Dissolved Metals (QCLot: 1704462)						
Chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 1710105)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Volatile Organic Compounds (QCLot: 1706465)						
Benzene	71-43-2	E611A	0.5	µg/L	<0.50	----
Ethylbenzene	100-41-4	E611A	0.5	µg/L	<0.50	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.5	µg/L	<0.50	----
Styrene	100-42-5	E611A	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611A	0.5	µg/L	<0.50	----
Xylene, m+p-	179601-23-1	E611A	0.4	µg/L	<0.40	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1706465) - continued						
Xylene, o-	95-47-6	E611A	0.3	µg/L	<0.30	----
Hydrocarbons (QCLot: 1706124)						
F2 (C10-C16)	----	E601	100	µg/L	<100	----
F3 (C16-C34)	----	E601	250	µg/L	<250	----
F4 (C34-C50)	----	E601	250	µg/L	<250	----
Hydrocarbons (QCLot: 1706466)						
F1 (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----

Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1703027)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1703028)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	93.8	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1703029)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	103	90.0	110	----
Physical Tests (QCLot: 1706389)									
Turbidity	----	E121	0.1	NTU	200 NTU	97.0	85.0	115	----
Physical Tests (QCLot: 1706831)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	94.2	85.0	115	----
Physical Tests (QCLot: 1706837)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 1703035)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1703037)									
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1703038)									
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1703039)									
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1703040)									
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1703041)									
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1703042)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	99.8	80.0	120	----
Anions and Nutrients (QCLot: 1703191)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1704625)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 1704627)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1704627) - continued									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1708297)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	99.0	80.0	120	----
Anions and Nutrients (QCLot: 1708304)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	99.0	80.0	120	----
Anions and Nutrients (QCLot: 1710737)									
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	0.05 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 1710739)									
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	0.05 mg/L	103	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1704624)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	100	80.0	120	----
Total Metals (QCLot: 1705526)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	101	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	99.2	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	98.9	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	106	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	94.6	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	98.0	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	96.6	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	97.6	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	102	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	106	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	110	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	100	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	102	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	92.8	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	98.3	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	92.9	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	99.0	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	102	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1705526) - continued									
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	97.3	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	104	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	98.8	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	99.8	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	98.0	80.0	120	----
Total Metals (QCLot: 1705527)									
Arsenic, total	7440-38-2	E420-L	0.00003	mg/L	1 mg/L	105	80.0	120	----
Cobalt, total	7440-48-4	E420-L	0.00005	mg/L	0.25 mg/L	99.8	80.0	120	----
Copper, total	7440-50-8	E420-L	0.00015	mg/L	0.25 mg/L	102	80.0	120	----
Iron, total	7439-89-6	E420-L	0.005	mg/L	1 mg/L	99.9	80.0	120	----
Lead, total	7439-92-1	E420-L	0.00003	mg/L	0.5 mg/L	101	80.0	120	----
Nickel, total	7440-02-0	E420-L	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
Sodium, total	7440-23-5	E420-L	0.03	mg/L	50 mg/L	108	80.0	120	----
Tin, total	7440-31-5	E420-L	0.00005	mg/L	0.5 mg/L	100	80.0	120	----
Zinc, total	7440-66-6	E420-L	0.0015	mg/L	0.5 mg/L	98.6	80.0	120	----
Total Metals (QCLot: 1705528)									
Chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Total Metals (QCLot: 1707925)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	97.7	80.0	120	----
Dissolved Metals (QCLot: 1704459)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	97.7	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	96.2	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	97.4	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	95.9	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	98.6	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	97.5	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	95.7	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	95.4	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	96.8	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	99.0	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	97.6	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	97.6	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	101	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1704459) - continued									
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	96.7	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	102	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	90.6	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	96.4	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	95.2	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	98.9	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	103	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	97.5	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	95.7	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	98.3	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	90.6	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	96.7	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	97.6	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	99.1	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	95.4	80.0	120	----
Dissolved Metals (QCLot: 1704461)									
Arsenic, dissolved	7440-38-2	E421-L	0.00003	mg/L	1 mg/L	102	80.0	120	----
Boron, dissolved	7440-42-8	E421-L	0.005	mg/L	1 mg/L	90.8	80.0	120	----
Cobalt, dissolved	7440-48-4	E421-L	0.00005	mg/L	0.25 mg/L	96.8	80.0	120	----
Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	0.25 mg/L	97.4	80.0	120	----
Iron, dissolved	7439-89-6	E421-L	0.005	mg/L	1 mg/L	96.2	80.0	120	----
Lead, dissolved	7439-92-1	E421-L	0.00003	mg/L	0.5 mg/L	96.3	80.0	120	----
Nickel, dissolved	7440-02-0	E421-L	0.0001	mg/L	0.5 mg/L	95.9	80.0	120	----
Sodium, dissolved	7440-23-5	E421-L	0.01	mg/L	50 mg/L	96.4	80.0	120	----
Tin, dissolved	7440-31-5	E421-L	0.00005	mg/L	0.5 mg/L	95.7	80.0	120	----
Dissolved Metals (QCLot: 1704462)									
Chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	99.8	80.0	120	----
Volatile Organic Compounds (QCLot: 1706465)									
Benzene	71-43-2	E611A	0.5	µg/L	100 µg/L	88.6	70.0	130	----
Ethylbenzene	100-41-4	E611A	0.5	µg/L	100 µg/L	83.3	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.5	µg/L	100 µg/L	99.4	70.0	130	----
Styrene	100-42-5	E611A	0.5	µg/L	100 µg/L	81.7	70.0	130	----
Toluene	108-88-3	E611A	0.5	µg/L	100 µg/L	84.4	70.0	130	----
Xylene, m+p-	179601-23-1	E611A	0.4	µg/L	200 µg/L	88.6	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1706465) - continued									
Xylene, o-	95-47-6	E611A	0.3	µg/L	100 µg/L	82.2	70.0	130	----
Hydrocarbons (QCLot: 1706124)									
F2 (C10-C16)	----	E601	100	µg/L	3540 µg/L	116	70.0	130	----
F3 (C16-C34)	----	E601	250	µg/L	7050 µg/L	99.8	70.0	130	----
F4 (C34-C50)	----	E601	250	µg/L	5050 µg/L	122	70.0	130	----
Hydrocarbons (QCLot: 1706466)									
F1 (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	95.4	70.0	130	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1703035)										
VA24C6951-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	10.1 mg/L	10 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1703037)										
YL2401685-002	Anonymous	Chloride	16887-00-6	E235.Cl-L	108 mg/L	100 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 1703038)										
YL2401685-002	Anonymous	Fluoride	16984-48-8	E235.F-L	1.07 mg/L	1 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 1703039)										
YL2401685-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	2.69 mg/L	2.5 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 1703040)										
YL2401685-002	Anonymous	Bromide	24959-67-9	E235.Br-U	0.551 mg/L	0.5 mg/L	110	75.0	125	----
Anions and Nutrients (QCLot: 1703041)										
YL2401685-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	109 mg/L	100 mg/L	109	75.0	125	----
Anions and Nutrients (QCLot: 1703042)										
VA24C7081-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0265 mg/L	0.03 mg/L	88.3	70.0	130	----
Anions and Nutrients (QCLot: 1703191)										
EO2408927-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1704625)										
VA24C6749-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.103 mg/L	0.1 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1704627)										
VA24C6991-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	23.3 mg/L	25 mg/L	93.1	70.0	130	----
Anions and Nutrients (QCLot: 1708297)										
EO2408960-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1708304)										
FC2402790-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0740 mg/L	0.067 mg/L	110	70.0	130	----
Anions and Nutrients (QCLot: 1710737)										
YL2401690-001	SNP-09	Phosphorus, total inorganic	----	E376-L	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1710739)										
YL2401690-001	SNP-09	Phosphorus, dissolved inorganic	----	E377-L	0.0572 mg/L	0.05 mg/L	114	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1704624)										
VA24C6991-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Total Metals (QCLot: 1705526)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1705526) - continued										
YL2401690-001	SNP-09	Aluminum, total	7429-90-5	E420	ND mg/L	----	ND	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0371 mg/L	0.04 mg/L	92.7	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0764 mg/L	0.08 mg/L	95.6	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0170 mg/L	0.02 mg/L	84.9	70.0	130	----
		Boron, total	7440-42-8	E420	ND mg/L	----	ND	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00745 mg/L	0.008 mg/L	93.1	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0184 mg/L	0.02 mg/L	92.3	70.0	130	----
		Lithium, total	7439-93-2	E420	0.182 mg/L	0.2 mg/L	91.1	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0399 mg/L	0.04 mg/L	99.7	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	ND mg/L	----	ND	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0735 mg/L	0.08 mg/L	91.8	70.0	130	----
		Silicon, total	7440-21-3	E420	18.4 mg/L	20 mg/L	92.0	70.0	130	----
		Silver, total	7440-22-4	E420	0.00738 mg/L	0.008 mg/L	92.2	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	----	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0786 mg/L	0.08 mg/L	98.2	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00673 mg/L	0.008 mg/L	84.1	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0384 mg/L	0.04 mg/L	95.9	70.0	130	----
		Titanium, total	7440-32-6	E420	ND mg/L	----	ND	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0357 mg/L	0.04 mg/L	89.2	70.0	130	----
		Uranium, total	7440-61-1	E420	ND mg/L	----	ND	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.193 mg/L	0.2 mg/L	96.4	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0748 mg/L	0.08 mg/L	93.5	70.0	130	----
Total Metals (QCLot: 1705527)										
YL2401690-001	SNP-09	Arsenic, total	7440-38-2	E420-L	0.0389 mg/L	0.04 mg/L	97.3	70.0	130	----
		Cobalt, total	7440-48-4	E420-L	0.0353 mg/L	0.04 mg/L	88.3	70.0	130	----
		Copper, total	7440-50-8	E420-L	0.0349 mg/L	0.04 mg/L	87.3	70.0	130	----
		Iron, total	7439-89-6	E420-L	3.57 mg/L	4 mg/L	89.3	70.0	130	----
		Lead, total	7439-92-1	E420-L	0.0338 mg/L	0.04 mg/L	84.4	70.0	130	----
		Nickel, total	7440-02-0	E420-L	ND mg/L	----	ND	70.0	130	----
		Sodium, total	7440-23-5	E420-L	ND mg/L	----	ND	70.0	130	----
		Tin, total	7440-31-5	E420-L	0.0384 mg/L	0.04 mg/L	96.1	70.0	130	----
		Zinc, total	7440-66-6	E420-L	0.693 mg/L	0.8 mg/L	86.6	70.0	130	----
Total Metals (QCLot: 1705528)										
YL2401690-001	SNP-09	Chromium, total	7440-47-3	E420.Cr-L	0.0756 mg/L	0.08 mg/L	94.5	70.0	130	----
Total Metals (QCLot: 1707925)										
VA24C6691-002	Anonymous	Mercury, total	7439-97-6	E508	0.0000993 mg/L	0 mg/L	99.3	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1704459)										
YL2401690-001	SNP-09	Aluminum, dissolved	7429-90-5	E421	0.382 mg/L	0.4 mg/L	95.4	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0384 mg/L	0.04 mg/L	95.9	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0746 mg/L	0.08 mg/L	93.2	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.0175 mg/L	0.02 mg/L	87.5	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00750 mg/L	0.008 mg/L	93.8	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.170 mg/L	0.2 mg/L	85.1	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	ND mg/L	----	ND	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0758 mg/L	0.08 mg/L	94.8	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	18.9 mg/L	20 mg/L	94.4	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00760 mg/L	0.008 mg/L	95.0	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	ND mg/L	----	ND	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0793 mg/L	0.08 mg/L	99.1	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00721 mg/L	0.008 mg/L	90.1	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0394 mg/L	0.04 mg/L	98.4	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0748 mg/L	0.08 mg/L	93.5	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0366 mg/L	0.04 mg/L	91.4	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00741 mg/L	0.008 mg/L	92.7	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.193 mg/L	0.2 mg/L	96.5	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.738 mg/L	0.8 mg/L	92.3	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0786 mg/L	0.08 mg/L	98.3	70.0	130	----
Dissolved Metals (QCLot: 1704461)										
YL2401690-001	SNP-09	Arsenic, dissolved	7440-38-2	E421-L	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
		Boron, dissolved	7440-42-8	E421-L	ND mg/L	----	ND	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421-L	0.0359 mg/L	0.04 mg/L	89.8	70.0	130	----
		Copper, dissolved	7440-50-8	E421-L	0.0347 mg/L	0.04 mg/L	86.7	70.0	130	----
		Iron, dissolved	7439-89-6	E421-L	3.58 mg/L	4 mg/L	89.6	70.0	130	----
		Lead, dissolved	7439-92-1	E421-L	0.0364 mg/L	0.04 mg/L	90.9	70.0	130	----
		Nickel, dissolved	7440-02-0	E421-L	0.0687 mg/L	0.08 mg/L	85.9	70.0	130	----
		Sodium, dissolved	7440-23-5	E421-L	ND mg/L	----	ND	70.0	130	----
		Tin, dissolved	7440-31-5	E421-L	0.0381 mg/L	0.04 mg/L	95.3	70.0	130	----
Dissolved Metals (QCLot: 1704462)										
YL2401690-001	SNP-09	Chromium, dissolved	7440-47-3	E421.Cr-L	0.0763 mg/L	0.08 mg/L	95.4	70.0	130	----
Dissolved Metals (QCLot: 1710105)										
VA24C6648-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000982 mg/L	0 mg/L	98.2	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1706465)										
VA24C6379-001	Anonymous	Benzene	71-43-2	E611A	89.7 µg/L	100 µg/L	89.7	60.0	140	----
		Ethylbenzene	100-41-4	E611A	80.5 µg/L	100 µg/L	80.5	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	99.6 µg/L	100 µg/L	99.6	60.0	140	----
		Styrene	100-42-5	E611A	85.1 µg/L	100 µg/L	85.1	60.0	140	----
		Toluene	108-88-3	E611A	80.9 µg/L	100 µg/L	80.9	60.0	140	----
		Xylene, m+p-	179601-23-1	E611A	170 µg/L	200 µg/L	85.2	60.0	140	----
		Xylene, o-	95-47-6	E611A	81.6 µg/L	100 µg/L	81.6	60.0	140	----
Hydrocarbons (QCLot: 1706466)										
VA24C6717-002	Anonymous	F1 (C6-C10)	----	E581.VH+F1	5170 µg/L	6310 µg/L	82.0	60.0	140	----

SASKATCHEWAN RESEARCH COUNCIL

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143-111 Research Drive, Saskatoon, SK Canada S7N 3R2

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Test Report

SRC Group # 2024-13083

Oct 25, 2024

ALS
314 Old Airport Road, Unit 116
Yellowknife, NT X1A 3T3
Attn: Oliver Gregg

Date Samples Received: Oct-11-2024 Client P.O.: YL2401690

All results have been reviewed and approved by a Qualified Person in accordance with the Saskatchewan Environmental Code, Corrective Action Plan Chapter, for the purposes of certifying a laboratory analysis

Results from Lab Section 4 approved by Snook, Vicky
Results from Lab Section 2 approved by Britton, Stephanie

Test methods and data are validated by the laboratory's Quality Assurance Program.

Routine methods follow recognized procedures from sources such as
- -Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF
- -Environment Canada
- -US EPA
- -CANMET

The results reported relate only to the test samples as provided by the client. Results apply to the sample as received, unless otherwise indicated.

Data marked as "by Client" has been provided by the client and may affect the validity of results.

Samples will be kept for 30 days after the final report is sent. Please contact the lab if you have any special requirements.

Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Analytes denoted with * are accredited by CALA to ISO/IEC 17025:2017.

Additional information is available upon request.

This is a final report.

SASKATCHEWAN RESEARCH COUNCIL
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Test Report

SRC Group # 2024-13083

Oct 25, 2024

ALS
314 Old Airport Road, Unit 116
Yellowknife, NT X1A 3T3
Attn : Oliver Gregg

Date Samples Received: Oct-11-2024 Client P.O.: YL2401690
SRC Lab # 37333 Sample Type: WATER

10/05/2024 13:52 SNP-09 YL2401690-001

Analyte Name	Units	Results	Unconditional Release Limit
Uranium-234 calculated	Bq/L	0.055	none set
Uranium-235 calculated	Bq/L	0.0028	none set
Uranium-238 calculated	Bq/L	0.055	10
Radium-228*	Bq/L	<0.9	5
Thorium-228	Bq/L	<0.4	1
Thorium-234*	Bq/L	<4	10
Thorium-230*	Bq/L	<20	5
Radium-226*	Bq/L	<6	5
Lead-210*	Bq/L	<5	1
Potassium-40*	Bq/L	<5	none set

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 10.1 °C upon receipt.

Sample preparation and Analysis Method
A 500 mL aliquot of each sample was measured into a standard Marinelli beaker, sealed with tape, and a high resolution gamma ray spectrometric measurement was performed using a hyperpure Ge detector housed in a 10cm lead castle.
Gamma Spectroscopy (Rad-300) detection limits vary and are influenced by several factors. "Less than" values reported above represent the lowest detection limits achievable for the sample.
Radium 228 and Thorium 228 are not directly detected by Gamma spectroscopy, instead, they are inferred from Actinium 228 and Lead 212.
Concentration of Uranium was determined by Inductively Coupled Plasma Mass Spectrometry (ICP-MS). The activity of Uranium-238 was calculated from the ICP-MS results based on natural abundance.

Sum of Ratios = 11

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Test Report

SRC Group # 2024-13083

Oct 25, 2024

This sample exceeds the unconditional derived release limits for diffuse NORM sources for one or more isotopes set by the Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials table 5.1.

SASKATCHEWAN RESEARCH COUNCIL

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Test Report

SRC Group # 2024-13083

Oct 25, 2024

Analyte Methods

Name	Units	Method
Uranium-234 calculated	Bq/L	Chm-522
Uranium-235 calculated	Bq/L	Chm-522
Uranium-238 calculated	Bq/L	Chm-522
Potassium-40	Bq/L	Rad-300
Lead-210	Bq/L	Rad-300
Radium-226	Bq/L	Rad-300
Radium-228	Bq/L	Rad-300
Thorium-228	Bq/L	Rad-300
Thorium-230	Bq/L	Rad-300
Thorium-234	Bq/L	Rad-300

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 20241006/ 01

Report To	Contact and company name below will appear on the final report
Company:	DeBeers Gahcho Kué
Contact:	Dave Ott/Michelle Burger
Phone:	867-679-5812/5814
	Company address below will appear on the final report
Street:	5120 49th Street Suite 300
City/Province:	Yellowknife, NT
Postal Code:	X1A 3S8
Invoice To	Same as Report To Yes No
	Copy of Invoice with Report Yes No
Company:	DeBeers Group
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8

Report Format / Distribution

Select Report Format: Quality Control (QC) Report with Report

Select Distribution:

Email 1 or Fax: Environment.GahchoKue@debeersgroup.com
Email 2: Dave.Ott@debeersgroup.com
Email 3: Michelle.Burger@debeersgroup.com

Invoice Distribution

Select Invoice Distribution:
Email 1 or Fax: ap.invoices@debeersgroup.com
Email 2: Mason.Elwood@debeersgroup.com

Project Information

ALS Account # / Quote #:
Job #: SNP-09 Monthly
PO / AFE: 4100968747
LSD:

Oil and Gas Required Fields (client use)

Approver ID: Cost Center:
GL Account: Routing Code:
Activity Code:
Location:

ALS Lab Work Order # (lab use only)

ALS Contact: Oliver Gregg Sampler: J. Vornbrock

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days): 4 day [P4-20%]; 3 day [P3-25%]; 2 day [P2-50%]

EMERGENCY: 1 Business day [E - 100%]; Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]

Date and time Required for all E&P TA: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical Parameters	Major Ions	Total Nutrients	Dissolved Nutrients	Total Metals	Dissolved Metals	Total Mercury	Dissolved Mercury	BTEX	Total Petroleum Hydrocarbons	Radionuclides	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
								P				P		P	P	P		
	SNP-09	5-Oct-24	12:52	Water	16	R	R	R	R	R	R	R	R	R	R	R		

Environmental Division
Yellowknife
Work Order Reference
YL2401690

Telephone : +1 867 873 5593

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

Are samples for human drinking water use?

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
4.5	

SHIPMENT RELEASE (client use)

Released by: J. Vornbrock Date: 6-Oct-24 Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: 08/24 OCT Time: 9:31

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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NA-PM-0328e v06 Final/E4 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241006/ 01

Date: October 6, 2024

Sample Date	5-Oct-24				
Sample Name	SNP-09				
Physical Parameters Rush (Y/N)	N				
Conductivity	X				
pH	X				
Total Suspended Solids (Ultra Low)	X				
Turbidity	X				
Major Ions Rush (Y/N)	N				
Alkalinity, Bicarbonate (as CaCO3)	X				
Alkalinity, Carbonate (as CaCO3)	X				
Alkalinity, Hydroxide (as CaCO3)	X				
Alkalinity, Total (as CaCO3)	X				
Hardness (as CaCO3)	X				
Calcium	X				
Magnesium	X				
Potassium	X				
Sodium	X				
Chloride (Cl)	X				
Fluoride (F)	X				
Total Dissolved Solids (SNP-07)	X				
Sulphate (SO4)	X				
Reactive Silicate	X				
Nutrients Rush (Y/N)	N				
Lab to Filter Dissolved Nutrients	X				
Ammonia, Total (as N)	X				
Nitrate and Nitrite (as N)	X				
Nitrate (as N)	X				
Nitrite (as N)	X				
Total Kjeldahl Nitrogen	X				
Orthophosphate-Dissolved (as P)	X				
Phosphorus (P)-Total Dissolved	X				
Phosphorus (P)-Total	X				
Phosphorus (P)-Dissolved Organic	X				
Phosphorus (P)-Total Inorganic	X				
Phosphorus (P)-Dissolved Inorganic	X				
Total Organic Carbon	X				
Aggregate Organics Rush (Y/N)					
Biochemical Oxygen Demand (SNP-07)					
Oil and Grease (SNP-07)					
Metals Rush (Y/N)	N				
Lab to Filter Dissolved Metals	X				
Total Metals (preserved with HNO3)	X				
Dissolved Metals (not preserved)	X				

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Rubidium, Selenium, Silver, Strontium, Thallium, Titanium, Uranium, Vanadium, Zinc.

Speciated Metals Rush (Y/N)	N				
Hydrocarbons and VOCs Rush (Y/N)	N				
BTEX, F1-F4	X				
Total Petroleum Hydrocarbons	X				
Bacteria Rush (Y/N)					
Total Coliforms, Fecal Coliforms, and E. coli					
Radionuclides (SNP-08/09/10) Rush (Y/N)	N				
Uranium and Thorium	X				
Radium-226 (if U & Th leach to grndwtr)					

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CERTIFICATE OF ANALYSIS

Work Order	: **YL2401737**		
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Edmonton
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife Northwest Territories Canada X1A 1P8	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Weekly	Date Samples Received	: 15-Oct-2024 11:11
PO	: 4100968747	Date Analysis Commenced	: 18-Oct-2024
C-O-C number	: 20241014/02	Issue Date	: 22-Oct-2024 15:46
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Daniel Shabestani	Lab Assistant	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
pH units	pH units
µS/cm	microsiemens per centimetre
NTU	nephelometric turbidity units
-	no units

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
SFP	Sample was filtered and preserved at the laboratory.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	12-Oct-2024 11:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401737-001	----	----	----	----
					Result	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	88.4	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	88.4	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	4190	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	1290	----	----	----	----
pH	----	E108/VA	0.10	pH units	7.95	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	3630	----	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	109	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	59.8	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	2.45	----	----	----	----
Bromide	24959-67-9	E235.Br-U/VA	0.0500	mg/L	13.4	----	----	----	----
Chloride	16887-00-6	E235.Cl-L/VA	0.50	mg/L	1040	----	----	----	----
Fluoride	16984-48-8	E235.F-L/VA	0.020	mg/L	0.643	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	3.28	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-T/VA	0.0030	mg/L	9.03	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/VA	0.0032	mg/L	9.21	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0050	mg/L	0.179	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	12-Oct-2024 11:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401737-001	----	----	----	----
					Result	----	----	----	----
Anions and Nutrients									
Phosphorus, dissolved inorganic	----	E377-L/EO	0.0010	mg/L	<0.0010 SFP	----	----	----	----
Phosphorus, dissolved organic	----	EC377-L.ORG/EO	0.0020	mg/L	0.0046	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.149	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0046 SFP	----	----	----	----
Phosphorus, total inorganic	----	E376-L/EO	0.0010	mg/L	0.153	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	9.93	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4-L/VA	0.300	mg/L	511	----	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	1.94	----	----	----	----
Dissolved Metals									
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	379	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	82.5	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	11.6	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	357	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Laboratory	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2401737**	Page	: 1 of 12
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Weekly	Date Samples Received	: 15-Oct-2024 11:11
PO	: 4100968747	Issue Date	: 22-Oct-2024 15:57
C-O-C number	: 20241014/02		
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-08	E298	12-Oct-2024	19-Oct-2024	28 days	7 days	✓	19-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-08	E235.Br-U	12-Oct-2024	19-Oct-2024	28 days	7 days	✓	19-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-08	E235.Cl-L	12-Oct-2024	19-Oct-2024	28 days	7 days	✓	19-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-08	E377-L	12-Oct-2024	21-Oct-2024	3 days	9 days	× EHTL	21-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE SNP-08	E378-U	12-Oct-2024	19-Oct-2024	3 days	7 days	× EHTL	19-Oct-2024	3 days	7 days	× EHTL
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE SNP-08	E235.F-L	12-Oct-2024	19-Oct-2024	28 days	7 days	✓	19-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE SNP-08	E235.NO3-T	12-Oct-2024	19-Oct-2024	3 days	7 days	× EHTL	19-Oct-2024	3 days	7 days	× EHTL

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-08	E235.NO2-L	12-Oct-2024	19-Oct-2024	3 days	7 days	✗ EHTL	19-Oct-2024	3 days	7 days	✗ EHTL
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP-08	E392	12-Oct-2024	----	----	----		18-Oct-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE										
SNP-08	E235.SO4-L	12-Oct-2024	19-Oct-2024	28 days	7 days	✓	19-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-08	E375-U	12-Oct-2024	18-Oct-2024	3 days	6 days	✗ EHTL	18-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-08	E376-L	12-Oct-2024	21-Oct-2024	28 days	9 days	✓	21-Oct-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
SNP-08	E318	12-Oct-2024	19-Oct-2024	28 days	7 days	✓	21-Oct-2024	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-08	E372-S	12-Oct-2024	18-Oct-2024	28 days	6 days	✓	18-Oct-2024	28 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SNP-08	E421	12-Oct-2024	21-Oct-2024	180 days	9 days	✓	21-Oct-2024	180 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP-08	E355-L	12-Oct-2024	19-Oct-2024	28 days	7 days	✓	19-Oct-2024	28 days	7 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE SNP-08	E290	12-Oct-2024	19-Oct-2024	14 days	7 days	✓	19-Oct-2024	14 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP-08	E100	12-Oct-2024	19-Oct-2024	28 days	7 days	✓	19-Oct-2024	28 days	7 days	✓
Physical Tests : pH by Meter										
HDPE SNP-08	E108	12-Oct-2024	19-Oct-2024	0.25 hrs	163 hrs	✗ EHTR-FM	19-Oct-2024	0.25 hrs	167 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SNP-08	E162	12-Oct-2024	----	----	----		19-Oct-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-08	E160-L	12-Oct-2024	----	----	----		19-Oct-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE SNP-08	E121	12-Oct-2024	----	----	----		22-Oct-2024	3 days	10 days	✗ EHTL

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1718209	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	1718202	1	15	6.6	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1718221	1	1	100.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1718219	1	1	100.0	5.0	✓
Conductivity in Water	E100	1718210	1	14	7.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1720077	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1719183	1	12	8.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1718224	1	6	16.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1718220	1	1	100.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1718218	1	3	33.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1718216	1	16	6.2	5.0	✓
pH by Meter	E108	1718208	1	17	5.8	5.0	✓
Reactive Silica by Colourimetry	E392	1717978	1	12	8.3	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1718222	1	1	100.0	5.0	✓
TDS by Gravimetry	E162	1718479	1	10	10.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1716052	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1720078	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1718200	1	12	8.3	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1718201	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1716726	1	2	50.0	5.0	✓
Turbidity by Nephelometry	E121	1722426	1	11	9.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1718209	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	1718202	1	15	6.6	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1718221	1	1	100.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1718219	1	1	100.0	5.0	✓
Conductivity in Water	E100	1718210	1	14	7.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1720077	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1719183	1	12	8.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1718224	1	6	16.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1718220	1	1	100.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1718218	1	3	33.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1718216	1	16	6.2	5.0	✓
pH by Meter	E108	1718208	1	17	5.8	5.0	✓
Reactive Silica by Colourimetry	E392	1717978	1	12	8.3	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1718222	1	1	100.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
TDS by Gravimetry	E162	1718479	1	10	10.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1716052	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1720078	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1718200	1	12	8.3	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1718201	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1716726	1	2	50.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1718458	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	1722426	1	11	9.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1718209	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	1718202	1	15	6.6	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1718221	1	1	100.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1718219	1	1	100.0	5.0	✓
Conductivity in Water	E100	1718210	1	14	7.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1720077	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1719183	1	12	8.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1718224	1	6	16.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1718220	1	1	100.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1718218	1	3	33.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1718216	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1717978	1	12	8.3	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1718222	1	1	100.0	5.0	✓
TDS by Gravimetry	E162	1718479	1	10	10.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1716052	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1720078	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1718200	1	12	8.3	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1718201	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1716726	1	2	50.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1718458	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	1722426	1	11	9.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1718202	1	15	6.6	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1718221	0	1	0.0	5.0	×
Chloride in Water by IC (Low Level)	E235.Cl-L	1718219	0	1	0.0	5.0	×
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1720077	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1719183	1	12	8.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1718224	1	6	16.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1718220	0	1	0.0	5.0	×
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1718218	1	3	33.3	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Nitrite in Water by IC (Low Level)	E235.NO2-L	1718216	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1717978	1	12	8.3	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1718222	0	1	0.0	5.0	×
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1716052	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1720078	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1718200	1	12	8.3	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1718201	0	10	0.0	5.0	×
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1716726	1	2	50.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry (Low Level)	E160-L ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide by IC (Ultra Trace Level)	E235.Br-U ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC (Low Level)	E235.F-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Trace Level)	E235.NO3-T ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC (Low Level)	E235.SO4-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Total Inorganic Phosphorus is determined colourimetrically after sample has undergone H2SO4 hydrolysis
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved Inorganic Phosphorus is determined colourimetrically after H_2SO_4 hydrolysis of a sample that has been lab or field filtered through a 0.45 micron membrane filter

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Vancouver	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Phosphorus, dissolved organic (0.0014 mg/L) by calculation.	EC377-L.ORG ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved inorganic phosphorus is subtracted from total dissolved phosphorus to determine dissolved organic phosphorus.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
	ALS Environmental - Edmonton			
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Digestion for Total Inorganic Phosphorus in water	EP376 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples undergo H2SO4 hydrolysis.
Digestion for Dissolved Inorganic Phosphorus in water	EP377 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then undergo H2SO4 hydrolysis.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

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QUALITY CONTROL REPORT

Work Order	: **YL2401737**	Page	: 1 of 9
Client	: De Beers Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Weekly	Date Samples Received	: 15-Oct-2024 11:11
PO	: 4100968747	Date Analysis Commenced	: 18-Oct-2024
C-O-C number	: 20241014/02	Issue Date	: 22-Oct-2024 15:59
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta
Daniel Shabestani	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Monica Ko	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1718208)											
VA24C7453-001	Anonymous	pH	----	E108	0.10	pH units	8.27	8.25	0.242%	4%	----
Physical Tests (QC Lot: 1718209)											
VA24C7453-001	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	136	136	0.294%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	136	136	0.294%	20%	----
Physical Tests (QC Lot: 1718210)											
VA24C7453-001	Anonymous	Conductivity	----	E100	2.0	µS/cm	272	272	0.00%	10%	----
Physical Tests (QC Lot: 1718479)											
VA24C7770-005	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	850	796	6.50%	20%	----
Physical Tests (QC Lot: 1722426)											
VA24C8164-003	Anonymous	Turbidity	----	E121	0.10	NTU	6.16	6.17	0.162%	15%	----
Anions and Nutrients (QC Lot: 1716052)											
KS2404204-006	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0014	0.0018	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1716726)											
YL2401720-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0132	0.0132	0.227%	20%	----
Anions and Nutrients (QC Lot: 1717978)											
VA24C7885-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	2.61	2.62	0.01	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1718200)											
VA24C7342-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	1.00	mg/L	40.1	38.4	4.22%	20%	----
Anions and Nutrients (QC Lot: 1718202)											
VA24C7342-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.500	mg/L	16.8	17.2	1.98%	20%	----
Anions and Nutrients (QC Lot: 1718216)											
KS2404338-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0500	mg/L	0.0882	0.0852	0.0030	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1718218)											
VA24C7706-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	0.0030	mg/L	0.0691	0.0698	1.11%	20%	----
Anions and Nutrients (QC Lot: 1718219)											
YL2401737-001	SNP-08	Chloride	16887-00-6	E235.Cl-L	2.00	mg/L	1040	1040	0.00219%	20%	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1718220)											
YL2401737-001	SNP-08	Fluoride	16984-48-8	E235.F-L	0.200	mg/L	0.643	0.656	0.014	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1718221)											
YL2401737-001	SNP-08	Bromide	24959-67-9	E235.Br-U	0.100	mg/L	13.4	13.3	0.478%	20%	----
Anions and Nutrients (QC Lot: 1718222)											
YL2401737-001	SNP-08	Sulfate (as SO4)	14808-79-8	E235.SO4-L	1.00	mg/L	511	509	0.299%	20%	----
Anions and Nutrients (QC Lot: 1718224)											
KS2404343-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.100	mg/L	2.98	3.00	0.536%	20%	----
Anions and Nutrients (QC Lot: 1720077)											
YL2401720-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0010	mg/L	0.0016	0.0012	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1720078)											
YL2401720-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0010	mg/L	0.0072	0.0075	0.0003	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1718201)											
VA24C7342-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	53.8	56.5	4.87%	20%	----
Dissolved Metals (QC Lot: 1719183)											
YL2401753-001	Anonymous	Calcium, dissolved	7440-70-2	E421	0.050	mg/L	171	176	2.82%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	42.7	42.6	0.395%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	11.0	10.8	1.09%	20%	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	171	167	2.44%	20%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1718209)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1718210)						
Conductivity	----	E100	1	µS/cm	1.1	----
Physical Tests (QCLot: 1718458)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 1718479)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1722426)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 1716052)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1716726)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1717978)						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1718200)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1718202)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1718216)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1718218)						
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	<0.0030	----
Anions and Nutrients (QCLot: 1718219)						
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1718220)						
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1718221)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1718221) - continued						
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1718222)						
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1718224)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1720077)						
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1720078)						
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 1718201)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Dissolved Metals (QCLot: 1719183)						
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1718208)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 1718209)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	98.0	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 1718210)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	107	90.0	110	----
Physical Tests (QCLot: 1718458)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	96.4	85.0	115	----
Physical Tests (QCLot: 1718479)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	102	85.0	115	----
Physical Tests (QCLot: 1722426)									
Turbidity	----	E121	0.1	NTU	200 NTU	97.0	85.0	115	----
Anions and Nutrients (QCLot: 1716052)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1716726)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1717978)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	99.6	85.0	115	----
Anions and Nutrients (QCLot: 1718200)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1718202)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.0	85.0	115	----
Anions and Nutrients (QCLot: 1718216)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.3	90.0	110	----
Anions and Nutrients (QCLot: 1718218)									
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	2.5 mg/L	98.2	90.0	110	----
Anions and Nutrients (QCLot: 1718219)									
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	98.3	90.0	110	----
Anions and Nutrients (QCLot: 1718220)									
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	1 mg/L	97.3	90.0	110	----
Anions and Nutrients (QCLot: 1718221)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1718221) - continued									
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	0.5 mg/L	108	85.0	115	----
Anions and Nutrients (QCLot: 1718222)									
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 1718224)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	120	80.0	120	----
Anions and Nutrients (QCLot: 1720077)									
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1720078)									
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	0.05 mg/L	103	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1718201)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	103	80.0	120	----
Dissolved Metals (QCLot: 1719183)									
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	97.9	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	104	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1716052)										
EO2409164-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1716726)										
YL2401737-001	SNP-08	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1717978)										
VA24C7885-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	11.1 mg/L	10 mg/L	111	75.0	125	----
Anions and Nutrients (QCLot: 1718200)										
VA24C7393-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.59 mg/L	2.5 mg/L	104	70.0	130	----
Anions and Nutrients (QCLot: 1718202)										
VA24C7375-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1718216)										
VA24C7453-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.473 mg/L	0.5 mg/L	94.7	75.0	125	----
Anions and Nutrients (QCLot: 1718218)										
VA24C7722-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	2.52 mg/L	2.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1718224)										
KS2404343-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1720077)										
YL2401737-001	SNP-08	Phosphorus, dissolved inorganic	----	E377-L	0.0581 mg/L	0.05 mg/L	116	70.0	130	----
Anions and Nutrients (QCLot: 1720078)										
YL2401737-001	SNP-08	Phosphorus, total inorganic	----	E376-L	ND mg/L	----	ND	70.0	130	----
Dissolved Metals (QCLot: 1719183)										
VA24C7963-003	Anonymous	Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	4.00 mg/L	4 mg/L	100.0	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 20241014/ 02

Report To	Contact and company name below will appear on the final report
Company:	DeBeers Gahcho Kué
Contact:	Dave Ott/Michelle Burger
Phone:	867-679-5812/5814
	Company address below will appear on the final report
Street:	5120 49th Street Suite 300
City/Province:	Yellowknife, NT
Postal Code:	X1A 3S8

Report Format / Distribution

Select Report Format:
Quality Control (QC) Report with Report

Select Distribution:
Email 1 or Fax: Environment.GahchoKue@debeersgroup.com
Email 2: Dave.Ott@debeersgroup.com
Email 3: Michelle.Burger@debeersgroup.com

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days): 4 day [P4-20%]; 3 day [P3-25%]; 2 day [P2-50%]

EMERGENCY: 1 Business day [E - 100%]; Same Day. Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]

Date and time Required for all E&P TA: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To	Yes	No
	Copy of Invoice with Report	Yes	No
Company:	DeBeers Group		
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8		

Invoice Distribution

Select Invoice Distribution:
Email 1 or Fax: ap.invoices@debeersgroup.com
Email 2: Mason.Elwood@debeersgroup.com

Project Information

ALS Account # / Quote #:	
Job #:	SNP-08 Weekly
PO / AFE:	4100968747
LSD:	

Oil and Gas Required Fields (client use)

Approver ID:	Cost Center:
GL Account:	Routing Code:
Activity Code:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler: J. Vornbrock

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical Parameters	Major Ions	Total Nutrients (P)	Dissolved Nutrients	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	SNP-08	12-Oct-24	11:00	Water	4	R	R	R	R		

Environmental Division
Yellowknife
Work Order Reference
YL2401737

Telephone : + 1 867 873 5593

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

Are samples for human drinking water use?

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
5.1	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: J. Vornbrock	Date: 14-Oct-24	Time:	Received by:	Date: 15/OCT/24	Time: 1111	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY NA-FM-0328e v08 Front,04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241014/ 02

Date: October 14, 2024

	12-Oct-24				
	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date
	SNP-08				
	Sample Name	Sample Name	Sample Name	Sample Name	Sample Name
Physical Parameters **Rush (Y/N)**	N				
Conductivity	X				
pH	X				
Total Suspended Solids (Ultra Low)	X				
Turbidity	X				
Major Ions **Rush (Y/N)**	N				
Alkalinity, Bicarbonate (as CaCO3)	X				
Alkalinity, Carbonate (as CaCO3)	X				
Alkalinity, Hydroxide (as CaCO3)	X				
Alkalinity, Total (as CaCO3)	X				
Hardness (as CaCO3)	X				
Calcium	X				
Magnesium	X				
Potassium	X				
Sodium	X				
Chloride (Cl)	X				
Fluoride (F)	X				
Total Dissolved Solids (SNP-07)	X				
Sulphate (SO4)	X				
Reactive Silicate	X				
Nutrients **Rush (Y/N)**	N				
Lab to Filter Dissolved Nutrients	X				
Ammonia, Total (as N)	X				
Nitrate and Nitrite (as N)	X				
Nitrate (as N)	X				
Nitrite (as N)	X				
Total Kjeldahl Nitrogen	X				
Orthophosphate-Dissolved (as P)	X				
Phosphorus (P)-Total Dissolved	X				
Phosphorus (P)-Total	X				
Phosphorus (P)-Dissolved Organic	X				
Phosphorus (P)-Total Inorganic	X				
Phosphorus (P)-Dissolved Inorganic	X				
Total Organic Carbon	X				
Aggregate Organics **Rush (Y/N)**					
Biochemical Oxygen Demand (SNP-07)					
Oil and Grease (SNP-07)					
Metals **Rush (Y/N)**					
Lab to Filter Dissolved Metals					
Total Metals (preserved with HNO3)					
Dissolved Metals (not preserved)					

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Rubidium, Selenium, Silver, Strontium, Thallium, Titanium, Uranium, Vanadium, Zinc.

Speciated Metals **Rush (Y/N)**					
Hydrocarbons and VOCs **Rush (Y/N)**					
BTEX, F1-F4					
Total Petroleum Hydrocarbons					
Bacteria **Rush (Y/N)**					
Total Coliforms, Fecal Coliforms, and E. coli					
Radionuclides (SNP-08/09/10) **Rush (Y/N)**					
Uranium and Thorium					
Radium-226 (if U & Th leach to grndwtr)					

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CERTIFICATE OF ANALYSIS

Work Order	: **YL2401740**		
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Edmonton
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife Northwest Territories Canada X1A 1P8	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Weekly	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Date Analysis Commenced	: 22-Oct-2024
C-O-C number	: 20241015/ 01	Issue Date	: 24-Oct-2024 16:00
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Kate Dimitrova	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Manpreet Cheema	Lab Assistant	Metals, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units
µS/cm	microsiemens per centimetre
-	no units

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
SFP	Sample was filtered and preserved at the laboratory.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	15-Oct-2024 08:39	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401740-001	----	----	----	----
					Result	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	88.6	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	88.6	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	4820	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	1500	----	----	----	----
pH	----	E108/VA	0.10	pH units	7.94	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	3310	----	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	95.0	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	48.2	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	2.15	----	----	----	----
Bromide	24959-67-9	E235.Br-U/VA	0.0500	mg/L	16.3	----	----	----	----
Chloride	16887-00-6	E235.Cl-L/VA	0.50	mg/L	1270	----	----	----	----
Fluoride	16984-48-8	E235.F-L/VA	0.020	mg/L	0.540	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	2.96	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-T/VA	0.0030	mg/L	6.48	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/VA	0.0032	mg/L	6.80	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0050	mg/L	0.318	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	15-Oct-2024 08:39	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401740-001	----	----	----	----
					Result	----	----	----	----
Anions and Nutrients									
Phosphorus, dissolved inorganic	----	E377-L/EO	0.0010	mg/L	<0.0010 SFP	----	----	----	----
Phosphorus, dissolved organic	----	EC377-L.ORG/EO	0.0020	mg/L	0.0041	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.120	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0041	----	----	----	----
Phosphorus, total inorganic	----	E376-L/EO	0.0010	mg/L	0.113	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	9.91	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4-L/VA	0.300	mg/L	550	----	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	2.59	----	----	----	----
Dissolved Metals									
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	455	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	88.3	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	12.2	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	399	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Laboratory	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2401740**	Page	: 1 of 13
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Weekly	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Issue Date	: 24-Oct-2024 15:58
C-O-C number	: 20241015/ 01		
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Anions and Nutrients	QC-1722034-001	----	Ammonia, total (as N)	7664-41-7	E298	0.0058 B mg/L	0.005 mg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	*Description*
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-08	E298	15-Oct-2024	22-Oct-2024	28 days	7 days	✓	22-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-08	E235.Br-U	15-Oct-2024	21-Oct-2024	28 days	7 days	✓	21-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-08	E235.Cl-L	15-Oct-2024	21-Oct-2024	28 days	7 days	✓	21-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-08	E377-L	15-Oct-2024	23-Oct-2024	3 days	8 days	× EHT	24-Oct-2024	28 days	1 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE SNP-08	E378-U	15-Oct-2024	21-Oct-2024	3 days	7 days	× EHT	21-Oct-2024	3 days	7 days	× EHT
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE SNP-08	E235.F-L	15-Oct-2024	21-Oct-2024	28 days	7 days	✓	21-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE SNP-08	E235.NO3-T	15-Oct-2024	21-Oct-2024	3 days	7 days	× EHT	21-Oct-2024	3 days	7 days	× EHT

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-08	E235.NO2-L	15-Oct-2024	21-Oct-2024	3 days	7 days	✗ EHT	21-Oct-2024	3 days	7 days	✗ EHT
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP-08	E392	15-Oct-2024	----	----	----		22-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE										
SNP-08	E235.SO4-L	15-Oct-2024	21-Oct-2024	28 days	7 days	✓	21-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-08	E375-U	15-Oct-2024	23-Oct-2024	3 days	8 days	✗ EHT	23-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-08	E376-L	15-Oct-2024	23-Oct-2024	28 days	8 days	✓	24-Oct-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
SNP-08	E318	15-Oct-2024	22-Oct-2024	28 days	7 days	✓	23-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-08	E372-S	15-Oct-2024	23-Oct-2024	28 days	8 days	✓	23-Oct-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SNP-08	E421	15-Oct-2024	22-Oct-2024	180 days	7 days	✓	22-Oct-2024	180 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP-08	E355-L	15-Oct-2024	22-Oct-2024	28 days	7 days	✓	22-Oct-2024	28 days	7 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE SNP-08	E290	15-Oct-2024	21-Oct-2024	14 days	7 days	✓	22-Oct-2024	14 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP-08	E100	15-Oct-2024	21-Oct-2024	28 days	7 days	✓	22-Oct-2024	28 days	7 days	✓
Physical Tests : pH by Meter										
HDPE SNP-08	E108	15-Oct-2024	21-Oct-2024	0.25 hrs	156 hrs	✗ EHTR-FM	22-Oct-2024	0.25 hrs	167 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SNP-08	E162	15-Oct-2024	----	----	----		22-Oct-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-08	E160-L	15-Oct-2024	----	----	----		22-Oct-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE SNP-08	E121	15-Oct-2024	----	----	----		22-Oct-2024	3 days	7 days	✗ EHT

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1722034	1	20	5.0	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722240	1	7	14.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
pH by Meter	E108	1721854	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1724207	1	19	5.2	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	19	5.2	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1722037	1	4	25.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1722031	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	1724051	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1722034	1	20	5.0	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722240	1	7	14.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
pH by Meter	E108	1721854	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
TDS by Gravimetry	E162	1724207	1	19	5.2	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	19	5.2	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1722037	1	4	25.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1722031	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	19	5.2	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1724200	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	1724051	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1722034	1	20	5.0	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722240	1	7	14.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1724207	1	19	5.2	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	19	5.2	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1722037	1	4	25.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1722031	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	19	5.2	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1724200	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	1724051	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1722034	1	20	5.0	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722240	1	7	14.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	19	5.2	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1722037	1	4	25.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1722031	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	19	5.2	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry (Low Level)	E160-L ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide by IC (Ultra Trace Level)	E235.Br-U ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC (Low Level)	E235.F-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Trace Level)	E235.NO3-T ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC (Low Level)	E235.SO4-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Total Inorganic Phosphorus is determined colourimetrically after sample has undergone H2SO4 hydrolysis
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved Inorganic Phosphorus is determined colourimetrically after H_2SO_4 hydrolysis of a sample that has been lab or field filtered through a 0.45 micron membrane filter

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Vancouver	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Phosphorus, dissolved organic (0.0014 mg/L) by calculation.	EC377-L.ORG ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved inorganic phosphorus is subtracted from total dissolved phosphorus to determine dissolved organic phosphorus.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
	ALS Environmental - Edmonton			
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Digestion for Total Inorganic Phosphorus in water	EP376 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples undergo H2SO4 hydrolysis.
Digestion for Dissolved Inorganic Phosphorus in water	EP377 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then undergo H2SO4 hydrolysis.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

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QUALITY CONTROL REPORT

Work Order	: **YL2401740**	Page	: 1 of 10
Client	: De Beers Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Weekly	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Date Analysis Commenced	: 21-Oct-2024
C-O-C number	: 20241015/ 01	Issue Date	: 24-Oct-2024 15:58
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta
Kate Dimitrova	Supervisor - Inorganic	Vancouver Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Manpreet Cheema	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Edmonton Inorganics, Edmonton, Alberta
Robin Weeks	Team Leader - Metals	Vancouver Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1721854)											
YL2401739-003	Anonymous	pH	----	E108	0.10	pH units	7.23	7.24	0.138%	4%	----
Physical Tests (QC Lot: 1721855)											
YL2401739-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	1910	1910	0.105%	10%	----
Physical Tests (QC Lot: 1721856)											
YL2401739-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	15.8	16.2	2.53%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	15.8	16.2	2.53%	20%	----
Physical Tests (QC Lot: 1724051)											
FJ2403212-001	Anonymous	Turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1724207)											
YL2401739-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	687	720	4.76%	20%	----
Anions and Nutrients (QC Lot: 1721857)											
VA24C7998-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.44	0.44	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721859)											
VA24C7998-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	7.84	7.88	0.510%	20%	----
Anions and Nutrients (QC Lot: 1721860)											
VA24C7998-001	Anonymous	Fluoride	16984-48-8	E235.F-L	0.010	mg/L	0.484	0.486	0.507%	20%	----
Anions and Nutrients (QC Lot: 1721861)											
YL2401739-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0100	mg/L	0.0204	0.0215	0.0010	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721862)											
YL2401739-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	0.0300	mg/L	3.89	3.88	0.210%	20%	----
Anions and Nutrients (QC Lot: 1721863)											
YL2401739-002	Anonymous	Bromide	24959-67-9	E235.Br-U	0.0500	mg/L	3.90	3.94	0.806%	20%	----
Anions and Nutrients (QC Lot: 1721864)											
VA24C7998-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1722034)											
FJ2403198-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0250	mg/L	0.656	0.633	3.66%	20%	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1722037)											
YL2401739-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	1.04	1.06	1.78%	20%	----
Anions and Nutrients (QC Lot: 1722784)											
VA24C7986-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	19.1	19.0	0.428%	20%	----
Anions and Nutrients (QC Lot: 1725550)											
EO2409498-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0037	0.0030	0.0007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1725554)											
EO2409513-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.586	0.588	0.372%	20%	----
Anions and Nutrients (QC Lot: 1725559)											
YL2401739-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0010	mg/L	0.0078	0.0078	0.00006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1725560)											
YL2401739-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0010	mg/L	0.0010	<0.0010	0.00001	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1722031)											
FJ2403198-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	14.5	15.6	6.76%	20%	----
Dissolved Metals (QC Lot: 1722240)											
YL2401739-001	Anonymous	Calcium, dissolved	7440-70-2	E421	0.050	mg/L	98.9	94.6	4.46%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	24.9	26.6	6.85%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	10.4	10.9	4.18%	20%	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	43.9	46.8	6.35%	20%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1721855)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1721856)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1724051)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1724200)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 1724207)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1721857)						
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1721859)						
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1721860)						
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1721861)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1721862)						
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	<0.0030	----
Anions and Nutrients (QCLot: 1721863)						
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1721864)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1722034)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	# 0.0058	B
Anions and Nutrients (QCLot: 1722037)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1722784)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1722784) - continued						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1725550)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725554)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725559)						
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725560)						
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 1722031)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Dissolved Metals (QCLot: 1722240)						
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----

Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1721854)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1721855)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 1721856)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	116	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1724051)									
Turbidity	----	E121	0.1	NTU	200 NTU	97.0	85.0	115	----
Physical Tests (QCLot: 1724200)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	90.3	85.0	115	----
Physical Tests (QCLot: 1724207)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1721857)									
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 1721859)									
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1721860)									
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	1 mg/L	97.4	90.0	110	----
Anions and Nutrients (QCLot: 1721861)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	97.9	90.0	110	----
Anions and Nutrients (QCLot: 1721862)									
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	2.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 1721863)									
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	0.5 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1721864)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	90.9	80.0	120	----
Anions and Nutrients (QCLot: 1722034)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 1722037)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1722784)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1722784) - continued									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1725550)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	107	80.0	120	----
Anions and Nutrients (QCLot: 1725554)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	106	80.0	120	----
Anions and Nutrients (QCLot: 1725559)									
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	0.05 mg/L	100	80.0	120	----
Anions and Nutrients (QCLot: 1725560)									
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	0.05 mg/L	113	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1722031)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	96.3	80.0	120	----
Dissolved Metals (QCLot: 1722240)									
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	93.8	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	100	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	106	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1721857)										
VA24C7998-002	Anonymous	Chloride	16887-00-6	E235.Cl-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1721859)										
VA24C7998-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1721860)										
VA24C7998-002	Anonymous	Fluoride	16984-48-8	E235.F-L	0.984 mg/L	1 mg/L	98.4	75.0	125	----
Anions and Nutrients (QCLot: 1721861)										
YL2401739-003	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	4.72 mg/L	5 mg/L	94.5	75.0	125	----
Anions and Nutrients (QCLot: 1721862)										
YL2401739-003	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	24.5 mg/L	25 mg/L	97.9	75.0	125	----
Anions and Nutrients (QCLot: 1721863)										
YL2401739-003	Anonymous	Bromide	24959-67-9	E235.Br-U	5.20 mg/L	5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1721864)										
VA24C7998-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0283 mg/L	0.03 mg/L	94.3	70.0	130	----
Anions and Nutrients (QCLot: 1722034)										
FJ2403198-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1722037)										
YL2401739-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.64 mg/L	2.5 mg/L	106	70.0	130	----
Anions and Nutrients (QCLot: 1722784)										
VA24C8129-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.3 mg/L	10 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1725550)										
EO2409513-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1725554)										
EO2409522-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0784 mg/L	0.067 mg/L	117	70.0	130	----
Anions and Nutrients (QCLot: 1725559)										
YL2401739-002	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0541 mg/L	0.05 mg/L	108	70.0	130	----
Anions and Nutrients (QCLot: 1725560)										
YL2401739-002	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0568 mg/L	0.05 mg/L	114	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1722031)										
FJ2403198-002	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Dissolved Metals (QCLot: 1722240)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1722240) - continued										
YL2401739-002	Anonymous	Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 20241015/ 01

Report To	Contact and company name below will appear on the final report
Company:	DeBeers Gahcho Kué
Contact:	Dave Ott/Michelle Burger
Phone:	867-679-5812/5814
	Company address below will appear on the final report
Street:	5120 49th Street Suite 300
City/Province:	Yellowknife, NT
Postal Code:	X1A 3S8
Invoice To	Same as Report To Yes No
	Copy of Invoice with Report Yes No
Company:	DeBeers Group
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8

Report Format / Distribution

Select Report Format: Quality Control (QC) Report with Report

Select Distribution:

Email 1 or Fax: Environment.GahchoKue@debeersgroup.com
Email 2: Dave.Ott@debeersgroup.com
Email 3: Michelle.Burger@debeersgroup.com

Invoice Distribution

Select Invoice Distribution:
Email 1 or Fax: ap.invoices@debeersgroup.com
Email 2: Mason.Elwood@debeersgroup.com

Project Information

ALS Account # / Quote #:
Job #: SNP-08 Monthly
PO / AFE: 4100968747
LSD:

Oil and Gas Required Fields (client use)

Approver ID: Cost Center:
GL Account: Routing Code:
Activity Code:
Location:

ALS Lab Work Order # (lab use only)

ALS Contact: Oliver Gregg Sampler: J. Vornbrock

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days): 4 day [P4-20%]; 3 day [P3-25%]; 2 day [P2-50%]

EMERGENCY: 1 Business day [E - 100%]; Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]

Date and time Required for all E&P TA: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical Parameters	Major Ions	Total Nutrients (P)	Dissolved Nutrients	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	SNP-08	15-Oct-24	8:39	Water	4	R	R	R	R		

Environmental Division
Yellowknife
Work Order Reference
YL2401740
Telephone : +1 867 873 5593

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

Are samples for human drinking water use?

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
6.8	

SHIPMENT RELEASE (client use)

Released by: J. Vornbrock Date: 15-Oct-24 Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Oct 16/24 Time: 9:40

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-PM-0325a v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241015/ 01

Date: October 15, 2024

Sample Date	15-Oct-24				
Sample Name	SNP-08				
Physical Parameters Rush (Y/N)	N				
Conductivity	X				
pH	X				
Total Suspended Solids (Ultra Low)	X				
Turbidity	X				
Major Ions Rush (Y/N)	N				
Alkalinity, Bicarbonate (as CaCO3)	X				
Alkalinity, Carbonate (as CaCO3)	X				
Alkalinity, Hydroxide (as CaCO3)	X				
Alkalinity, Total (as CaCO3)	X				
Hardness (as CaCO3)	X				
Calcium	X				
Magnesium	X				
Potassium	X				
Sodium	X				
Chloride (Cl)	X				
Fluoride (F)	X				
Total Dissolved Solids (SNP-07)	X				
Sulphate (SO4)	X				
Reactive Silicate	X				
Nutrients Rush (Y/N)	N				
Lab to Filter Dissolved Nutrients	X				
Ammonia, Total (as N)	X				
Nitrate and Nitrite (as N)	X				
Nitrate (as N)	X				
Nitrite (as N)	X				
Total Kjeldahl Nitrogen	X				
Orthophosphate-Dissolved (as P)	X				
Phosphorus (P)-Total Dissolved	X				
Phosphorus (P)-Total	X				
Phosphorus (P)-Dissolved Organic	X				
Phosphorus (P)-Total Inorganic	X				
Phosphorus (P)-Dissolved Inorganic	X				
Total Organic Carbon	X				
Aggregate Organics Rush (Y/N)					
Biochemical Oxygen Demand (SNP-07)					
Oil and Grease (SNP-07)					
Metals Rush (Y/N)					
Lab to Filter Dissolved Metals					
Total Metals (preserved with HNO3)					
Dissolved Metals (not preserved)					

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Rubidium, Selenium, Silver, Strontium, Thallium, Titanium, Uranium, Vanadium, Zinc.

Speciated Metals Rush (Y/N)					
Hydrocarbons and VOCs Rush (Y/N)					
BTEX, F1-F4					
Total Petroleum Hydrocarbons					
Bacteria Rush (Y/N)					
Total Coliforms, Fecal Coliforms, and E. coli					
Radionuclides (SNP-08/09/10) Rush (Y/N)					
Uranium and Thorium					
Radium-226 (if U & Th leach to grndwtr)					

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **YL2401742**		
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Edmonton
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife Northwest Territories Canada X1A 1P8	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-06 MONTHLY	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Date Analysis Commenced	: 22-Oct-2024
C-O-C number	: 20241009/ 06	Issue Date	: 25-Oct-2024 15:26
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Janice Leung	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Manpreet Cheema	Lab Assistant	Metals, Burnaby, British Columbia
Maya Urquhart	Lab Analyst	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
pH units	pH units
µS/cm	microsiemens per centimetre
NTU	nephelometric turbidity units
-	no units
µg/L	micrograms per litre

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
SFP	Sample was filtered and preserved at the laboratory.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate -N is > 10x TKN.

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

				Client sample ID	SNP-06-3m	SNP-06-3m-03	----	----	----
				Client sampling date / time	08-Oct-2024 13:57	08-Oct-2024 11:11	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401742-001	YL2401742-002	----	----	----
					Result	Result	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	34.3	<1.0	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	34.3	<1.0	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	1650	<2.0	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	440	<0.50	----	----	----
pH	----	E108/VA	0.10	pH units	7.67	5.51	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	1180	<10	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	<1.0	<1.0	----	----	----
Turbidity	----	E121/VA	0.10	NTU	0.59	<0.10	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0332	<0.0050	----	----	----
Bromide	24959-67-9	E235.Br-U/VA	0.0500	mg/L	4.56	<0.0500	----	----	----
Chloride	16887-00-6	E235.Cl-L/VA	0.50	mg/L	411	<0.50	----	----	----
Fluoride	16984-48-8	E235.F-L/VA	0.020	mg/L	0.332	<0.020	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	0.293 TKNI	<0.050	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-T/VA	0.0030	mg/L	9.43	<0.0030	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/VA	0.0032	mg/L	9.46	<0.0058	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0050	mg/L	0.0296	<0.0050	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-06-3m	SNP-06-3m-03	----	----	----
				Client sampling date / time	08-Oct-2024 13:57	08-Oct-2024 11:11	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401742-001	YL2401742-002	----	----	----
					Result	Result	----	----	----
Anions and Nutrients									
Phosphorus, dissolved inorganic	----	E377-L/EO	0.0010	mg/L	0.0011 SFP	<0.0010 SFP	----	----	----
Phosphorus, dissolved organic	----	EC377-L.ORG/EO	0.0020	mg/L	0.0027	<0.0020	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0045	<0.0010	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0038	<0.0010	----	----	----
Phosphorus, total inorganic	----	E376-L/EO	0.0010	mg/L	<0.0010	<0.0010	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	1.73	<0.50	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4-L/VA	0.300	mg/L	92.9	<0.300	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	2.22	<0.50	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.0167	<0.0030	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	0.00012	<0.00010	----	----	----
Arsenic, total	7440-38-2	E420-L/VA	0.000030	mg/L	0.000174	<0.000030	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.116	<0.00010	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L	<0.000020	<0.000020	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L	0.690	<0.010	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	0.0000247	<0.0000050	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	125	<0.050	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000047	<0.000010	----	----	----
Chromium, total	7440-47-3	E420.Cr-L/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-06-3m	SNP-06-3m-03	----	----	----
				Client sampling date / time	08-Oct-2024 13:57	08-Oct-2024 11:11	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401742-001	YL2401742-002	----	----	----
					Result	Result	----	----	----
Total Metals									
Cobalt, total	7440-48-4	E420-L/VA	0.000050	mg/L	0.000166	<0.000050	----	----	----
Copper, total	7440-50-8	E420-L/VA	0.00015	mg/L	0.00058	<0.00015	----	----	----
Iron, total	7439-89-6	E420-L/VA	0.0050	mg/L	0.0186	<0.0050	----	----	----
Lead, total	7439-92-1	E420-L/VA	0.000030	mg/L	0.000037	<0.000030	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0207	<0.0010	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	33.6	<0.0050	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.0116	<0.00010	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.00718	<0.000050	----	----	----
Nickel, total	7440-02-0	E420-L/VA	0.00010	mg/L	0.00378	<0.00010	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	23.8	<0.050	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.0230	<0.00020	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	0.95	<0.10	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----
Sodium, total	7440-23-5	E420-L/VA	0.030	mg/L	109	<0.030	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	1.86	<0.00020	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	34.3	<0.50	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	0.00032	<0.00020	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	0.000039	<0.000010	----	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-06-3m	SNP-06-3m-03	----	----	----
				Client sampling date / time	08-Oct-2024 13:57	08-Oct-2024 11:11	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401742-001	YL2401742-002	----	----	----
					Result	Result	----	----	----
Total Metals									
Tin, total	7440-31-5	E420-L/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	<0.00060 DLM	<0.00030	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.00183	<0.000010	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Zinc, total	7440-66-6	E420-L/VA	0.0015	mg/L	<0.0015	<0.0015	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0059	<0.0010	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Arsenic, dissolved	7440-38-2	E421-L/VA	0.000030	mg/L	0.000169	<0.000030	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.116	<0.00010	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L	<0.000020	<0.000020	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----
Boron, dissolved	7440-42-8	E421-L/VA	0.0050	mg/L	0.640	<0.0050	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	0.0000159	<0.0000050	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	119	<0.050	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000050	<0.000010	----	----	----
Chromium, dissolved	7440-47-3	E421.Cr-L/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Cobalt, dissolved	7440-48-4	E421-L/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----
Copper, dissolved	7440-50-8	E421-L/VA	0.00015	mg/L	0.00046	<0.00015	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-06-3m	SNP-06-3m-03	----	----	----
				Client sampling date / time	08-Oct-2024 13:57	08-Oct-2024 11:11	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401742-001	YL2401742-002	----	----	----
					Result	Result	----	----	----
Dissolved Metals									
Iron, dissolved	7439-89-6	E421-L/VA	0.0050	mg/L	<0.0050	<0.0050	----	----	----
Lead, dissolved	7439-92-1	E421-L/VA	0.000030	mg/L	<0.000030	<0.000030	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.0208	<0.0010	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	34.7	<0.0050	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.00182	<0.00010	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.00709	<0.000050	----	----	----
Nickel, dissolved	7440-02-0	E421-L/VA	0.00010	mg/L	0.00374	<0.00010	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	26.0	<0.050	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.0244	<0.00020	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	0.819	<0.050	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----
Sodium, dissolved	7440-23-5	E421-L/VA	0.010	mg/L	116	<0.010	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	116	<0.050	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	1.97	<0.00020	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	33.9	<0.50	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	0.000045	<0.000010	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Tin, dissolved	7440-31-5	E421-L/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-06-3m	SNP-06-3m-03	----	----	----
				Client sampling date / time	08-Oct-2024 13:57	08-Oct-2024 11:11	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401742-001	YL2401742-002	----	----	----
					Result	Result	----	----	----
Dissolved Metals									
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	<0.00030	<0.00030	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.00190	<0.000010	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	0.0013	<0.0010	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L	<0.00030	<0.00030	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-	Laboratory	Laboratory	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Laboratory	Laboratory	----	----	----
Volatile Organic Compounds [Fuels]									
Benzene	71-43-2	E611A/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Ethylbenzene	100-41-4	E611A/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Styrene	100-42-5	E611A/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Toluene	108-88-3	E611A/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Xylene, m+p-	179601-23-1	E611A/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Xylene, o-	95-47-6	E611A/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Xylenes, total	1330-20-7	E611A/VA	0.00075	mg/L	<0.00075	<0.00075	----	----	----
Hydrocarbons									
F1 (C6-C10)	----	E581.VH+F1/VA	0.10	mg/L	<0.10	<0.10	----	----	----
F1-BTEX	----	EC580/VA	0.100	mg/L	<0.100	<0.100	----	----	----
F2 (C10-C16)	----	E601/VA	0.10	mg/L	<0.10	<0.10	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-06-3m	SNP-06-3m-03	----	----	----
				Client sampling date / time	08-Oct-2024 13:57	08-Oct-2024 11:11	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401742-001	YL2401742-002	----	----	----
					Result	Result	----	----	----
Hydrocarbons									
F3 (C16-C34)	----	E601/VA	0.25	mg/L	<0.25	<0.25	----	----	----
F4 (C34-C50)	----	E601/VA	0.25	mg/L	<0.25	<0.25	----	----	----
Hydrocarbons, total (C6-C50)	n/a	EC581/VA	0.40	mg/L	<0.40	<0.40	----	----	----
TEH (C10-C50)	n/a	E601/VA	0.40	mg/L	<0.40	<0.40	----	----	----
TEH (C16-C50)	----	E601/VA	0.40	mg/L	<0.40	<0.40	----	----	----
Hydrocarbons Surrogates									
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	E601/VA	1.0	%	85.3	75.8	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%	106	87.7	----	----	----
Volatile Organic Compounds Surrogates									
Bromofluorobenzene, 4-	460-00-4	E611A/VA	1.0	%	83.4	87.1	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611A/VA	1.0	%	99.0	100	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2401742**	Page	: 1 of 21
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-06 MONTHLY	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Issue Date	: 25-Oct-2024 15:23
C-O-C number	: 20241009/ 06		
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Method Blank value outliers occur - please see following pages for full details.
- Matrix Spike outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Total Metals	QC-MRG3-1722943 001	----	Nickel, total	7440-02-0	E420-L	0.00029 mg/L B	0.0001 mg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Matrix Spike (MS) Recoveries								
Dissolved Metals	Anonymous	Anonymous	Silver, dissolved	7440-22-4	E421	61.6 % MS-Ag	70.0-130%	Recovery less than lower data quality objective

Result Qualifiers

Qualifier	Description
MS-Ag	*MS-Ag: Matrix Spike recovery for silver was marginally below DQO (40 to <60%) due to its instability in the sample matrix. Silver was not detected. Reported result (< LOR) is reliable*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-06-3m	E298	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	22-Oct-2024	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-06-3m-03	E298	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	22-Oct-2024	28 days	14 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-06-3m	E235.Br-U	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-06-3m-03	E235.Br-U	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-06-3m	E235.Cl-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-06-3m-03	E235.Cl-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-06-3m	E377-L	08-Oct-2024	23-Oct-2024	3 days	15 days	× EHTR	24-Oct-2024	28 days	1 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-06-3m-03	E377-L	08-Oct-2024	23-Oct-2024	3 days	15 days	✗ EHTR	24-Oct-2024	28 days	1 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE										
SNP-06-3m	E378-U	08-Oct-2024	21-Oct-2024	3 days	13 days	✗ EHTR	21-Oct-2024	3 days	13 days	✗ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE										
SNP-06-3m-03	E378-U	08-Oct-2024	21-Oct-2024	3 days	13 days	✗ EHTR	21-Oct-2024	3 days	13 days	✗ EHTR
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE										
SNP-06-3m	E235.F-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE										
SNP-06-3m-03	E235.F-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE										
SNP-06-3m	E235.NO3-T	08-Oct-2024	21-Oct-2024	3 days	13 days	✗ EHTR	21-Oct-2024	3 days	13 days	✗ EHTR
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE										
SNP-06-3m-03	E235.NO3-T	08-Oct-2024	21-Oct-2024	3 days	13 days	✗ EHTR	21-Oct-2024	3 days	13 days	✗ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-06-3m	E235.NO2-L	08-Oct-2024	21-Oct-2024	3 days	13 days	✗ EHTR	21-Oct-2024	3 days	13 days	✗ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-06-3m-03	E235.NO2-L	08-Oct-2024	21-Oct-2024	3 days	13 days	✗ EHTR	21-Oct-2024	3 days	13 days	✗ EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE SNP-06-3m	E392	08-Oct-2024	----	----	----		22-Oct-2024	28 days	14 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE SNP-06-3m-03	E392	08-Oct-2024	----	----	----		22-Oct-2024	28 days	14 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE SNP-06-3m	E235.SO4-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE SNP-06-3m-03	E235.SO4-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-06-3m	E375-U	08-Oct-2024	23-Oct-2024	3 days	15 days	× EHTR	23-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-06-3m-03	E375-U	08-Oct-2024	23-Oct-2024	3 days	15 days	× EHTR	23-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) SNP-06-3m	E376-L	08-Oct-2024	23-Oct-2024	28 days	15 days	✓	24-Oct-2024	28 days	16 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) SNP-06-3m-03	E376-L	08-Oct-2024	23-Oct-2024	28 days	15 days	✓	24-Oct-2024	28 days	16 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) SNP-06-3m	E318	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	22-Oct-2024	28 days	14 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) SNP-06-3m-03	E318	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	22-Oct-2024	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) SNP-06-3m	E372-S	08-Oct-2024	23-Oct-2024	28 days	15 days	✓	23-Oct-2024	28 days	15 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) SNP-06-3m-03	E372-S	08-Oct-2024	23-Oct-2024	28 days	15 days	✓	23-Oct-2024	28 days	15 days	✓
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) SNP-06-3m	E421.Cr-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	22-Oct-2024	180 days	14 days	✓
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) SNP-06-3m-03	E421.Cr-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	22-Oct-2024	180 days	14 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved) SNP-06-3m	E509	08-Oct-2024	23-Oct-2024	28 days	15 days	✓	23-Oct-2024	28 days	15 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved) SNP-06-3m-03	E509	08-Oct-2024	23-Oct-2024	28 days	15 days	✓	23-Oct-2024	28 days	15 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)										
HDPE - dissolved (lab preserved) SNP-06-3m	E421-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	22-Oct-2024	180 days	14 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)										
HDPE - dissolved (lab preserved) SNP-06-3m-03	E421-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	22-Oct-2024	180 days	14 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SNP-06-3m	E421	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	23-Oct-2024	180 days	15 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SNP-06-3m-03	E421	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	23-Oct-2024	180 days	15 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate)										
SNP-06-3m	E601	08-Oct-2024	22-Oct-2024	14 days	14 days	✓	23-Oct-2024	40 days	1 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate)										
SNP-06-3m-03	E601	08-Oct-2024	22-Oct-2024	14 days	14 days	✓	23-Oct-2024	40 days	1 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate)										
SNP-06-3m	E581.VH+F1	08-Oct-2024	22-Oct-2024	14 days	13 days	✓	22-Oct-2024	14 days	14 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate)										
SNP-06-3m-03	E581.VH+F1	08-Oct-2024	22-Oct-2024	14 days	14 days	✓	22-Oct-2024	14 days	14 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP-06-3m	E355-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	22-Oct-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP-06-3m-03	E355-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	22-Oct-2024	28 days	14 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
SNP-06-3m	E290	08-Oct-2024	21-Oct-2024	14 days	13 days	✓	22-Oct-2024	14 days	14 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE SNP-06-3m-03	E290	08-Oct-2024	21-Oct-2024	14 days	13 days	✓	22-Oct-2024	14 days	14 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP-06-3m	E100	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	22-Oct-2024	28 days	14 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP-06-3m-03	E100	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	22-Oct-2024	28 days	14 days	✓
Physical Tests : pH by Meter										
HDPE SNP-06-3m	E108	08-Oct-2024	21-Oct-2024	0.25 hrs	319 hrs	× EHTR-FM	22-Oct-2024	0.25 hrs	330 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SNP-06-3m-03	E108	08-Oct-2024	21-Oct-2024	0.25 hrs	321 hrs	× EHTR-FM	22-Oct-2024	0.25 hrs	332 hrs	× EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SNP-06-3m	E162	08-Oct-2024	----	----	----		23-Oct-2024	7 days	14 days	× EHTR
Physical Tests : TDS by Gravimetry										
HDPE SNP-06-3m-03	E162	08-Oct-2024	----	----	----		23-Oct-2024	7 days	15 days	× EHTR
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-06-3m	E160-L	08-Oct-2024	----	----	----		23-Oct-2024	7 days	14 days	× EHTR
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-06-3m-03	E160-L	08-Oct-2024	----	----	----		23-Oct-2024	7 days	15 days	× EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Physical Tests : Turbidity by Nephelometry										
HDPE SNP-06-3m	E121	08-Oct-2024	----	----	----		21-Oct-2024	3 days	13 days	× EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE SNP-06-3m-03	E121	08-Oct-2024	----	----	----		21-Oct-2024	3 days	13 days	× EHTR
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) SNP-06-3m	E420.Cr-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	23-Oct-2024	180 days	15 days	✓
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) SNP-06-3m-03	E420.Cr-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	23-Oct-2024	180 days	15 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) SNP-06-3m	E508	08-Oct-2024	23-Oct-2024	28 days	15 days	✓	23-Oct-2024	28 days	15 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) SNP-06-3m-03	E508	08-Oct-2024	23-Oct-2024	28 days	15 days	✓	23-Oct-2024	28 days	15 days	✓
Total Metals : Total Metals by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) SNP-06-3m	E420-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	24-Oct-2024	180 days	16 days	✓
Total Metals : Total Metals by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) SNP-06-3m-03	E420-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	24-Oct-2024	180 days	16 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) SNP-06-3m	E420	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	24-Oct-2024	180 days	16 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP-06-3m-03	E420	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	24-Oct-2024	180 days	16 days	✓
Volatile Organic Compounds : BTEX by Headspace GC-MS										
Glass vial (sodium bisulfate)										
SNP-06-3m	E611A	08-Oct-2024	22-Oct-2024	14 days	13 days	✓	22-Oct-2024	14 days	14 days	✓
Volatile Organic Compounds : BTEX by Headspace GC-MS										
Glass vial (sodium bisulfate)										
SNP-06-3m-03	E611A	08-Oct-2024	22-Oct-2024	14 days	14 days	✓	22-Oct-2024	14 days	14 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1721818	1	20	5.0	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
BTEX by Headspace GC-MS	E611A	1722079	1	2	50.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1722992	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1725842	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1722991	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
pH by Meter	E108	1721854	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1724693	1	10	10.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1722945	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1721814	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1724781	1	18	5.5	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1722944	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1722943	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1721815	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1722021	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1722077	1	15	6.6	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1721818	1	20	5.0	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
BTEX by Headspace GC-MS	E611A	1722079	1	2	50.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID	E601	1722126	1	2	50.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1722992	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1725842	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1722991	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
pH by Meter	E108	1721854	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1724693	1	10	10.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1722945	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1721814	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1724781	1	18	5.5	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1722944	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1722943	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1721815	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1724698	1	4	25.0	5.0	✓
Turbidity by Nephelometry	E121	1722021	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1722077	1	15	6.6	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1721818	1	20	5.0	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
BTEX by Headspace GC-MS	E611A	1722079	1	2	50.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID	E601	1722126	1	2	50.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1722992	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1725842	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	2	17	11.7	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB) - Continued							
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1722991	2	9	22.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1724693	1	10	10.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1722945	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1721814	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1724781	1	18	5.5	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1722944	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1722943	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1721815	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1724698	1	4	25.0	5.0	✓
Turbidity by Nephelometry	E121	1722021	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1722077	1	15	6.6	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1721818	1	20	5.0	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
BTEX by Headspace GC-MS	E611A	1722079	1	2	50.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1722992	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1725842	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1722991	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1722945	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1721814	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1724781	1	18	5.5	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1722944	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1722943	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1721815	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1722077	1	15	6.6	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry (Low Level)	E160-L ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide by IC (Ultra Trace Level)	E235.Br-U ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC (Low Level)	E235.F-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Trace Level)	E235.NO3-T ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC (Low Level)	E235.SO4-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Total Inorganic Phosphorus is determined colourimetrically after sample has undergone H2SO4 hydrolysis
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved Inorganic Phosphorus is determined colourimetrically after H_2SO_4 hydrolysis of a sample that has been lab or field filtered through a 0.45 micron membrane filter

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Total Metals by CRC ICPMS (Low Level)	E420-L ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L ALS Environmental - Vancouver	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L ALS Environmental - Vancouver	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
VH and F1 by Headspace GC-FID	E581.VH+F1 ALS Environmental - Vancouver	Water	BC MOE Lab Manual / CCME PHC in Soil - Tier 1 (mod)	Volatile Hydrocarbons (VH and F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
CCME PHCs - F2-F4 by GC-FID	E601 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	Sample extracts are analyzed by GC-FID for CCME hydrocarbon fractions (F2-F4). Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
BTEX by Headspace GC-MS	E611A ALS Environmental - Vancouver	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Vancouver	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Phosphorus, dissolved organic (0.0014 mg/L) by calculation.	EC377-L.ORG ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved inorganic phosphorus is subtracted from total dissolved phosphorus to determine dissolved organic phosphorus.
F1-BTEX	EC580 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	F1-BTEX is calculated as follows: F1-BTEX = F1 (C6-C10) minus benzene, toluene, ethylbenzene and xylenes (BTEX).
Sum F1 to F4 (C6-C50)	EC581 ALS Environmental - Vancouver	Water	CCME PHC in Soil - Tier 1	Hydrocarbons, total (C6-C50) is the sum of CCME Fractions F1(C6-C10), F2(C10-C16), F3(C16-C34), and F4(C34-C50). F4G-sg is not used within this calculation due to overlap with other fractions.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Digestion for Total Inorganic Phosphorus in water	EP376 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples undergo H2SO4 hydrolysis.
Digestion for Dissolved Inorganic Phosphorus in water	EP377 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then undergo H2SO4 hydrolysis.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Vancouver	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID.
PHCs and PAHs Hexane Extraction	EP601 ALS Environmental - Vancouver	Water	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.

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QUALITY CONTROL REPORT

Work Order	: **YL2401742**	Page	: 1 of 21
Client	: De Beers Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-06 MONTHLY	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Date Analysis Commenced	: 21-Oct-2024
C-O-C number	: 20241009/ 06	Issue Date	: 25-Oct-2024 15:23
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta
Dan Gebert	Laboratory Analyst	Vancouver Metals, Burnaby, British Columbia
Janice Leung	Supervisor - Organics Instrumentation	Vancouver Organics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Inorganics, Burnaby, British Columbia
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Maya Urquhart	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Owen Cheng		Vancouver Metals, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Edmonton Inorganics, Edmonton, Alberta

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1721854)											
YL2401739-003	Anonymous	pH	----	E108	0.10	pH units	7.23	7.24	0.138%	4%	----
Physical Tests (QC Lot: 1721855)											
YL2401739-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	1910	1910	0.105%	10%	----
Physical Tests (QC Lot: 1721856)											
YL2401739-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	15.8	16.2	2.53%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	15.8	16.2	2.53%	20%	----
Physical Tests (QC Lot: 1722021)											
VA24C7509-001	Anonymous	Turbidity	----	E121	0.10	NTU	1.17	1.17	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1724693)											
VA24C7749-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	171	162	10	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721814)											
FJ2403177-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.132	0.136	0.004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721818)											
FJ2403168-007	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721857)											
VA24C7998-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.44	0.44	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721859)											
VA24C7998-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	7.84	7.88	0.510%	20%	----
Anions and Nutrients (QC Lot: 1721860)											
VA24C7998-001	Anonymous	Fluoride	16984-48-8	E235.F-L	0.010	mg/L	0.484	0.486	0.507%	20%	----
Anions and Nutrients (QC Lot: 1721861)											
YL2401739-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0100	mg/L	0.0204	0.0215	0.0010	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721862)											
YL2401739-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	0.0300	mg/L	3.89	3.88	0.210%	20%	----
Anions and Nutrients (QC Lot: 1721863)											
YL2401739-002	Anonymous	Bromide	24959-67-9	E235.Br-U	0.0500	mg/L	3.90	3.94	0.806%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 1721864)											
VA24C7998-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1722784)											
VA24C7986-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	19.1	19.0	0.428%	20%	----
Anions and Nutrients (QC Lot: 1725550)											
EO2409498-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0037	0.0030	0.0007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1725554)											
EO2409513-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.586	0.588	0.372%	20%	----
Anions and Nutrients (QC Lot: 1725559)											
YL2401739-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0010	mg/L	0.0078	0.0078	0.00006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1725560)											
YL2401739-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0010	mg/L	0.0010	<0.0010	0.00001	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1721815)											
FJ2403168-007	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 1722943)											
VA24C8151-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0683	0.0691	1.13%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00018	0.00018	0.000004	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0174	0.0175	0.501%	20%	----
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	0.029	0.030	0.00001	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000132	0.0000138	0.0000006	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	12.4	12.7	1.99%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000012	0.000010	0.000002	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	3.46	3.48	0.706%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0265	0.0267	0.691%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000424	0.000418	0.000007	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	2.95	2.92	0.862%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00181	0.00181	0.000004	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000107	0.000085	0.000022	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	5.48	5.40	1.34%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0677	0.0660	2.59%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	4.05	4.08	0.04	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 1722943) - continued											
VA24C8151-001	Anonymous	Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00237	0.00232	0.00005	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000015	0.000014	0.000002	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00138	0.00129	0.00009	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1722944)											
VA24C8151-001	Anonymous	Arsenic, total	7440-38-2	E420-L	0.000030	mg/L	0.000590	0.000601	1.77%	20%	----
		Cobalt, total	7440-48-4	E420-L	0.000050	mg/L	0.000216	0.000199	0.000017	Diff <2x LOR	----
		Copper, total	7440-50-8	E420-L	0.00015	mg/L	0.00261	0.00270	3.27%	20%	----
		Iron, total	7439-89-6	E420-L	0.0050	mg/L	0.117	0.118	0.388%	20%	----
		Lead, total	7439-92-1	E420-L	0.000030	mg/L	0.000060	0.000067	0.000007	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420-L	0.00010	mg/L	0.00108	0.00111	3.55%	20%	----
		Sodium, total	7440-23-5	E420-L	0.030	mg/L	7.24	7.27	0.400%	20%	----
		Tin, total	7440-31-5	E420-L	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420-L	0.0015	mg/L	0.0070	0.0070	0.000008	Diff <2x LOR	----
Total Metals (QC Lot: 1722945)											
VA24C8151-001	Anonymous	Chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00028	0.00034	0.00006	Diff <2x LOR	----
Total Metals (QC Lot: 1724781)											
VA24C7731-002	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0050 µg/L	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1722990)											
VA24C8156-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0151	0.0152	0.149%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00032	0.00032	0.000002	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0330	0.0316	4.22%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000202	0.0000160	0.0000042	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	58.1	57.3	1.33%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	14.8	14.4	3.21%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	1.06	1.04	2.19%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1722990) - continued											
VA24C8156-001	Anonymous	Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00202	0.00202	0.0959%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	6.92	6.71	3.07%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00267	0.00246	8.29%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000195	0.000200	0.000005	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.100	mg/L	2.91	2.84	2.58%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	14.8	14.4	2.44%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.269	0.270	0.500%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	30.4	30.1	0.982%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00129	0.00096	0.00032	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000291	0.000284	2.28%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00072	0.00068	0.00004	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0015	0.0014	0.0001	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1722991)											
VA24C8156-001	Anonymous	Arsenic, dissolved	7440-38-2	E421-L	0.000030	mg/L	0.000991	0.000891	10.6%	20%	----
		Boron, dissolved	7440-42-8	E421-L	0.0050	mg/L	0.0234	0.0232	0.0002	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421-L	0.000050	mg/L	0.00158	0.00158	0.482%	20%	----
		Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	0.00482	0.00477	1.20%	20%	----
		Iron, dissolved	7439-89-6	E421-L	0.0050	mg/L	0.0633	0.0600	5.27%	20%	----
		Lead, dissolved	7439-92-1	E421-L	0.000030	mg/L	<0.000030	<0.000030	0	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421-L	0.00010	mg/L	0.00302	0.00303	0.533%	20%	----
		Sodium, dissolved	7440-23-5	E421-L	0.010	mg/L	14.8	14.4	2.44%	20%	----
		Tin, dissolved	7440-31-5	E421-L	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1722992)											
VA24C8156-001	Anonymous	Chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00016	0.00012	0.00004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1725842)											
YL2401742-001	SNP-06-3m	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1722079)											
YL2401742-001	SNP-06-3m	Benzene	71-43-2	E611A	0.50	µg/L	<0.00050 mg/L	<0.50	0	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 1722079) - continued											
YL2401742-001	SNP-06-3m	Ethylbenzene	100-41-4	E611A	0.50	µg/L	<0.00050 mg/L	<0.50	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.50	µg/L	<0.00050 mg/L	<0.50	0	Diff <2x LOR	----
		Styrene	100-42-5	E611A	0.50	µg/L	<0.00050 mg/L	<0.50	0	Diff <2x LOR	----
		Toluene	108-88-3	E611A	0.50	µg/L	<0.00050 mg/L	<0.50	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611A	0.50	µg/L	<0.00050 mg/L	<0.50	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611A	0.50	µg/L	<0.00050 mg/L	<0.50	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1722077)											
FJ2403177-001	Anonymous	F1 (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1721855)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1721856)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1722021)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1724693)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1724698)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Anions and Nutrients (QCLot: 1721814)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1721818)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1721857)						
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1721859)						
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1721860)						
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1721861)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1721862)						
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	<0.0030	----
Anions and Nutrients (QCLot: 1721863)						
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1721864)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1722784)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1722784) - continued						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1725550)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725554)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725559)						
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725560)						
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 1721815)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 1722943)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1722943) - continued						
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 1722944)						
Arsenic, total	7440-38-2	E420-L	0.00003	mg/L	<0.000030	----
Cobalt, total	7440-48-4	E420-L	0.00005	mg/L	<0.000050	----
Copper, total	7440-50-8	E420-L	0.00015	mg/L	<0.00015	----
Iron, total	7439-89-6	E420-L	0.005	mg/L	<0.0050	----
Lead, total	7439-92-1	E420-L	0.00003	mg/L	<0.000030	----
Nickel, total	7440-02-0	E420-L	0.0001	mg/L	# 0.00029	B
Sodium, total	7440-23-5	E420-L	0.03	mg/L	<0.030	----
Tin, total	7440-31-5	E420-L	0.00005	mg/L	<0.000050	----
Zinc, total	7440-66-6	E420-L	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1722945)						
Chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	MBRR
Total Metals (QCLot: 1724781)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1722990)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1722990) - continued						
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 1722991)						
Arsenic, dissolved	7440-38-2	E421-L	0.00003	mg/L	<0.000030	----
Boron, dissolved	7440-42-8	E421-L	0.005	mg/L	<0.0050	----
Cobalt, dissolved	7440-48-4	E421-L	0.00005	mg/L	<0.000050	----
Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	<0.00015	----
Iron, dissolved	7439-89-6	E421-L	0.005	mg/L	<0.0050	----
Lead, dissolved	7439-92-1	E421-L	0.00003	mg/L	<0.000030	----
Nickel, dissolved	7440-02-0	E421-L	0.0001	mg/L	<0.00010	----
Sodium, dissolved	7440-23-5	E421-L	0.01	mg/L	<0.010	MBRR
Tin, dissolved	7440-31-5	E421-L	0.00005	mg/L	<0.000050	----
Dissolved Metals (QCLot: 1722992)						
Chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 1725842)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Volatile Organic Compounds (QCLot: 1722079)						
Benzene	71-43-2	E611A	0.5	µg/L	<0.50	----
Ethylbenzene	100-41-4	E611A	0.5	µg/L	<0.50	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.5	µg/L	<0.50	----
Styrene	100-42-5	E611A	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611A	0.5	µg/L	<0.50	----
Xylene, m+p-	179601-23-1	E611A	0.4	µg/L	<0.40	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1722079) - continued						
Xylene, o-	95-47-6	E611A	0.3	µg/L	<0.30	----
Hydrocarbons (QCLot: 1722077)						
F1 (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----
Hydrocarbons (QCLot: 1722126)						
F2 (C10-C16)	----	E601	100	µg/L	<100	----
F3 (C16-C34)	----	E601	250	µg/L	<250	----
F4 (C34-C50)	----	E601	250	µg/L	<250	----

Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*
MBRR	*Initial MB for this submission had positive results for flagged analyte (data not shown). Low level samples were repeated with new QC (2nd MB results shown). High level results (>5x initial MB level) and non-detect results were reported and are defensible*

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1721854)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1721855)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 1721856)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	116	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1722021)									
Turbidity	----	E121	0.1	NTU	200 NTU	97.0	85.0	115	----
Physical Tests (QCLot: 1724693)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	105	85.0	115	----
Physical Tests (QCLot: 1724698)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	92.5	85.0	115	----
Anions and Nutrients (QCLot: 1721814)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	97.2	75.0	125	----
Anions and Nutrients (QCLot: 1721818)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1721857)									
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 1721859)									
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1721860)									
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	1 mg/L	97.4	90.0	110	----
Anions and Nutrients (QCLot: 1721861)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	97.9	90.0	110	----
Anions and Nutrients (QCLot: 1721862)									
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	2.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 1721863)									
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	0.5 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1721864)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	90.9	80.0	120	----
Anions and Nutrients (QCLot: 1722784)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1722784) - continued									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1725550)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	107	80.0	120	----
Anions and Nutrients (QCLot: 1725554)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	106	80.0	120	----
Anions and Nutrients (QCLot: 1725559)									
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	0.05 mg/L	100	80.0	120	----
Anions and Nutrients (QCLot: 1725560)									
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	0.05 mg/L	113	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1721815)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	105	80.0	120	----
Total Metals (QCLot: 1722943)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	102	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	95.1	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	97.8	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	91.8	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	99.2	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	96.4	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	97.7	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	95.4	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	98.9	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	100	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	107	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	99.4	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	106	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	93.0	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	97.7	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	96.6	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	105	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	97.9	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1722943) - continued									
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	93.0	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	100	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	95.9	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	98.2	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Total Metals (QCLot: 1722944)									
Arsenic, total	7440-38-2	E420-L	0.00003	mg/L	1 mg/L	103	80.0	120	----
Cobalt, total	7440-48-4	E420-L	0.00005	mg/L	0.25 mg/L	99.5	80.0	120	----
Copper, total	7440-50-8	E420-L	0.00015	mg/L	0.25 mg/L	101	80.0	120	----
Iron, total	7439-89-6	E420-L	0.005	mg/L	1 mg/L	101	80.0	120	----
Lead, total	7439-92-1	E420-L	0.00003	mg/L	0.5 mg/L	96.5	80.0	120	----
Nickel, total	7440-02-0	E420-L	0.0001	mg/L	0.5 mg/L	99.2	80.0	120	----
Sodium, total	7440-23-5	E420-L	0.03	mg/L	50 mg/L	99.9	80.0	120	----
Tin, total	7440-31-5	E420-L	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, total	7440-66-6	E420-L	0.0015	mg/L	0.5 mg/L	101	80.0	120	----
Total Metals (QCLot: 1722945)									
Chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Total Metals (QCLot: 1724781)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 1722990)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	98.9	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	99.4	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	103	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	98.8	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.3	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	101	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	105	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	99.0	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	96.8	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	100.0	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1722990) - continued									
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	89.6	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	99.7	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	90.7	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	99.4	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	102	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	97.1	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	104	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	93.5	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	97.6	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	105	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	97.7	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	100	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	97.8	80.0	120	----
Dissolved Metals (QCLot: 1722991)									
Arsenic, dissolved	7440-38-2	E421-L	0.00003	mg/L	1 mg/L	102	80.0	120	----
Boron, dissolved	7440-42-8	E421-L	0.005	mg/L	1 mg/L	108	80.0	120	----
Cobalt, dissolved	7440-48-4	E421-L	0.00005	mg/L	0.25 mg/L	96.6	80.0	120	----
Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	0.25 mg/L	96.2	80.0	120	----
Iron, dissolved	7439-89-6	E421-L	0.005	mg/L	1 mg/L	92.9	80.0	120	----
Lead, dissolved	7439-92-1	E421-L	0.00003	mg/L	0.5 mg/L	102	80.0	120	----
Nickel, dissolved	7440-02-0	E421-L	0.0001	mg/L	0.5 mg/L	96.8	80.0	120	----
Sodium, dissolved	7440-23-5	E421-L	0.01	mg/L	50 mg/L	103	80.0	120	----
Tin, dissolved	7440-31-5	E421-L	0.00005	mg/L	0.5 mg/L	99.3	80.0	120	----
Dissolved Metals (QCLot: 1722992)									
Chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	96.3	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	90.0	80.0	120	----
Volatile Organic Compounds (QCLot: 1722079)									
Benzene	71-43-2	E611A	0.5	µg/L	100 µg/L	99.7	70.0	130	----
Ethylbenzene	100-41-4	E611A	0.5	µg/L	100 µg/L	107	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.5	µg/L	100 µg/L	109	70.0	130	----
Styrene	100-42-5	E611A	0.5	µg/L	100 µg/L	104	70.0	130	----
Toluene	108-88-3	E611A	0.5	µg/L	100 µg/L	103	70.0	130	----
Xylene, m+p-	179601-23-1	E611A	0.4	µg/L	200 µg/L	116	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1722079) - continued									
Xylene, o-	95-47-6	E611A	0.3	µg/L	100 µg/L	109	70.0	130	----
Hydrocarbons (QCLot: 1722077)									
F1 (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	82.5	70.0	130	----
Hydrocarbons (QCLot: 1722126)									
F2 (C10-C16)	----	E601	100	µg/L	3540 µg/L	104	70.0	130	----
F3 (C16-C34)	----	E601	250	µg/L	7050 µg/L	89.2	70.0	130	----
F4 (C34-C50)	----	E601	250	µg/L	5050 µg/L	110	70.0	130	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1721814)										
FJ2403177-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.56 mg/L	2.5 mg/L	102	70.0	130	----
Anions and Nutrients (QCLot: 1721818)										
FJ2403177-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1721857)										
VA24C7998-002	Anonymous	Chloride	16887-00-6	E235.Cl-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1721859)										
VA24C7998-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1721860)										
VA24C7998-002	Anonymous	Fluoride	16984-48-8	E235.F-L	0.984 mg/L	1 mg/L	98.4	75.0	125	----
Anions and Nutrients (QCLot: 1721861)										
YL2401739-003	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	4.72 mg/L	5 mg/L	94.5	75.0	125	----
Anions and Nutrients (QCLot: 1721862)										
YL2401739-003	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	24.5 mg/L	25 mg/L	97.9	75.0	125	----
Anions and Nutrients (QCLot: 1721863)										
YL2401739-003	Anonymous	Bromide	24959-67-9	E235.Br-U	5.20 mg/L	5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1721864)										
VA24C7998-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0283 mg/L	0.03 mg/L	94.3	70.0	130	----
Anions and Nutrients (QCLot: 1722784)										
VA24C8129-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.3 mg/L	10 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1725550)										
EO2409513-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1725554)										
EO2409522-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0784 mg/L	0.067 mg/L	117	70.0	130	----
Anions and Nutrients (QCLot: 1725559)										
YL2401739-002	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0541 mg/L	0.05 mg/L	108	70.0	130	----
Anions and Nutrients (QCLot: 1725560)										
YL2401739-002	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0568 mg/L	0.05 mg/L	114	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1721815)										
FJ2403177-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	5.04 mg/L	5 mg/L	101	70.0	130	----
Total Metals (QCLot: 1722943)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1722943) - continued										
VA24C8156-001	Anonymous	Aluminum, total	7429-90-5	E420	ND mg/L	----	ND	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0190 mg/L	0.02 mg/L	95.2	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0381 mg/L	0.04 mg/L	95.2	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00929 mg/L	0.01 mg/L	92.9	70.0	130	----
		Boron, total	7440-42-8	E420	0.092 mg/L	0.1 mg/L	91.9	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00383 mg/L	0.004 mg/L	95.7	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00957 mg/L	0.01 mg/L	95.7	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0926 mg/L	0.1 mg/L	92.6	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0188 mg/L	0.02 mg/L	93.8	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		Silicon, total	7440-21-3	E420	9.82 mg/L	10 mg/L	98.2	70.0	130	----
		Silver, total	7440-22-4	E420	0.00384 mg/L	0.004 mg/L	96.1	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	----	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00365 mg/L	0.004 mg/L	91.3	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		Titanium, total	7440-32-6	E420	ND mg/L	----	ND	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00386 mg/L	0.004 mg/L	96.4	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0968 mg/L	0.1 mg/L	96.8	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
Total Metals (QCLot: 1722944)										
VA24C8156-001	Anonymous	Arsenic, total	7440-38-2	E420-L	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		Cobalt, total	7440-48-4	E420-L	0.0183 mg/L	0.02 mg/L	91.4	70.0	130	----
		Copper, total	7440-50-8	E420-L	0.0185 mg/L	0.02 mg/L	92.4	70.0	130	----
		Iron, total	7439-89-6	E420-L	ND mg/L	----	ND	70.0	130	----
		Lead, total	7439-92-1	E420-L	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	----
		Nickel, total	7440-02-0	E420-L	0.0368 mg/L	0.04 mg/L	92.0	70.0	130	----
		Sodium, total	7440-23-5	E420-L	ND mg/L	----	ND	70.0	130	----
		Tin, total	7440-31-5	E420-L	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Zinc, total	7440-66-6	E420-L	0.363 mg/L	0.4 mg/L	90.7	70.0	130	----
Total Metals (QCLot: 1722945)										
VA24C8156-001	Anonymous	Chromium, total	7440-47-3	E420.Cr-L	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----
Total Metals (QCLot: 1724781)										
VA24C7782-001	Anonymous	Mercury, total	7439-97-6	E508	0.000100 mg/L	0 mg/L	100	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1722990)										
VA24C8158-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.197 mg/L	0.2 mg/L	98.5	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0193 mg/L	0.02 mg/L	96.3	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0191 mg/L	0.02 mg/L	95.3	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0383 mg/L	0.04 mg/L	95.9	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00891 mg/L	0.01 mg/L	89.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00373 mg/L	0.004 mg/L	93.2	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00988 mg/L	0.01 mg/L	98.8	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0943 mg/L	0.1 mg/L	94.3	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0197 mg/L	0.02 mg/L	98.5	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0183 mg/L	0.02 mg/L	91.6	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.24 mg/L	10 mg/L	92.4	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00246 mg/L	0.004 mg/L	61.6	70.0	130	MS-Ag
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	21.7 mg/L	20 mg/L	108	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0391 mg/L	0.04 mg/L	97.7	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00367 mg/L	0.004 mg/L	91.8	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0391 mg/L	0.04 mg/L	97.7	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0183 mg/L	0.02 mg/L	91.7	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00374 mg/L	0.004 mg/L	93.6	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.395 mg/L	0.4 mg/L	98.8	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0394 mg/L	0.04 mg/L	98.4	70.0	130	----
Dissolved Metals (QCLot: 1722991)										
VA24C8158-001	Anonymous	Arsenic, dissolved	7440-38-2	E421-L	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Boron, dissolved	7440-42-8	E421-L	0.0877 mg/L	0.1 mg/L	87.7	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421-L	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Copper, dissolved	7440-50-8	E421-L	0.0177 mg/L	0.02 mg/L	88.7	70.0	130	----
		Iron, dissolved	7439-89-6	E421-L	1.87 mg/L	2 mg/L	93.4	70.0	130	----
		Lead, dissolved	7439-92-1	E421-L	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Nickel, dissolved	7440-02-0	E421-L	0.0384 mg/L	0.04 mg/L	96.1	70.0	130	----
		Sodium, dissolved	7440-23-5	E421-L	ND mg/L	----	ND	70.0	130	----
		Tin, dissolved	7440-31-5	E421-L	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
Dissolved Metals (QCLot: 1722992)										
VA24C8158-001	Anonymous	Chromium, dissolved	7440-47-3	E421.Cr-L	0.0380 mg/L	0.04 mg/L	95.1	70.0	130	----
Dissolved Metals (QCLot: 1725842)										
YL2401742-002	SNP-06-3m-03	Mercury, dissolved	7439-97-6	E509	0.0000887 mg/L	0 mg/L	88.7	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1722079)										
YL2401742-001	SNP-06-3m	Benzene	71-43-2	E611A	92.5 µg/L	100 µg/L	92.5	60.0	140	----
		Ethylbenzene	100-41-4	E611A	88.2 µg/L	100 µg/L	88.2	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	108 µg/L	100 µg/L	108	60.0	140	----
		Styrene	100-42-5	E611A	84.8 µg/L	100 µg/L	84.8	60.0	140	----
		Toluene	108-88-3	E611A	91.2 µg/L	100 µg/L	91.2	60.0	140	----
		Xylene, m+p-	179601-23-1	E611A	231 µg/L	200 µg/L	116	60.0	140	----
		Xylene, o-	95-47-6	E611A	91.2 µg/L	100 µg/L	91.2	60.0	140	----
Hydrocarbons (QCLot: 1722077)										
FJ2403177-002	Anonymous	F1 (C6-C10)	----	E581.VH+F1	4720 µg/L	6310 µg/L	74.8	60.0	140	----

Qualifiers

Qualifier	Description
MS-Ag	*MS-Ag: Matrix Spike recovery for silver was marginally below DQO (40 to <60%) due to its instability in the sample matrix. Silver was not detected. Reported result (< LOR) is reliable*

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 20241009/ 06

Report To	Contact and company name below will appear on the final report
Company:	DeBeers Gahcho Kué
Contact:	Dave Ott/Michelle Burger
Phone:	867-679-5812/5814
	Company address below will appear on the final report
Street:	5120 49th Street Suite 300
City/Province:	Yellowknife, NT
Postal Code:	X1A 3S8

Report Format / Distribution

Select Report Format: Quality Control (QC) Report with Report

Select Distribution:

Email 1 or Fax: Environment.GahchoKue@debeersgroup.com
Email 2: Dave.Ott@debeersgroup.com
Email 3: Michelle.Burger@debeersgroup.com

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days): 4 day [P4-20%]; 3 day [P3-25%]; 2 day [P2-50%]

EMERGENCY: 1 Business day [E - 100%]; Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]

Date and time Required for all E&P TA: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To	Yes	No
	Copy of Invoice with Report	Yes	No
Company:	DeBeers Group		
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8		

Invoice Distribution

Select Invoice Distribution:
Email 1 or Fax: ap.invoices@debeersgroup.com
Email 2: Mason.Elwood@debeersgroup.com

Project Information

ALS Account # / Quote #:
Job #: SNP-06 Monthly
PO / AFE: 4100968747
LSD:

Oil and Gas Required Fields (client use)

Approver ID: | Cost Center:
GL Account: | Routing Code:
Activity Code:
Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg | Sampler: J. Vornbrock

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical Parameters	Major Ions	Total Nutrients	Dissolved Nutrients	Total Metals	Dissolved Metals	Total Mercury	Dissolved Mercury	BTEX	Total Petroleum Hydrocarbons					SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
								P				P		P	P						
	SNP-06-3m	8-Oct-24	13:57	Water	12	R	R	R	R	R	R	R	R	R	R						
	SNP-06-3m-03	8-Oct-24	11:11	Water	12	R	R	R	R	R	R	R	R	R	R						

Environmental Division
Yellowknife
Work Order Reference
YL2401742
Telephone : +1 867 873 5593

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

Are samples for human drinking water use?

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
4.9							

SHIPMENT RELEASE (client use)

Released by: J. Vornbrock | Date: 9-Oct-24 | Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: | Date: OCT 10/24 | Time: 9:40

FINAL SHIPMENT RECEPTION (lab use only)

Received by: | Date: | Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0228a v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241009/ 06

Date: October 9, 2024

	8-Oct-24	8-Oct-24			
	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date
	SNP-06-3m	SNP-06-3m-03			
	Sample Name	Sample Name	Sample Name	Sample Name	Sample Name
Physical Parameters **Rush (Y/N)**	N	N			
Conductivity	X	X			
pH	X	X			
Total Suspended Solids (Ultra Low)	X	X			
Turbidity	X	X			
Major Ions **Rush (Y/N)**	N	N			
Alkalinity, Bicarbonate (as CaCO3)	X	X			
Alkalinity, Carbonate (as CaCO3)	X	X			
Alkalinity, Hydroxide (as CaCO3)	X	X			
Alkalinity, Total (as CaCO3)	X	X			
Hardness (as CaCO3)	X	X			
Calcium	X	X			
Magnesium	X	X			
Potassium	X	X			
Sodium	X	X			
Chloride (Cl)	X	X			
Fluoride (F)	X	X			
Total Dissolved Solids (SNP-07)	X	X			
Sulphate (SO4)	X	X			
Reactive Silicate	X	X			
Nutrients **Rush (Y/N)**	N	N			
Lab to Filter Dissolved Nutrients	X	X			
Ammonia, Total (as N)	X	X			
Nitrate and Nitrite (as N)	X	X			
Nitrate (as N)	X	X			
Nitrite (as N)	X	X			
Total Kjeldahl Nitrogen	X	X			
Orthophosphate-Dissolved (as P)	X	X			
Phosphorus (P)-Total Dissolved	X	X			
Phosphorus (P)-Total	X	X			
Phosphorus (P)-Dissolved Organic	X	X			
Phosphorus (P)-Total Inorganic	X	X			
Phosphorus (P)-Dissolved Inorganic	X	X			
Total Organic Carbon	X	X			
Aggregate Organics **Rush (Y/N)**					
Biochemical Oxygen Demand (SNP-07)					
Oil and Grease (SNP-07)					
Metals **Rush (Y/N)**	N	N			
Lab to Filter Dissolved Metals	X	X			
Total Metals (preserved with HNO3)	X	X			
Dissolved Metals (not preserved)	X	X			

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Rubidium, Selenium, Silver, Strontium, Thallium, Titanium, Uranium, Vanadium, Zinc.

Speciated Metals **Rush (Y/N)**					
Hydrocarbons and VOCs **Rush (Y/N)**					
BTEX, F1-F4					
Total Petroleum Hydrocarbons					
Bacteria **Rush (Y/N)**					
Total Coliforms, Fecal Coliforms, and E. coli					
Radionuclides (SNP-08/09/10) **Rush (Y/N)**					
Uranium and Thorium					
Radium-226 (if U & Th leach to grndwtr)					

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **YL2401743**		
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Edmonton
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife Northwest Territories Canada X1A 1P8	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-21 Monthly	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Date Analysis Commenced	: 22-Oct-2024
C-O-C number	: 20241009/ 05	Issue Date	: 25-Oct-2024 14:13
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Manpreet Cheema	Lab Assistant	Metals, Burnaby, British Columbia
Maya Urquhart	Lab Analyst	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
pH units	pH units
µS/cm	microsiemens per centimetre
NTU	nephelometric turbidity units
-	no units

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
SFP	Sample was filtered and preserved at the laboratory.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-21-3m	----	----	----	----
				Client sampling date / time	08-Oct-2024 16:09	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401743-001	----	----	----	----
					Result	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	19.5	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	19.5	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	2280	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	651	----	----	----	----
pH	----	E108/VA	0.10	pH units	7.43	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	1570	----	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	3.8	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	2.72	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.496	----	----	----	----
Bromide	24959-67-9	E235.Br-U/VA	0.0500	mg/L	7.31	----	----	----	----
Chloride	16887-00-6	E235.Cl-L/VA	0.50	mg/L	590	----	----	----	----
Fluoride	16984-48-8	E235.F-L/VA	0.020	mg/L	<0.200 DLDS	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	0.881	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-T/VA	0.0030	mg/L	6.01	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/VA	0.0032	mg/L	6.06	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0050	mg/L	0.0493	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-21-3m	----	----	----	----
				Client sampling date / time	08-Oct-2024 16:09	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401743-001	----	----	----	----
					Result	----	----	----	----
Anions and Nutrients									
Phosphorus, dissolved inorganic	----	E377-L/EO	0.0010	mg/L	0.0025 SFP	----	----	----	----
Phosphorus, dissolved organic	----	EC377-L.ORG/EO	0.0020	mg/L	0.0030	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0136	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0055	----	----	----	----
Phosphorus, total inorganic	----	E376-L/EO	0.0010	mg/L	0.0050	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	1.26	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4-L/VA	0.300	mg/L	177	----	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	5.45	----	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.0425	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----
Arsenic, total	7440-38-2	E420-L/VA	0.000030	mg/L	0.000242	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.0627	----	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L	<0.000020	----	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	----	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L	0.435	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	0.000132	----	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	193	----	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000055	----	----	----	----
Chromium, total	7440-47-3	E420.Cr-L/VA	0.00010	mg/L	0.00012	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-21-3m	----	----	----	----
				Client sampling date / time	08-Oct-2024 16:09	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401743-001	----	----	----	----
					Result	----	----	----	----
Total Metals									
Cobalt, total	7440-48-4	E420-L/VA	0.000050	mg/L	0.00140	----	----	----	----
Copper, total	7440-50-8	E420-L/VA	0.00015	mg/L	0.00150	----	----	----	----
Iron, total	7439-89-6	E420-L/VA	0.0050	mg/L	0.112	----	----	----	----
Lead, total	7439-92-1	E420-L/VA	0.000030	mg/L	0.000047	----	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0335	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	39.2	----	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.109	----	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.00606	----	----	----	----
Nickel, total	7440-02-0	E420-L/VA	0.00010	mg/L	0.0163	----	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	11.1	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.0156	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	0.000092	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	0.69	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----
Sodium, total	7440-23-5	E420-L/VA	0.030	mg/L	176	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	3.59	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	66.5	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	0.00071	----	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	0.000060	----	----	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-21-3m	----	----	----	----
				Client sampling date / time	08-Oct-2024 16:09	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401743-001	----	----	----	----
					Result	----	----	----	----
Total Metals									
Tin, total	7440-31-5	E420-L/VA	0.000050	mg/L	<0.000050	----	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	<0.00060 DLM	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.00170	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----
Zinc, total	7440-66-6	E420-L/VA	0.0015	mg/L	0.0098	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	0.00036	----	----	----	----
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0103	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----
Arsenic, dissolved	7440-38-2	E421-L/VA	0.000030	mg/L	0.000269	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.0648	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L	<0.000020	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	----	----	----	----
Boron, dissolved	7440-42-8	E421-L/VA	0.0050	mg/L	0.408	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	0.000132	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	191	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000057	----	----	----	----
Chromium, dissolved	7440-47-3	E421.Cr-L/VA	0.00010	mg/L	<0.00010	----	----	----	----
Cobalt, dissolved	7440-48-4	E421-L/VA	0.000050	mg/L	0.000331	----	----	----	----
Copper, dissolved	7440-50-8	E421-L/VA	0.00015	mg/L	0.00110	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-21-3m	----	----	----	----
				Client sampling date / time	08-Oct-2024 16:09	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401743-001	----	----	----	----
					Result	----	----	----	----
Dissolved Metals									
Iron, dissolved	7439-89-6	E421-L/VA	0.0050	mg/L	0.0284	----	----	----	----
Lead, dissolved	7439-92-1	E421-L/VA	0.000030	mg/L	<0.000030	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.0338	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	42.3	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.0547	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.00617	----	----	----	----
Nickel, dissolved	7440-02-0	E421-L/VA	0.00010	mg/L	0.0160	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	12.0	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.0169	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	<0.000050	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	0.593	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	----	----	----	----
Sodium, dissolved	7440-23-5	E421-L/VA	0.010	mg/L	190	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	190	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	3.74	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	66.7	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	0.00039	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	0.000064	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----
Tin, dissolved	7440-31-5	E421-L/VA	0.000050	mg/L	<0.000050	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-21-3m	----	----	----	----
				Client sampling date / time	08-Oct-2024 16:09	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401743-001	----	----	----	----
					Result	----	----	----	----
Dissolved Metals									
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	<0.00030	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.00165	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	<0.00050	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	0.0082	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L	<0.00030	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-	Laboratory	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Laboratory	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2401743**	Page	: 1 of 15
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-21 Monthly	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Issue Date	: 25-Oct-2024 14:13
C-O-C number	: 20241009/ 05		
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Method Blank value outliers occur - please see following pages for full details.
- Matrix Spike outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Total Metals	QC-MRG3-1722943 001	----	Nickel, total	7440-02-0	E420-L	0.00029 mg/L B	0.0001 mg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Matrix Spike (MS) Recoveries								
Dissolved Metals	Anonymous	Anonymous	Silver, dissolved	7440-22-4	E421	61.6 % MS-Ag	70.0-130%	Recovery less than lower data quality objective

Result Qualifiers

Qualifier	Description
MS-Ag	*MS-Ag: Matrix Spike recovery for silver was marginally below DQO (40 to <60%) due to its instability in the sample matrix. Silver was not detected. Reported result (< LOR) is reliable*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-21-3m	E298	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	22-Oct-2024	28 days	14 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-21-3m	E235.Br-U	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-21-3m	E235.Cl-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-21-3m	E377-L	08-Oct-2024	23-Oct-2024	3 days	15 days	× EHTR	24-Oct-2024	28 days	1 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE SNP-21-3m	E378-U	08-Oct-2024	21-Oct-2024	3 days	13 days	× EHTR	21-Oct-2024	3 days	13 days	× EHTR
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE SNP-21-3m	E235.F-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE SNP-21-3m	E235.NO3-T	08-Oct-2024	21-Oct-2024	3 days	13 days	× EHTR	21-Oct-2024	3 days	13 days	× EHTR

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-21-3m	E235.NO2-L	08-Oct-2024	21-Oct-2024	3 days	13 days	✗ EHTR	21-Oct-2024	3 days	13 days	✗ EHTR
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP-21-3m	E392	08-Oct-2024	----	----	----		22-Oct-2024	28 days	14 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE										
SNP-21-3m	E235.SO4-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-21-3m	E375-U	08-Oct-2024	23-Oct-2024	3 days	15 days	✗ EHTR	23-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-21-3m	E376-L	08-Oct-2024	23-Oct-2024	28 days	15 days	✓	24-Oct-2024	28 days	16 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
SNP-21-3m	E318	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	22-Oct-2024	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-21-3m	E372-S	08-Oct-2024	23-Oct-2024	28 days	15 days	✓	23-Oct-2024	28 days	15 days	✓
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved)										
SNP-21-3m	E421.Cr-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	22-Oct-2024	180 days	14 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SNP-21-3m	E509	08-Oct-2024	23-Oct-2024	28 days	15 days	✓	23-Oct-2024	28 days	15 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis: Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)										
HDPE - dissolved (lab preserved)										
SNP-21-3m	E421-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	22-Oct-2024	180 days	14 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SNP-21-3m	E421	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	23-Oct-2024	180 days	15 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP-21-3m	E355-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	22-Oct-2024	28 days	14 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
SNP-21-3m	E290	08-Oct-2024	21-Oct-2024	14 days	13 days	✓	22-Oct-2024	14 days	14 days	✓
Physical Tests : Conductivity in Water										
HDPE										
SNP-21-3m	E100	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	22-Oct-2024	28 days	14 days	✓
Physical Tests : pH by Meter										
HDPE										
SNP-21-3m	E108	08-Oct-2024	21-Oct-2024	0.25 hrs	317 hrs	✗ EHTR-FM	22-Oct-2024	0.25 hrs	327 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE										
SNP-21-3m	E162	08-Oct-2024	----	----	----		23-Oct-2024	7 days	14 days	✗ EHTR
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SNP-21-3m	E160-L	08-Oct-2024	----	----	----		23-Oct-2024	7 days	14 days	✗ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE										
SNP-21-3m	E121	08-Oct-2024	----	----	----		21-Oct-2024	3 days	13 days	✗ EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) SNP-21-3m	E420.Cr-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	24-Oct-2024	180 days	16 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) SNP-21-3m	E508	08-Oct-2024	23-Oct-2024	28 days	14 days	✓	23-Oct-2024	28 days	14 days	✓
Total Metals : Total Metals by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) SNP-21-3m	E420-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	24-Oct-2024	180 days	16 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) SNP-21-3m	E420	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	24-Oct-2024	180 days	16 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1721818	1	20	5.0	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1722992	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1725842	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1722991	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
pH by Meter	E108	1721854	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1724693	1	10	10.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1722945	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1721814	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1724781	1	18	5.5	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1722944	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1722943	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1721815	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1722021	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1721818	1	20	5.0	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1722992	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Dissolved Mercury in Water by CVAAS	E509	1725842	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1722991	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
pH by Meter	E108	1721854	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1724693	1	10	10.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1722945	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1721814	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1724781	1	18	5.5	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1722944	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1722943	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1721815	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1724698	1	4	25.0	5.0	✓
Turbidity by Nephelometry	E121	1722021	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1721818	1	20	5.0	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1722992	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1725842	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	2	17	11.7	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1722991	2	9	22.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB) - Continued							
TDS by Gravimetry	E162	1724693	1	10	10.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1722945	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1721814	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1724781	1	18	5.5	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1722944	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1722943	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1721815	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1724698	1	4	25.0	5.0	✓
Turbidity by Nephelometry	E121	1722021	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1721818	1	20	5.0	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1722992	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1725842	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1722991	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1722945	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1721814	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1724781	1	18	5.5	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1722944	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1722943	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1721815	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry (Low Level)	E160-L ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide by IC (Ultra Trace Level)	E235.Br-U ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC (Low Level)	E235.F-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Trace Level)	E235.NO3-T ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC (Low Level)	E235.SO4-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Total Inorganic Phosphorus is determined colourimetrically after sample has undergone H2SO4 hydrolysis
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved Inorganic Phosphorus is determined colourimetrically after H_2SO_4 hydrolysis of a sample that has been lab or field filtered through a 0.45 micron membrane filter

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Total Metals by CRC ICPMS (Low Level)	E420-L ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L ALS Environmental - Vancouver	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L ALS Environmental - Vancouver	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Vancouver	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Phosphorus, dissolved organic (0.0014 mg/L) by calculation.	EC377-L.ORG ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved inorganic phosphorus is subtracted from total dissolved phosphorus to determine dissolved organic phosphorus.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Digestion for Total Inorganic Phosphorus in water	EP376 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples undergo H2SO4 hydrolysis.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Digestion for Dissolved Inorganic Phosphorus in water	EP377 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then undergo H2SO4 hydrolysis.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

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QUALITY CONTROL REPORT

Work Order	: **YL2401743**	Page	: 1 of 18
Client	: De Beers Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-21 Monthly	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Date Analysis Commenced	: 21-Oct-2024
C-O-C number	: 20241009/ 05	Issue Date	: 25-Oct-2024 14:13
Sampler	: Jarrett Vornbrock		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta
Dan Gebert	Laboratory Analyst	Vancouver Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Inorganics, Burnaby, British Columbia
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Owen Cheng		Vancouver Metals, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Edmonton Inorganics, Edmonton, Alberta

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1721854)											
YL2401739-003	Anonymous	pH	----	E108	0.10	pH units	7.23	7.24	0.138%	4%	----
Physical Tests (QC Lot: 1721855)											
YL2401739-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	1910	1910	0.105%	10%	----
Physical Tests (QC Lot: 1721856)											
YL2401739-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	15.8	16.2	2.53%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	15.8	16.2	2.53%	20%	----
Physical Tests (QC Lot: 1722021)											
VA24C7509-001	Anonymous	Turbidity	----	E121	0.10	NTU	1.17	1.17	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1724693)											
VA24C7749-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	171	162	10	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721814)											
FJ2403177-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.132	0.136	0.004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721818)											
FJ2403168-007	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721857)											
VA24C7998-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.44	0.44	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721859)											
VA24C7998-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	7.84	7.88	0.510%	20%	----
Anions and Nutrients (QC Lot: 1721860)											
VA24C7998-001	Anonymous	Fluoride	16984-48-8	E235.F-L	0.010	mg/L	0.484	0.486	0.507%	20%	----
Anions and Nutrients (QC Lot: 1721861)											
YL2401739-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0100	mg/L	0.0204	0.0215	0.0010	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721862)											
YL2401739-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	0.0300	mg/L	3.89	3.88	0.210%	20%	----
Anions and Nutrients (QC Lot: 1721863)											
YL2401739-002	Anonymous	Bromide	24959-67-9	E235.Br-U	0.0500	mg/L	3.90	3.94	0.806%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 1721864)											
VA24C7998-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1722784)											
VA24C7986-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	19.1	19.0	0.428%	20%	----
Anions and Nutrients (QC Lot: 1725550)											
EO2409498-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0037	0.0030	0.0007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1725554)											
EO2409513-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.586	0.588	0.372%	20%	----
Anions and Nutrients (QC Lot: 1725559)											
YL2401739-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0010	mg/L	0.0078	0.0078	0.00006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1725560)											
YL2401739-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0010	mg/L	0.0010	<0.0010	0.00001	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1721815)											
FJ2403168-007	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 1722943)											
VA24C8151-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0683	0.0691	1.13%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00018	0.00018	0.000004	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0174	0.0175	0.501%	20%	----
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	0.029	0.030	0.00001	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000132	0.0000138	0.0000006	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	12.4	12.7	1.99%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000012	0.000010	0.000002	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	3.46	3.48	0.706%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0265	0.0267	0.691%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000424	0.000418	0.000007	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	2.95	2.92	0.862%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00181	0.00181	0.000004	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000107	0.000085	0.000022	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	5.48	5.40	1.34%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0677	0.0660	2.59%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	4.05	4.08	0.04	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 1722943) - continued											
VA24C8151-001	Anonymous	Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00237	0.00232	0.00005	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000015	0.000014	0.000002	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00138	0.00129	0.00009	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1722944)											
VA24C8151-001	Anonymous	Arsenic, total	7440-38-2	E420-L	0.000030	mg/L	0.000590	0.000601	1.77%	20%	----
		Cobalt, total	7440-48-4	E420-L	0.000050	mg/L	0.000216	0.000199	0.000017	Diff <2x LOR	----
		Copper, total	7440-50-8	E420-L	0.00015	mg/L	0.00261	0.00270	3.27%	20%	----
		Iron, total	7439-89-6	E420-L	0.0050	mg/L	0.117	0.118	0.388%	20%	----
		Lead, total	7439-92-1	E420-L	0.000030	mg/L	0.000060	0.000067	0.000007	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420-L	0.00010	mg/L	0.00108	0.00111	3.55%	20%	----
		Sodium, total	7440-23-5	E420-L	0.030	mg/L	7.24	7.27	0.400%	20%	----
		Tin, total	7440-31-5	E420-L	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420-L	0.0015	mg/L	0.0070	0.0070	0.000008	Diff <2x LOR	----
Total Metals (QC Lot: 1722945)											
VA24C8151-001	Anonymous	Chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00028	0.00034	0.00006	Diff <2x LOR	----
Total Metals (QC Lot: 1724781)											
VA24C7731-002	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0050 µg/L	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1722990)											
VA24C8156-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0151	0.0152	0.149%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00032	0.00032	0.000002	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0330	0.0316	4.22%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000202	0.0000160	0.0000042	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	58.1	57.3	1.33%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	14.8	14.4	3.21%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	1.06	1.04	2.19%	20%	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1722990) - continued											
VA24C8156-001	Anonymous	Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00202	0.00202	0.0959%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	6.92	6.71	3.07%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00267	0.00246	8.29%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000195	0.000200	0.000005	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.100	mg/L	2.91	2.84	2.58%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	14.8	14.4	2.44%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.269	0.270	0.500%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	30.4	30.1	0.982%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00129	0.00096	0.00032	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000291	0.000284	2.28%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00072	0.00068	0.00004	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0015	0.0014	0.0001	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1722991)											
VA24C8156-001	Anonymous	Arsenic, dissolved	7440-38-2	E421-L	0.000030	mg/L	0.000991	0.000891	10.6%	20%	----
		Boron, dissolved	7440-42-8	E421-L	0.0050	mg/L	0.0234	0.0232	0.0002	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421-L	0.000050	mg/L	0.00158	0.00158	0.482%	20%	----
		Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	0.00482	0.00477	1.20%	20%	----
		Iron, dissolved	7439-89-6	E421-L	0.0050	mg/L	0.0633	0.0600	5.27%	20%	----
		Lead, dissolved	7439-92-1	E421-L	0.000030	mg/L	<0.000030	<0.000030	0	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421-L	0.00010	mg/L	0.00302	0.00303	0.533%	20%	----
		Sodium, dissolved	7440-23-5	E421-L	0.010	mg/L	14.8	14.4	2.44%	20%	----
		Tin, dissolved	7440-31-5	E421-L	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1722992)											
VA24C8156-001	Anonymous	Chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00016	0.00012	0.00004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1725842)											
YL2401742-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1721855)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1721856)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1722021)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1724693)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1724698)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Anions and Nutrients (QCLot: 1721814)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1721818)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1721857)						
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1721859)						
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1721860)						
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1721861)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1721862)						
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	<0.0030	----
Anions and Nutrients (QCLot: 1721863)						
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1721864)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1722784)						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1725550)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725554)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725559)						
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725560)						
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 1721815)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 1722943)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1722943) - continued						
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 1722944)						
Arsenic, total	7440-38-2	E420-L	0.00003	mg/L	<0.000030	----
Cobalt, total	7440-48-4	E420-L	0.00005	mg/L	<0.000050	----
Copper, total	7440-50-8	E420-L	0.00015	mg/L	<0.00015	----
Iron, total	7439-89-6	E420-L	0.005	mg/L	<0.0050	----
Lead, total	7439-92-1	E420-L	0.00003	mg/L	<0.000030	----
Nickel, total	7440-02-0	E420-L	0.0001	mg/L	# 0.00029	B
Sodium, total	7440-23-5	E420-L	0.03	mg/L	<0.030	----
Tin, total	7440-31-5	E420-L	0.00005	mg/L	<0.000050	----
Zinc, total	7440-66-6	E420-L	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1722945)						
Chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	MBRR
Total Metals (QCLot: 1724781)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1722990)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1722990) - continued						
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 1722991)						
Arsenic, dissolved	7440-38-2	E421-L	0.00003	mg/L	<0.000030	----
Boron, dissolved	7440-42-8	E421-L	0.005	mg/L	<0.0050	----
Cobalt, dissolved	7440-48-4	E421-L	0.00005	mg/L	<0.000050	----
Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	<0.00015	----
Iron, dissolved	7439-89-6	E421-L	0.005	mg/L	<0.0050	----
Lead, dissolved	7439-92-1	E421-L	0.00003	mg/L	<0.000030	----
Nickel, dissolved	7440-02-0	E421-L	0.0001	mg/L	<0.00010	----
Sodium, dissolved	7440-23-5	E421-L	0.01	mg/L	<0.010	MBRR
Tin, dissolved	7440-31-5	E421-L	0.00005	mg/L	<0.000050	----
Dissolved Metals (QCLot: 1722992)						
Chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 1725842)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----

Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*
MBRR	*Initial MB for this submission had positive results for flagged analyte (data not shown). Low level samples were repeated with new QC (2nd MB results shown). High level results (>5x initial MB level) and non-detect results were reported and are defensible*

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1721854)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1721855)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 1721856)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	116	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1722021)									
Turbidity	----	E121	0.1	NTU	200 NTU	97.0	85.0	115	----
Physical Tests (QCLot: 1724693)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	105	85.0	115	----
Physical Tests (QCLot: 1724698)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	92.5	85.0	115	----
Anions and Nutrients (QCLot: 1721814)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	97.2	75.0	125	----
Anions and Nutrients (QCLot: 1721818)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1721857)									
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 1721859)									
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1721860)									
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	1 mg/L	97.4	90.0	110	----
Anions and Nutrients (QCLot: 1721861)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	97.9	90.0	110	----
Anions and Nutrients (QCLot: 1721862)									
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	2.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 1721863)									
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	0.5 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1721864)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	90.9	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1722784)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1725550)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	107	80.0	120	----
Anions and Nutrients (QCLot: 1725554)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	106	80.0	120	----
Anions and Nutrients (QCLot: 1725559)									
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	0.05 mg/L	100	80.0	120	----
Anions and Nutrients (QCLot: 1725560)									
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	0.05 mg/L	113	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1721815)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	105	80.0	120	----
Total Metals (QCLot: 1722943)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	102	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	95.1	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	97.8	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	91.8	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	99.2	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	96.4	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	97.7	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	95.4	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	98.9	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	100	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	107	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	99.4	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	106	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	93.0	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	97.7	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	96.6	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	105	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	97.9	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1722943) - continued									
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	93.0	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	100	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	95.9	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	98.2	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Total Metals (QCLot: 1722944)									
Arsenic, total	7440-38-2	E420-L	0.00003	mg/L	1 mg/L	103	80.0	120	----
Cobalt, total	7440-48-4	E420-L	0.00005	mg/L	0.25 mg/L	99.5	80.0	120	----
Copper, total	7440-50-8	E420-L	0.00015	mg/L	0.25 mg/L	101	80.0	120	----
Iron, total	7439-89-6	E420-L	0.005	mg/L	1 mg/L	101	80.0	120	----
Lead, total	7439-92-1	E420-L	0.00003	mg/L	0.5 mg/L	96.5	80.0	120	----
Nickel, total	7440-02-0	E420-L	0.0001	mg/L	0.5 mg/L	99.2	80.0	120	----
Sodium, total	7440-23-5	E420-L	0.03	mg/L	50 mg/L	99.9	80.0	120	----
Tin, total	7440-31-5	E420-L	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, total	7440-66-6	E420-L	0.0015	mg/L	0.5 mg/L	101	80.0	120	----
Total Metals (QCLot: 1722945)									
Chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Total Metals (QCLot: 1724781)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 1722990)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	98.9	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	99.4	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	103	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	98.8	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.3	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	101	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	105	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	99.0	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	96.8	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	100.0	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1722990) - continued									
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	89.6	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	99.7	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	90.7	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	99.4	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	102	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	97.1	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	104	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	93.5	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	97.6	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	105	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	97.7	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	100	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	97.8	80.0	120	----
Dissolved Metals (QCLot: 1722991)									
Arsenic, dissolved	7440-38-2	E421-L	0.00003	mg/L	1 mg/L	102	80.0	120	----
Boron, dissolved	7440-42-8	E421-L	0.005	mg/L	1 mg/L	108	80.0	120	----
Cobalt, dissolved	7440-48-4	E421-L	0.00005	mg/L	0.25 mg/L	96.6	80.0	120	----
Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	0.25 mg/L	96.2	80.0	120	----
Iron, dissolved	7439-89-6	E421-L	0.005	mg/L	1 mg/L	92.9	80.0	120	----
Lead, dissolved	7439-92-1	E421-L	0.00003	mg/L	0.5 mg/L	102	80.0	120	----
Nickel, dissolved	7440-02-0	E421-L	0.0001	mg/L	0.5 mg/L	96.8	80.0	120	----
Sodium, dissolved	7440-23-5	E421-L	0.01	mg/L	50 mg/L	103	80.0	120	----
Tin, dissolved	7440-31-5	E421-L	0.00005	mg/L	0.5 mg/L	99.3	80.0	120	----
Dissolved Metals (QCLot: 1722992)									
Chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	96.3	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	90.0	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1721814)										
FJ2403177-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.56 mg/L	2.5 mg/L	102	70.0	130	----
Anions and Nutrients (QCLot: 1721818)										
FJ2403177-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1721857)										
VA24C7998-002	Anonymous	Chloride	16887-00-6	E235.Cl-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1721859)										
VA24C7998-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1721860)										
VA24C7998-002	Anonymous	Fluoride	16984-48-8	E235.F-L	0.984 mg/L	1 mg/L	98.4	75.0	125	----
Anions and Nutrients (QCLot: 1721861)										
YL2401739-003	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	4.72 mg/L	5 mg/L	94.5	75.0	125	----
Anions and Nutrients (QCLot: 1721862)										
YL2401739-003	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	24.5 mg/L	25 mg/L	97.9	75.0	125	----
Anions and Nutrients (QCLot: 1721863)										
YL2401739-003	Anonymous	Bromide	24959-67-9	E235.Br-U	5.20 mg/L	5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1721864)										
VA24C7998-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0283 mg/L	0.03 mg/L	94.3	70.0	130	----
Anions and Nutrients (QCLot: 1722784)										
VA24C8129-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.3 mg/L	10 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1725550)										
EO2409513-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1725554)										
EO2409522-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0784 mg/L	0.067 mg/L	117	70.0	130	----
Anions and Nutrients (QCLot: 1725559)										
YL2401739-002	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0541 mg/L	0.05 mg/L	108	70.0	130	----
Anions and Nutrients (QCLot: 1725560)										
YL2401739-002	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0568 mg/L	0.05 mg/L	114	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1721815)										
FJ2403177-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	5.04 mg/L	5 mg/L	101	70.0	130	----
Total Metals (QCLot: 1722943)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1722943) - continued										
VA24C8156-001	Anonymous	Aluminum, total	7429-90-5	E420	ND mg/L	----	ND	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0190 mg/L	0.02 mg/L	95.2	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0381 mg/L	0.04 mg/L	95.2	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00929 mg/L	0.01 mg/L	92.9	70.0	130	----
		Boron, total	7440-42-8	E420	0.092 mg/L	0.1 mg/L	91.9	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00383 mg/L	0.004 mg/L	95.7	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00957 mg/L	0.01 mg/L	95.7	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0926 mg/L	0.1 mg/L	92.6	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0188 mg/L	0.02 mg/L	93.8	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		Silicon, total	7440-21-3	E420	9.82 mg/L	10 mg/L	98.2	70.0	130	----
		Silver, total	7440-22-4	E420	0.00384 mg/L	0.004 mg/L	96.1	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	----	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00365 mg/L	0.004 mg/L	91.3	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		Titanium, total	7440-32-6	E420	ND mg/L	----	ND	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00386 mg/L	0.004 mg/L	96.4	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0968 mg/L	0.1 mg/L	96.8	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
Total Metals (QCLot: 1722944)										
VA24C8156-001	Anonymous	Arsenic, total	7440-38-2	E420-L	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		Cobalt, total	7440-48-4	E420-L	0.0183 mg/L	0.02 mg/L	91.4	70.0	130	----
		Copper, total	7440-50-8	E420-L	0.0185 mg/L	0.02 mg/L	92.4	70.0	130	----
		Iron, total	7439-89-6	E420-L	ND mg/L	----	ND	70.0	130	----
		Lead, total	7439-92-1	E420-L	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	----
		Nickel, total	7440-02-0	E420-L	0.0368 mg/L	0.04 mg/L	92.0	70.0	130	----
		Sodium, total	7440-23-5	E420-L	ND mg/L	----	ND	70.0	130	----
		Tin, total	7440-31-5	E420-L	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Zinc, total	7440-66-6	E420-L	0.363 mg/L	0.4 mg/L	90.7	70.0	130	----
Total Metals (QCLot: 1722945)										
VA24C8156-001	Anonymous	Chromium, total	7440-47-3	E420.Cr-L	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----
Total Metals (QCLot: 1724781)										
VA24C7782-001	Anonymous	Mercury, total	7439-97-6	E508	0.000100 mg/L	0 mg/L	100	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1722990)										
VA24C8158-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.197 mg/L	0.2 mg/L	98.5	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0193 mg/L	0.02 mg/L	96.3	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0191 mg/L	0.02 mg/L	95.3	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0383 mg/L	0.04 mg/L	95.9	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00891 mg/L	0.01 mg/L	89.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00373 mg/L	0.004 mg/L	93.2	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00988 mg/L	0.01 mg/L	98.8	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0943 mg/L	0.1 mg/L	94.3	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0197 mg/L	0.02 mg/L	98.5	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0183 mg/L	0.02 mg/L	91.6	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.24 mg/L	10 mg/L	92.4	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00246 mg/L	0.004 mg/L	61.6	70.0	130	MS-Ag
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	21.7 mg/L	20 mg/L	108	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0391 mg/L	0.04 mg/L	97.7	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00367 mg/L	0.004 mg/L	91.8	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0391 mg/L	0.04 mg/L	97.7	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0183 mg/L	0.02 mg/L	91.7	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00374 mg/L	0.004 mg/L	93.6	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.395 mg/L	0.4 mg/L	98.8	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0394 mg/L	0.04 mg/L	98.4	70.0	130	----
Dissolved Metals (QCLot: 1722991)										
VA24C8158-001	Anonymous	Arsenic, dissolved	7440-38-2	E421-L	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Boron, dissolved	7440-42-8	E421-L	0.0877 mg/L	0.1 mg/L	87.7	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421-L	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Copper, dissolved	7440-50-8	E421-L	0.0177 mg/L	0.02 mg/L	88.7	70.0	130	----
		Iron, dissolved	7439-89-6	E421-L	1.87 mg/L	2 mg/L	93.4	70.0	130	----
		Lead, dissolved	7439-92-1	E421-L	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Nickel, dissolved	7440-02-0	E421-L	0.0384 mg/L	0.04 mg/L	96.1	70.0	130	----
		Sodium, dissolved	7440-23-5	E421-L	ND mg/L	----	ND	70.0	130	----
		Tin, dissolved	7440-31-5	E421-L	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
Dissolved Metals (QCLot: 1722992)										
VA24C8158-001	Anonymous	Chromium, dissolved	7440-47-3	E421.Cr-L	0.0380 mg/L	0.04 mg/L	95.1	70.0	130	----
Dissolved Metals (QCLot: 1725842)										
YL2401742-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000887 mg/L	0 mg/L	88.7	70.0	130	----

Qualifiers

Qualifier	Description
MS-Ag	MS-Ag: Matrix Spike recovery for silver was marginally below DQO (40 to <60%) due to its instability in the sample matrix. Silver was not detected. Reported result (< LOR) is reliable

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 20241009/ 05

Report To	Contact and company name below will appear on the final report
Company:	DeBeers Gahcho Kué
Contact:	Dave Ott/Michelle Burger
Phone:	867-679-5812/5814
	Company address below will appear on the final report
Street:	5120 49th Street Suite 300
City/Province:	Yellowknife, NT
Postal Code:	X1A 3S8

Report Format / Distribution

Select Report Format:
Quality Control (QC) Report with Report

Select Distribution:
Email 1 or Fax: Environment.GahchoKue@debeersgroup.com
Email 2: Dave.Ott@debeersgroup.com
Email 3: Michelle.Burger@debeersgroup.com

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days): 4 day [P4-20%]; 3 day [P3-25%]; 2 day [P2-50%]

EMERGENCY: 1 Business day [E - 100%]; Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]

Date and time Required for all E&P TA: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To	Yes	No
	Copy of Invoice with Report	Yes	No
Company:	DeBeers Group		
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8		

Invoice Distribution

Select Invoice Distribution:
Email 1 or Fax: ap.invoices@debeersgroup.com
Email 2: Mason.Elwood@debeersgroup.com

Project Information

ALS Account # / Quote #:	
Job #:	SNP-21 Monthly
PO / AFE:	4100968747
LSD:	

Oil and Gas Required Fields (client use)

Approver ID:	Cost Center:
GL Account:	Routing Code:
Activity Code:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler: J. Vornbrock

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical Parameters	Major Ions	Total Nutrients	Dissolved Nutrients	Total Metals	Dissolved Metals	Total Mercury	Dissolved Mercury	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
								P		P		P			
	SNP-21-3m	8-Oct-24	16:09	Water	8	R	R	R	R	R	R	R	R		

Environmental Division
Yellowknife
Work Order Reference
YL2401743

Telephone : +1 867 873 5593

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

Are samples for human drinking water use?

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
4.9							

SHIPMENT RELEASE (client use)

Released by: J. Vornbrock Date: 9-Oct-24 Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: SA Date: 16 OCT 24 Time: 9:40

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY NA-FM-0326a v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241009/ 05

Date: October 9, 2024

	8-Oct-24				
	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date
	SNP-21-3m				
	Sample Name	Sample Name	Sample Name	Sample Name	Sample Name
Physical Parameters **Rush (Y/N)**	N				
Conductivity	X				
pH	X				
Total Suspended Solids (Ultra Low)	X				
Turbidity	X				
Major Ions **Rush (Y/N)**	N				
Alkalinity, Bicarbonate (as CaCO3)	X				
Alkalinity, Carbonate (as CaCO3)	X				
Alkalinity, Hydroxide (as CaCO3)	X				
Alkalinity, Total (as CaCO3)	X				
Hardness (as CaCO3)	X				
Calcium	X				
Magnesium	X				
Potassium	X				
Sodium	X				
Chloride (Cl)	X				
Fluoride (F)	X				
Total Dissolved Solids (SNP-07)	X				
Sulphate (SO4)	X				
Reactive Silicate	X				
Nutrients **Rush (Y/N)**	N				
Lab to Filter Dissolved Nutrients	X				
Ammonia, Total (as N)	X				
Nitrate and Nitrite (as N)	X				
Nitrate (as N)	X				
Nitrite (as N)	X				
Total Kjeldahl Nitrogen	X				
Orthophosphate-Dissolved (as P)	X				
Phosphorus (P)-Total Dissolved	X				
Phosphorus (P)-Total	X				
Phosphorus (P)-Dissolved Organic	X				
Phosphorus (P)-Total Inorganic	X				
Phosphorus (P)-Dissolved Inorganic	X				
Total Organic Carbon	X				
Aggregate Organics **Rush (Y/N)**					
Biochemical Oxygen Demand (SNP-07)					
Oil and Grease (SNP-07)					
Metals **Rush (Y/N)**	N				
Lab to Filter Dissolved Metals	X				
Total Metals (preserved with HNO3)	X				
Dissolved Metals (not preserved)	X				

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Rubidium, Selenium, Silver, Strontium, Thallium, Titanium, Uranium, Vanadium, Zinc.

Speciated Metals **Rush (Y/N)**					
Hydrocarbons and VOCs **Rush (Y/N)**					
BTEX, F1-F4					
Total Petroleum Hydrocarbons					
Bacteria **Rush (Y/N)**					
Total Coliforms, Fecal Coliforms, and E. coli					
Radionuclides (SNP-08/09/10) **Rush (Y/N)**					
Uranium and Thorium					
Radium-226 (if U & Th leach to grndwtr)					

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **YL2401744**		
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Edmonton
Contact	: Dave Ott	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife Northwest Territories Canada X1A 1P8	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: ----	Telephone	: 1 867 445 7143
Project	: SNP-05 MONTHLY	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Date Analysis Commenced	: 22-Oct-2024
C-O-C number	: ----	Issue Date	: 28-Oct-2024 11:47
Sampler	: ----		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Manpreet Cheema	Lab Assistant	Metals, Burnaby, British Columbia
Maya Urquhart	Lab Analyst	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta
Wingyee Cheng	Analyst- General	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units
µS/cm	microsiemens per centimetre
-	no units

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
SFP	Sample was filtered and preserved at the laboratory.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate -N is > 10x TKN.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-05-5M	----	----	----	----
				Client sampling date / time	08-Oct-2024 13:05	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401744-001	----	----	----	----
					Result	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	33.8	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	33.8	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	1660	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	460	----	----	----	----
pH	----	E108/VA	0.10	pH units	7.69	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	1180	----	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	<1.0	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	0.74	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0307	----	----	----	----
Bromide	24959-67-9	E235.Br-U/VA	0.0500	mg/L	4.58	----	----	----	----
Chloride	16887-00-6	E235.Cl-L/VA	0.50	mg/L	411	----	----	----	----
Fluoride	16984-48-8	E235.F-L/VA	0.020	mg/L	0.335	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	0.449 TKNI	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-T/VA	0.0030	mg/L	9.45	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/VA	0.0032	mg/L	9.48	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0050	mg/L	0.0300	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-05-5M	----	----	----	----
				Client sampling date / time	08-Oct-2024 13:05	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401744-001	----	----	----	----
					Result	----	----	----	----
Anions and Nutrients									
Phosphorus, dissolved inorganic	----	E377-L/EO	0.0010	mg/L	<0.0010 SFP	----	----	----	----
Phosphorus, dissolved organic	----	EC377-L.ORG/EO	0.0020	mg/L	0.0038	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0057	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0038	----	----	----	----
Phosphorus, total inorganic	----	E376-L/EO	0.0010	mg/L	0.0012	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	1.75	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4-L/VA	0.300	mg/L	92.5	----	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	2.19	----	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.0166	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	0.00012	----	----	----	----
Arsenic, total	7440-38-2	E420-L/VA	0.000030	mg/L	0.000182	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.118	----	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L	<0.000020	----	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	----	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L	0.690	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	0.0000176	----	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	123	----	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000049	----	----	----	----
Chromium, total	7440-47-3	E420.Cr-L/VA	0.00010	mg/L	<0.00010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-05-5M	----	----	----	----
				Client sampling date / time	08-Oct-2024 13:05	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401744-001	----	----	----	----
					Result	----	----	----	----
Total Metals									
Cobalt, total	7440-48-4	E420-L/VA	0.000050	mg/L	0.000162	----	----	----	----
Copper, total	7440-50-8	E420-L/VA	0.00015	mg/L	0.00058	----	----	----	----
Iron, total	7439-89-6	E420-L/VA	0.0050	mg/L	0.0178	----	----	----	----
Lead, total	7439-92-1	E420-L/VA	0.000030	mg/L	0.000070	----	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0207	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	34.4	----	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.0118	----	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.00719	----	----	----	----
Nickel, total	7440-02-0	E420-L/VA	0.00010	mg/L	0.00392	----	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	24.5	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.0236	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	0.000054	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	0.97	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----
Sodium, total	7440-23-5	E420-L/VA	0.030	mg/L	112	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	1.92	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	34.8	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	0.00039	----	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	0.000041	----	----	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-05-5M	----	----	----	----
				Client sampling date / time	08-Oct-2024 13:05	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401744-001	----	----	----	----
					Result	----	----	----	----
Total Metals									
Tin, total	7440-31-5	E420-L/VA	0.000050	mg/L	<0.000050	----	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	<0.00030	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.00183	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----
Zinc, total	7440-66-6	E420-L/VA	0.0015	mg/L	<0.0015	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00020	----	----	----	----
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0063	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----
Arsenic, dissolved	7440-38-2	E421-L/VA	0.000030	mg/L	0.000147	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.121	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L	<0.000020	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	----	----	----	----
Boron, dissolved	7440-42-8	E421-L/VA	0.0050	mg/L	0.688	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	0.0000228	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	125	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000049	----	----	----	----
Chromium, dissolved	7440-47-3	E421.Cr-L/VA	0.00010	mg/L	<0.00010	----	----	----	----
Cobalt, dissolved	7440-48-4	E421-L/VA	0.000050	mg/L	<0.000050	----	----	----	----
Copper, dissolved	7440-50-8	E421-L/VA	0.00015	mg/L	0.00044	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-05-5M	----	----	----	----
				Client sampling date / time	08-Oct-2024 13:05	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401744-001	----	----	----	----
					Result	----	----	----	----
Dissolved Metals									
Iron, dissolved	7439-89-6	E421-L/VA	0.0050	mg/L	<0.0050	----	----	----	----
Lead, dissolved	7439-92-1	E421-L/VA	0.000030	mg/L	<0.000030	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.0223	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	35.9	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.00189	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.00711	----	----	----	----
Nickel, dissolved	7440-02-0	E421-L/VA	0.00010	mg/L	0.00376	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	26.5	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.0248	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	<0.000050	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	0.829	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	----	----	----	----
Sodium, dissolved	7440-23-5	E421-L/VA	0.010	mg/L	117	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	117	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	1.96	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	32.9	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	0.00023	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	0.000044	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----
Tin, dissolved	7440-31-5	E421-L/VA	0.000050	mg/L	<0.000050	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-05-5M	----	----	----	----
				Client sampling date / time	08-Oct-2024 13:05	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401744-001	----	----	----	----
					Result	----	----	----	----
Dissolved Metals									
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	<0.00030	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.00187	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	<0.00050	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	0.0012	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L	<0.00030	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-	Laboratory	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Laboratory	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2401744**	Page	: 1 of 15
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Dave Ott	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: ----	Telephone	: 1 867 445 7143
Project	: SNP-05 MONTHLY	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Issue Date	: 28-Oct-2024 11:46
C-O-C number	: ----		
Sampler	: ----		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Method Blank value outliers occur - please see following pages for full details.
- Matrix Spike outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Total Metals	QC-MRG3-1722943 001	----	Nickel, total	7440-02-0	E420-L	0.00029 mg/L B	0.0001 mg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Matrix Spike (MS) Recoveries								
Dissolved Metals	Anonymous	Anonymous	Silver, dissolved	7440-22-4	E421	61.6 % MS-Ag	70.0-130%	Recovery less than lower data quality objective

Result Qualifiers

Qualifier	Description
MS-Ag	*MS-Ag: Matrix Spike recovery for silver was marginally below DQO (40 to <60%) due to its instability in the sample matrix. Silver was not detected. Reported result (< LOR) is reliable*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-05-5M	E298	08-Oct-2024	22-Oct-2024	28 days	14 days	✓	23-Oct-2024	28 days	15 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-05-5M	E235.Br-U	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-05-5M	E235.Cl-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-05-5M	E377-L	08-Oct-2024	23-Oct-2024	3 days	15 days	× EHTR	24-Oct-2024	28 days	1 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE SNP-05-5M	E378-U	08-Oct-2024	21-Oct-2024	3 days	13 days	× EHTR	21-Oct-2024	3 days	13 days	× EHTR
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE SNP-05-5M	E235.F-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE SNP-05-5M	E235.NO3-T	08-Oct-2024	21-Oct-2024	3 days	13 days	× EHTR	21-Oct-2024	3 days	13 days	× EHTR

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-05-5M	E235.NO2-L	08-Oct-2024	21-Oct-2024	3 days	13 days	✗ EHTR	21-Oct-2024	3 days	13 days	✗ EHTR
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP-05-5M	E392	08-Oct-2024	----	----	----		22-Oct-2024	28 days	14 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE										
SNP-05-5M	E235.SO4-L	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	21-Oct-2024	28 days	13 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-05-5M	E375-U	08-Oct-2024	23-Oct-2024	3 days	15 days	✗ EHTR	23-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-05-5M	E376-L	08-Oct-2024	23-Oct-2024	28 days	15 days	✓	24-Oct-2024	28 days	16 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
SNP-05-5M	E318	08-Oct-2024	22-Oct-2024	28 days	14 days	✓	23-Oct-2024	28 days	15 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-05-5M	E372-S	08-Oct-2024	23-Oct-2024	28 days	15 days	✓	23-Oct-2024	28 days	15 days	✓
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved)										
SNP-05-5M	E421.Cr-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	22-Oct-2024	180 days	14 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SNP-05-5M	E509	08-Oct-2024	23-Oct-2024	28 days	15 days	✓	23-Oct-2024	28 days	15 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)										
HDPE - dissolved (lab preserved) SNP-05-5M	E421-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	22-Oct-2024	180 days	14 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) SNP-05-5M	E421	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	23-Oct-2024	180 days	15 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) SNP-05-5M	E355-L	08-Oct-2024	22-Oct-2024	28 days	14 days	✓	22-Oct-2024	28 days	14 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SNP-05-5M	E290	08-Oct-2024	21-Oct-2024	14 days	13 days	✓	22-Oct-2024	14 days	14 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP-05-5M	E100	08-Oct-2024	21-Oct-2024	28 days	13 days	✓	22-Oct-2024	28 days	14 days	✓
Physical Tests : pH by Meter										
HDPE SNP-05-5M	E108	08-Oct-2024	21-Oct-2024	0.25 hrs	320 hrs	✗ EHTR-FM	22-Oct-2024	0.25 hrs	331 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SNP-05-5M	E162	08-Oct-2024	----	----	----		24-Oct-2024	7 days	16 days	✗ EHTR
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-05-5M	E160-L	08-Oct-2024	----	----	----		24-Oct-2024	7 days	16 days	✗ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE SNP-05-5M	E121	08-Oct-2024	----	----	----		21-Oct-2024	3 days	13 days	✗ EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) SNP-05-5M	E420.Cr-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	23-Oct-2024	180 days	15 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) SNP-05-5M	E508	08-Oct-2024	26-Oct-2024	28 days	18 days	✓	26-Oct-2024	28 days	18 days	✓
Total Metals : Total Metals by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) SNP-05-5M	E420-L	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	24-Oct-2024	180 days	16 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) SNP-05-5M	E420	08-Oct-2024	22-Oct-2024	180 days	14 days	✓	24-Oct-2024	180 days	16 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1723583	1	9	11.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1722992	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1725842	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1722991	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
pH by Meter	E108	1721854	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1729863	1	15	6.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1722945	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1723582	1	6	16.6	5.0	✓
Total Mercury in Water by CVAAS	E508	1732876	1	20	5.0	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1722944	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1722943	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1723584	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1722021	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1723583	1	9	11.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1722992	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Dissolved Mercury in Water by CVAAS	E509	1725842	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1722991	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
pH by Meter	E108	1721854	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1729863	1	15	6.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1722945	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1723582	1	6	16.6	5.0	✓
Total Mercury in Water by CVAAS	E508	1732876	1	20	5.0	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1722944	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1722943	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1723584	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1729856	1	15	6.6	5.0	✓
Turbidity by Nephelometry	E121	1722021	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1723583	1	9	11.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1722992	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1725842	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	2	17	11.7	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1722991	2	9	22.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB) - Continued							
TDS by Gravimetry	E162	1729863	1	15	6.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1722945	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1723582	1	6	16.6	5.0	✓
Total Mercury in Water by CVAAS	E508	1732876	1	20	5.0	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1722944	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1722943	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1723584	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1729856	1	15	6.6	5.0	✓
Turbidity by Nephelometry	E121	1722021	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1723583	1	9	11.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1722992	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1725842	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L	1722991	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1722945	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1723582	1	6	16.6	5.0	✓
Total Mercury in Water by CVAAS	E508	1732876	1	20	5.0	5.0	✓
Total Metals by CRC ICPMS (Low Level)	E420-L	1722944	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1722943	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1723584	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry (Low Level)	E160-L ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide by IC (Ultra Trace Level)	E235.Br-U ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC (Low Level)	E235.F-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Trace Level)	E235.NO3-T ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC (Low Level)	E235.SO4-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Total Inorganic Phosphorus is determined colourimetrically after sample has undergone H2SO4 hydrolysis
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved Inorganic Phosphorus is determined colourimetrically after H_2SO_4 hydrolysis of a sample that has been lab or field filtered through a 0.45 micron membrane filter

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Total Metals by CRC ICPMS (Low Level)	E420-L ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L ALS Environmental - Vancouver	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Dissolved Metals in Water by CRC ICPMS (Additional Low Level Metals)	E421-L ALS Environmental - Vancouver	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Vancouver	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Phosphorus, dissolved organic (0.0014 mg/L) by calculation.	EC377-L.ORG ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved inorganic phosphorus is subtracted from total dissolved phosphorus to determine dissolved organic phosphorus.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Digestion for Total Inorganic Phosphorus in water	EP376 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples undergo H2SO4 hydrolysis.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Digestion for Dissolved Inorganic Phosphorus in water	EP377 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then undergo H2SO4 hydrolysis.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

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QUALITY CONTROL REPORT

Work Order	: **YL2401744**	Page	: 1 of 18
Client	: De Beers Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Dave Ott	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: ----	Telephone	: 1 867 445 7143
Project	: SNP-05 MONTHLY	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Date Analysis Commenced	: 21-Oct-2024
C-O-C number	: ----	Issue Date	: 28-Oct-2024 11:46
Sampler	: ----		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta
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Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
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Miles Gropen	Department Manager - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
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Wingyee Cheng	Analyst- General	Vancouver Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1721854)											
YL2401739-003	Anonymous	pH	----	E108	0.10	pH units	7.23	7.24	0.138%	4%	----
Physical Tests (QC Lot: 1721855)											
YL2401739-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	1910	1910	0.105%	10%	----
Physical Tests (QC Lot: 1721856)											
YL2401739-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	15.8	16.2	2.53%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	15.8	16.2	2.53%	20%	----
Physical Tests (QC Lot: 1722021)											
VA24C7509-001	Anonymous	Turbidity	----	E121	0.10	NTU	1.17	1.17	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1729863)											
VA24C8119-008	Anonymous	Solids, total dissolved [TDS]	----	E162	10	mg/L	133	126	4.89%	20%	----
Anions and Nutrients (QC Lot: 1721857)											
VA24C7998-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.44	0.44	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721859)											
VA24C7998-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	7.84	7.88	0.510%	20%	----
Anions and Nutrients (QC Lot: 1721860)											
VA24C7998-001	Anonymous	Fluoride	16984-48-8	E235.F-L	0.010	mg/L	0.484	0.486	0.507%	20%	----
Anions and Nutrients (QC Lot: 1721861)											
YL2401739-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0100	mg/L	0.0204	0.0215	0.0010	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721862)											
YL2401739-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	0.0300	mg/L	3.89	3.88	0.210%	20%	----
Anions and Nutrients (QC Lot: 1721863)											
YL2401739-002	Anonymous	Bromide	24959-67-9	E235.Br-U	0.0500	mg/L	3.90	3.94	0.806%	20%	----
Anions and Nutrients (QC Lot: 1721864)											
VA24C7998-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1722784)											
VA24C7986-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	19.1	19.0	0.428%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 1723582)											
VA24C7423-004	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	1.00	mg/L	42.1	36.0	15.7%	20%	----
Anions and Nutrients (QC Lot: 1723583)											
VA24C7423-004	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.500	mg/L	15.7	15.9	1.68%	20%	----
Anions and Nutrients (QC Lot: 1725550)											
EO2409498-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0037	0.0030	0.0007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1725554)											
EO2409513-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.586	0.588	0.372%	20%	----
Anions and Nutrients (QC Lot: 1725559)											
YL2401739-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0010	mg/L	0.0078	0.0078	0.00006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1725560)											
YL2401739-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0010	mg/L	0.0010	<0.0010	0.00001	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1723584)											
VA24C7423-004	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	46.7	50.0	6.99%	20%	----
Total Metals (QC Lot: 1722943)											
VA24C8151-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0683	0.0691	1.13%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00018	0.00018	0.000004	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0174	0.0175	0.501%	20%	----
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	0.029	0.030	0.00001	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000132	0.0000138	0.0000006	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	12.4	12.7	1.99%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000012	0.000010	0.000002	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	3.46	3.48	0.706%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0265	0.0267	0.691%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000424	0.000418	0.000007	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	2.95	2.92	0.862%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00181	0.00181	0.000004	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000107	0.000085	0.000022	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	5.48	5.40	1.34%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0677	0.0660	2.59%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	4.05	4.08	0.04	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 1722943) - continued											
VA24C8151-001	Anonymous	Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00237	0.00232	0.00005	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000015	0.000014	0.000002	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00138	0.00129	0.00009	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1722944)											
VA24C8151-001	Anonymous	Arsenic, total	7440-38-2	E420-L	0.000030	mg/L	0.000590	0.000601	1.77%	20%	----
		Cobalt, total	7440-48-4	E420-L	0.000050	mg/L	0.000216	0.000199	0.000017	Diff <2x LOR	----
		Copper, total	7440-50-8	E420-L	0.00015	mg/L	0.00261	0.00270	3.27%	20%	----
		Iron, total	7439-89-6	E420-L	0.0050	mg/L	0.117	0.118	0.388%	20%	----
		Lead, total	7439-92-1	E420-L	0.000030	mg/L	0.000060	0.000067	0.000007	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420-L	0.00010	mg/L	0.00108	0.00111	3.55%	20%	----
		Sodium, total	7440-23-5	E420-L	0.030	mg/L	7.24	7.27	0.400%	20%	----
		Tin, total	7440-31-5	E420-L	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420-L	0.0015	mg/L	0.0070	0.0070	0.000008	Diff <2x LOR	----
Total Metals (QC Lot: 1722945)											
VA24C8151-001	Anonymous	Chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00028	0.00034	0.00006	Diff <2x LOR	----
Total Metals (QC Lot: 1732876)											
VA24C7462-006	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0000106	0.0000110	0.0000004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1722990)											
VA24C8156-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0151	0.0152	0.149%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00032	0.00032	0.000002	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0330	0.0316	4.22%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000202	0.0000160	0.0000042	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	58.1	57.3	1.33%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	14.8	14.4	3.21%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	1.06	1.04	2.19%	20%	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1722990) - continued											
VA24C8156-001	Anonymous	Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00202	0.00202	0.0959%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	6.92	6.71	3.07%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00267	0.00246	8.29%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000195	0.000200	0.000005	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.100	mg/L	2.91	2.84	2.58%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	14.8	14.4	2.44%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.269	0.270	0.500%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	30.4	30.1	0.982%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00129	0.00096	0.00032	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000291	0.000284	2.28%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00072	0.00068	0.00004	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0015	0.0014	0.0001	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1722991)											
VA24C8156-001	Anonymous	Arsenic, dissolved	7440-38-2	E421-L	0.000030	mg/L	0.000991	0.000891	10.6%	20%	----
		Boron, dissolved	7440-42-8	E421-L	0.0050	mg/L	0.0234	0.0232	0.0002	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421-L	0.000050	mg/L	0.00158	0.00158	0.482%	20%	----
		Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	0.00482	0.00477	1.20%	20%	----
		Iron, dissolved	7439-89-6	E421-L	0.0050	mg/L	0.0633	0.0600	5.27%	20%	----
		Lead, dissolved	7439-92-1	E421-L	0.000030	mg/L	<0.000030	<0.000030	0	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421-L	0.00010	mg/L	0.00302	0.00303	0.533%	20%	----
		Sodium, dissolved	7440-23-5	E421-L	0.010	mg/L	14.8	14.4	2.44%	20%	----
		Tin, dissolved	7440-31-5	E421-L	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1722992)											
VA24C8156-001	Anonymous	Chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00016	0.00012	0.00004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1725842)											
YL2401742-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1721855)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1721856)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1722021)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1729856)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 1729863)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1721857)						
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1721859)						
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1721860)						
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1721861)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1721862)						
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	<0.0030	----
Anions and Nutrients (QCLot: 1721863)						
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1721864)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1722784)						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1723582)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1723583)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1725550)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725554)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725559)						
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725560)						
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 1723584)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 1722943)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1722943) - continued						
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 1722944)						
Arsenic, total	7440-38-2	E420-L	0.00003	mg/L	<0.000030	----
Cobalt, total	7440-48-4	E420-L	0.00005	mg/L	<0.000050	----
Copper, total	7440-50-8	E420-L	0.00015	mg/L	<0.00015	----
Iron, total	7439-89-6	E420-L	0.005	mg/L	<0.0050	----
Lead, total	7439-92-1	E420-L	0.00003	mg/L	<0.000030	----
Nickel, total	7440-02-0	E420-L	0.0001	mg/L	# 0.00029	B
Sodium, total	7440-23-5	E420-L	0.03	mg/L	<0.030	----
Tin, total	7440-31-5	E420-L	0.00005	mg/L	<0.000050	----
Zinc, total	7440-66-6	E420-L	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1722945)						
Chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	MBRR
Total Metals (QCLot: 1732876)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1722990)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1722990) - continued						
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 1722991)						
Arsenic, dissolved	7440-38-2	E421-L	0.00003	mg/L	<0.000030	----
Boron, dissolved	7440-42-8	E421-L	0.005	mg/L	<0.0050	----
Cobalt, dissolved	7440-48-4	E421-L	0.00005	mg/L	<0.000050	----
Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	<0.00015	----
Iron, dissolved	7439-89-6	E421-L	0.005	mg/L	<0.0050	----
Lead, dissolved	7439-92-1	E421-L	0.00003	mg/L	<0.000030	----
Nickel, dissolved	7440-02-0	E421-L	0.0001	mg/L	<0.00010	----
Sodium, dissolved	7440-23-5	E421-L	0.01	mg/L	<0.010	MBRR
Tin, dissolved	7440-31-5	E421-L	0.00005	mg/L	<0.000050	----
Dissolved Metals (QCLot: 1722992)						
Chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 1725842)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----

Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*
MBRR	*Initial MB for this submission had positive results for flagged analyte (data not shown). Low level samples were repeated with new QC (2nd MB results shown). High level results (>5x initial MB level) and non-detect results were reported and are defensible*

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1721854)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1721855)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 1721856)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	116	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1722021)									
Turbidity	----	E121	0.1	NTU	200 NTU	97.0	85.0	115	----
Physical Tests (QCLot: 1729856)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	95.5	85.0	115	----
Physical Tests (QCLot: 1729863)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1721857)									
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 1721859)									
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1721860)									
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	1 mg/L	97.4	90.0	110	----
Anions and Nutrients (QCLot: 1721861)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	97.9	90.0	110	----
Anions and Nutrients (QCLot: 1721862)									
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	2.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 1721863)									
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	0.5 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1721864)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	90.9	80.0	120	----
Anions and Nutrients (QCLot: 1722784)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1723582)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	100	75.0	125	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1723583)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 1725550)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	107	80.0	120	----
Anions and Nutrients (QCLot: 1725554)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	106	80.0	120	----
Anions and Nutrients (QCLot: 1725559)									
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	0.05 mg/L	100	80.0	120	----
Anions and Nutrients (QCLot: 1725560)									
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	0.05 mg/L	113	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1723584)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	93.1	80.0	120	----
Total Metals (QCLot: 1722943)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	102	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	95.1	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	97.8	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	91.8	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	99.2	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	96.4	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	97.7	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	95.4	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	98.9	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	100	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	107	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	99.4	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	106	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	93.0	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	97.7	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	96.6	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	105	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	97.9	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1722943) - continued									
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	93.0	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	100	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	95.9	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	98.2	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Total Metals (QCLot: 1722944)									
Arsenic, total	7440-38-2	E420-L	0.00003	mg/L	1 mg/L	103	80.0	120	----
Cobalt, total	7440-48-4	E420-L	0.00005	mg/L	0.25 mg/L	99.5	80.0	120	----
Copper, total	7440-50-8	E420-L	0.00015	mg/L	0.25 mg/L	101	80.0	120	----
Iron, total	7439-89-6	E420-L	0.005	mg/L	1 mg/L	101	80.0	120	----
Lead, total	7439-92-1	E420-L	0.00003	mg/L	0.5 mg/L	96.5	80.0	120	----
Nickel, total	7440-02-0	E420-L	0.0001	mg/L	0.5 mg/L	99.2	80.0	120	----
Sodium, total	7440-23-5	E420-L	0.03	mg/L	50 mg/L	99.9	80.0	120	----
Tin, total	7440-31-5	E420-L	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, total	7440-66-6	E420-L	0.0015	mg/L	0.5 mg/L	101	80.0	120	----
Total Metals (QCLot: 1722945)									
Chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Total Metals (QCLot: 1732876)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	93.6	80.0	120	----
Dissolved Metals (QCLot: 1722990)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	98.9	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	99.4	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	103	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	98.8	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.3	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	101	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	105	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	99.0	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	96.8	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	100.0	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1722990) - continued									
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	89.6	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	99.7	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	90.7	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	99.4	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	102	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	97.1	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	104	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	93.5	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	97.6	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	105	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	97.7	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	100	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	97.8	80.0	120	----
Dissolved Metals (QCLot: 1722991)									
Arsenic, dissolved	7440-38-2	E421-L	0.00003	mg/L	1 mg/L	102	80.0	120	----
Boron, dissolved	7440-42-8	E421-L	0.005	mg/L	1 mg/L	108	80.0	120	----
Cobalt, dissolved	7440-48-4	E421-L	0.00005	mg/L	0.25 mg/L	96.6	80.0	120	----
Copper, dissolved	7440-50-8	E421-L	0.00015	mg/L	0.25 mg/L	96.2	80.0	120	----
Iron, dissolved	7439-89-6	E421-L	0.005	mg/L	1 mg/L	92.9	80.0	120	----
Lead, dissolved	7439-92-1	E421-L	0.00003	mg/L	0.5 mg/L	102	80.0	120	----
Nickel, dissolved	7440-02-0	E421-L	0.0001	mg/L	0.5 mg/L	96.8	80.0	120	----
Sodium, dissolved	7440-23-5	E421-L	0.01	mg/L	50 mg/L	103	80.0	120	----
Tin, dissolved	7440-31-5	E421-L	0.00005	mg/L	0.5 mg/L	99.3	80.0	120	----
Dissolved Metals (QCLot: 1722992)									
Chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	96.3	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	90.0	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1721857)										
VA24C7998-002	Anonymous	Chloride	16887-00-6	E235.Cl-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1721859)										
VA24C7998-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1721860)										
VA24C7998-002	Anonymous	Fluoride	16984-48-8	E235.F-L	0.984 mg/L	1 mg/L	98.4	75.0	125	----
Anions and Nutrients (QCLot: 1721861)										
YL2401739-003	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	4.72 mg/L	5 mg/L	94.5	75.0	125	----
Anions and Nutrients (QCLot: 1721862)										
YL2401739-003	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	24.5 mg/L	25 mg/L	97.9	75.0	125	----
Anions and Nutrients (QCLot: 1721863)										
YL2401739-003	Anonymous	Bromide	24959-67-9	E235.Br-U	5.20 mg/L	5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1721864)										
VA24C7998-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0283 mg/L	0.03 mg/L	94.3	70.0	130	----
Anions and Nutrients (QCLot: 1722784)										
VA24C8129-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.3 mg/L	10 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1723582)										
VA24C8109-008	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.67 mg/L	2.5 mg/L	107	70.0	130	----
Anions and Nutrients (QCLot: 1723583)										
VA24C7457-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1725550)										
EO2409513-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1725554)										
EO2409522-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0784 mg/L	0.067 mg/L	117	70.0	130	----
Anions and Nutrients (QCLot: 1725559)										
YL2401739-002	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0541 mg/L	0.05 mg/L	108	70.0	130	----
Anions and Nutrients (QCLot: 1725560)										
YL2401739-002	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0568 mg/L	0.05 mg/L	114	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1723584)										
VA24C8109-008	Anonymous	Carbon, total organic [TOC]	----	E355-L	4.79 mg/L	5 mg/L	95.8	70.0	130	----
Total Metals (QCLot: 1722943)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1722943) - continued										
VA24C8156-001	Anonymous	Aluminum, total	7429-90-5	E420	ND mg/L	----	ND	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0190 mg/L	0.02 mg/L	95.2	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0381 mg/L	0.04 mg/L	95.2	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00929 mg/L	0.01 mg/L	92.9	70.0	130	----
		Boron, total	7440-42-8	E420	0.092 mg/L	0.1 mg/L	91.9	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00383 mg/L	0.004 mg/L	95.7	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00957 mg/L	0.01 mg/L	95.7	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0926 mg/L	0.1 mg/L	92.6	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0188 mg/L	0.02 mg/L	93.8	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		Silicon, total	7440-21-3	E420	9.82 mg/L	10 mg/L	98.2	70.0	130	----
		Silver, total	7440-22-4	E420	0.00384 mg/L	0.004 mg/L	96.1	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	----	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00365 mg/L	0.004 mg/L	91.3	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		Titanium, total	7440-32-6	E420	ND mg/L	----	ND	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00386 mg/L	0.004 mg/L	96.4	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0968 mg/L	0.1 mg/L	96.8	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
Total Metals (QCLot: 1722944)										
VA24C8156-001	Anonymous	Arsenic, total	7440-38-2	E420-L	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		Cobalt, total	7440-48-4	E420-L	0.0183 mg/L	0.02 mg/L	91.4	70.0	130	----
		Copper, total	7440-50-8	E420-L	0.0185 mg/L	0.02 mg/L	92.4	70.0	130	----
		Iron, total	7439-89-6	E420-L	ND mg/L	----	ND	70.0	130	----
		Lead, total	7439-92-1	E420-L	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	----
		Nickel, total	7440-02-0	E420-L	0.0368 mg/L	0.04 mg/L	92.0	70.0	130	----
		Sodium, total	7440-23-5	E420-L	ND mg/L	----	ND	70.0	130	----
		Tin, total	7440-31-5	E420-L	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Zinc, total	7440-66-6	E420-L	0.363 mg/L	0.4 mg/L	90.7	70.0	130	----
Total Metals (QCLot: 1722945)										
VA24C8156-001	Anonymous	Chromium, total	7440-47-3	E420.Cr-L	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----
Total Metals (QCLot: 1732876)										
VA24C7462-007	Anonymous	Mercury, total	7439-97-6	E508	ND mg/L	----	ND	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1722990)										
VA24C8158-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.197 mg/L	0.2 mg/L	98.5	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0193 mg/L	0.02 mg/L	96.3	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0191 mg/L	0.02 mg/L	95.3	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0383 mg/L	0.04 mg/L	95.9	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00891 mg/L	0.01 mg/L	89.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00373 mg/L	0.004 mg/L	93.2	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00988 mg/L	0.01 mg/L	98.8	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0943 mg/L	0.1 mg/L	94.3	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0197 mg/L	0.02 mg/L	98.5	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0183 mg/L	0.02 mg/L	91.6	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.24 mg/L	10 mg/L	92.4	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00246 mg/L	0.004 mg/L	61.6	70.0	130	MS-Ag
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	21.7 mg/L	20 mg/L	108	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0391 mg/L	0.04 mg/L	97.7	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00367 mg/L	0.004 mg/L	91.8	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0391 mg/L	0.04 mg/L	97.7	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0183 mg/L	0.02 mg/L	91.7	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00374 mg/L	0.004 mg/L	93.6	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.395 mg/L	0.4 mg/L	98.8	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0394 mg/L	0.04 mg/L	98.4	70.0	130	----
Dissolved Metals (QCLot: 1722991)										
VA24C8158-001	Anonymous	Arsenic, dissolved	7440-38-2	E421-L	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Boron, dissolved	7440-42-8	E421-L	0.0877 mg/L	0.1 mg/L	87.7	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421-L	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Copper, dissolved	7440-50-8	E421-L	0.0177 mg/L	0.02 mg/L	88.7	70.0	130	----
		Iron, dissolved	7439-89-6	E421-L	1.87 mg/L	2 mg/L	93.4	70.0	130	----
		Lead, dissolved	7439-92-1	E421-L	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Nickel, dissolved	7440-02-0	E421-L	0.0384 mg/L	0.04 mg/L	96.1	70.0	130	----
		Sodium, dissolved	7440-23-5	E421-L	ND mg/L	----	ND	70.0	130	----
		Tin, dissolved	7440-31-5	E421-L	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
Dissolved Metals (QCLot: 1722992)										
VA24C8158-001	Anonymous	Chromium, dissolved	7440-47-3	E421.Cr-L	0.0380 mg/L	0.04 mg/L	95.1	70.0	130	----
Dissolved Metals (QCLot: 1725842)										
YL2401742-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000887 mg/L	0 mg/L	88.7	70.0	130	----

Qualifiers

Qualifier	Description
MS-Ag	MS-Ag: Matrix Spike recovery for silver was marginally below DQO (40 to <60%) due to its instability in the sample matrix. Silver was not detected. Reported result (< LOR) is reliable

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 20241009/ 04

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	
Company:	DeBeers Gahcho Kué	Select Report Format:	
Contact:	Dave Ott/Michelle Burger	Quality Control (QC) Report with Report	
Phone:	867-679-5812/5814		
	Company address below will appear on the final report	Select Distribution:	
Street:	5120 49th Street Suite 300	Email 1 or Fax:	Environment.GahchoKue@debeersgroup.com
City/Province:	Yellowknife, NT	Email 2	Dave.Ott@debeersgroup.com
Postal Code:	X1A 3S8	Email 3	Michelle.Burger@debeersgroup.com

Invoice To	Same as Report To	Yes	No
	Copy of Invoice with Report	Yes	No
Company:	DeBeers Group		
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8		

Invoice Distribution	
Select Invoice Distribution:	
Email 1 or Fax	ap.invoices@debeersgroup.com
Email 2	Mason.Elwood@debeersgroup.com

Project Information	
ALS Account # / Quote #:	
Job #:	SNP-05 Monthly
PO / AFE:	4100968747
LSD:	

Oil and Gas Required Fields (client use)	
Approver ID:	Cost Center:
GL Account:	Routing Code:
Activity Code:	
Location:	

ALS Lab Work Order # (lab use only)

ALS Contact: Oliver Gregg Sampler: J. Vornbrock

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days)	4 day [P4-20%]	EMERGENCY	1 Business day [E - 100%]
	3 day [P3-25%]		Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]
	2 day [P2-50%]		

Date and time Required for all E&P TA: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical Parameters	Major Ions	Total Nutrients	Dissolved Nutrients	Total Metals	Dissolved Metals	Total Mercury	Dissolved Mercury	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
								P		P		P			
	SNP-05-5m	8-Oct-24	13:05	Water	8	R	R	R	R	R	R	R	R		

Environmental Division
Yellowknife
Work Order Reference
YL2401744

Telephone : +1 867 873 5593

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System?	Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.
Are samples for human drinking water use?	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No	☐
Ice Packs ☐ Ice Cubes ☐		Custody seal intact	Yes ☐	No	☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
4.9							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: J. Vornbrock	Date: 9-Oct-24	Time:	Received by:	Date: 10/24 OCT	Time: 9:40	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-03209 v09 Form/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241009/ 04

Date: October 9, 2024

	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date
	8-Oct-24				
	Sample Name	Sample Name	Sample Name	Sample Name	Sample Name
	SNP-05-5m				
Physical Parameters Rush (Y/N)	N				
Conductivity	X				
pH	X				
Total Suspended Solids (Ultra Low)	X				
Turbidity	X				
Major Ions Rush (Y/N)	N				
Alkalinity, Bicarbonate (as CaCO3)	X				
Alkalinity, Carbonate (as CaCO3)	X				
Alkalinity, Hydroxide (as CaCO3)	X				
Alkalinity, Total (as CaCO3)	X				
Hardness (as CaCO3)	X				
Calcium	X				
Magnesium	X				
Potassium	X				
Sodium	X				
Chloride (Cl)	X				
Fluoride (F)	X				
Total Dissolved Solids (SNP-07)	X				
Sulphate (SO4)	X				
Reactive Silicate	X				
Nutrients Rush (Y/N)	N				
Lab to Filter Dissolved Nutrients	X				
Ammonia, Total (as N)	X				
Nitrate and Nitrite (as N)	X				
Nitrate (as N)	X				
Nitrite (as N)	X				
Total Kjeldahl Nitrogen	X				
Orthophosphate-Dissolved (as P)	X				
Phosphorus (P)-Total Dissolved	X				
Phosphorus (P)-Total	X				
Phosphorus (P)-Dissolved Organic	X				
Phosphorus (P)-Total Inorganic	X				
Phosphorus (P)-Dissolved Inorganic	X				
Total Organic Carbon	X				
Aggregate Organics Rush (Y/N)					
Biochemical Oxygen Demand (SNP-07)					
Oil and Grease (SNP-07)					
Metals Rush (Y/N)	N				
Lab to Filter Dissolved Metals	X				
Total Metals (preserved with HNO3)	X				
Dissolved Metals (not preserved)	X				

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Rubidium, Selenium, Silver, Strontium, Thallium, Titanium, Uranium, Vanadium, Zinc.

Speciated Metals Rush (Y/N)					
Hydrocarbons and VOCs Rush (Y/N)					
BTEX, F1-F4					
Total Petroleum Hydrocarbons					
Bacteria Rush (Y/N)					
Total Coliforms, Fecal Coliforms, and E. coli					
Radionuclides (SNP-08/09/10) Rush (Y/N)					
Uranium and Thorium					
Radium-226 (if U & Th leach to grndwtr)					

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CERTIFICATE OF ANALYSIS

Work Order	: **YL2401747**		
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Edmonton
Contact	: Dave Ott	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife Northwest Territories Canada X1A 1P8	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: ----	Telephone	: 1 867 445 7143
Project	: SNP-10 Weekly	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Date Analysis Commenced	: 22-Oct-2024
C-O-C number	: ----	Issue Date	: 28-Oct-2024 11:45
Sampler	: ----		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Manpreet Cheema	Lab Assistant	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units
µS/cm	microsiemens per centimetre
-	no units

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
SFP	Sample was filtered and preserved at the laboratory.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-10	----	----	----	----
				Client sampling date / time	07-Oct-2024 16:05	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401747-001	----	----	----	----
					Result	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	154	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	154	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	2510	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	922	----	----	----	----
pH	----	E108/VA	0.10	pH units	8.02	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	1770	----	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	1.0	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	1.06	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	8.08	----	----	----	----
Bromide	24959-67-9	E235.Br-U/VA	0.0500	mg/L	5.30	----	----	----	----
Chloride	16887-00-6	E235.Cl-L/VA	0.50	mg/L	482	----	----	----	----
Fluoride	16984-48-8	E235.F-L/VA	0.020	mg/L	0.686	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	9.46	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-T/VA	0.0030	mg/L	25.3	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/VA	0.0032	mg/L	26.4	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0050	mg/L	1.06	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-10	----	----	----	----
				Client sampling date / time	07-Oct-2024 16:05	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401747-001	----	----	----	----
					Result	----	----	----	----
Anions and Nutrients									
Phosphorus, dissolved inorganic	----	E377-L/EO	0.0010	mg/L	0.0022 SFP	----	----	----	----
Phosphorus, dissolved organic	----	EC377-L.ORG/EO	0.0020	mg/L	0.0039	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0098	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0061	----	----	----	----
Phosphorus, total inorganic	----	E376-L/EO	0.0010	mg/L	0.0059	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	11.2	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4-L/VA	0.300	mg/L	341	----	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	2.04	----	----	----	----
Dissolved Metals									
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	216	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	93.0	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	22.3	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	117	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Laboratory	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2401747**	Page	: 1 of 12
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Dave Ott	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: ----	Telephone	: 1 867 445 7143
Project	: SNP-10 Weekly	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Issue Date	: 28-Oct-2024 11:45
C-O-C number	: ----		
Sampler	: ----		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-10	E298	07-Oct-2024	22-Oct-2024	28 days	15 days	✓	23-Oct-2024	28 days	15 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-10	E235.Br-U	07-Oct-2024	21-Oct-2024	28 days	14 days	✓	21-Oct-2024	28 days	14 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-10	E235.Cl-L	07-Oct-2024	21-Oct-2024	28 days	14 days	✓	21-Oct-2024	28 days	14 days	✓
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) SNP-10	E377-L	07-Oct-2024	23-Oct-2024	28 days	16 days	✓	24-Oct-2024	28 days	17 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE SNP-10	E378-U	07-Oct-2024	21-Oct-2024	3 days	14 days	× EHTR	21-Oct-2024	3 days	14 days	× EHTR
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE SNP-10	E235.F-L	07-Oct-2024	21-Oct-2024	28 days	14 days	✓	21-Oct-2024	28 days	14 days	✓
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE SNP-10	E235.NO3-T	07-Oct-2024	21-Oct-2024	3 days	14 days	× EHTR	21-Oct-2024	3 days	14 days	× EHTR

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-10	E235.NO2-L	07-Oct-2024	21-Oct-2024	3 days	14 days	✗ EHTR	21-Oct-2024	3 days	14 days	✗ EHTR
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP-10	E392	07-Oct-2024	----	----	----		22-Oct-2024	28 days	15 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE										
SNP-10	E235.SO4-L	07-Oct-2024	21-Oct-2024	28 days	14 days	✓	21-Oct-2024	28 days	14 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid)										
SNP-10	E375-U	07-Oct-2024	23-Oct-2024	28 days	16 days	✓	23-Oct-2024	28 days	16 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-10	E376-L	07-Oct-2024	23-Oct-2024	28 days	16 days	✓	24-Oct-2024	28 days	17 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
SNP-10	E318	07-Oct-2024	22-Oct-2024	28 days	15 days	✓	23-Oct-2024	28 days	16 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-10	E372-S	07-Oct-2024	23-Oct-2024	28 days	16 days	✓	23-Oct-2024	28 days	16 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SNP-10	E421	07-Oct-2024	22-Oct-2024	180 days	15 days	✓	23-Oct-2024	180 days	16 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP-10	E355-L	07-Oct-2024	22-Oct-2024	28 days	15 days	✓	22-Oct-2024	28 days	15 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis: Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE SNP-10	E290	07-Oct-2024	21-Oct-2024	14 days	14 days	✓	22-Oct-2024	14 days	15 days	✗ EHT
Physical Tests : Conductivity in Water										
HDPE SNP-10	E100	07-Oct-2024	21-Oct-2024	28 days	14 days	✓	22-Oct-2024	28 days	15 days	✓
Physical Tests : pH by Meter										
HDPE SNP-10	E108	07-Oct-2024	21-Oct-2024	0.25 hrs	341 hrs	✗ EHTR-FM	22-Oct-2024	0.25 hrs	352 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SNP-10	E162	07-Oct-2024	----	----	----		24-Oct-2024	7 days	17 days	✗ EHTR
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-10	E160-L	07-Oct-2024	----	----	----		24-Oct-2024	7 days	17 days	✗ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE SNP-10	E121	07-Oct-2024	----	----	----		21-Oct-2024	3 days	14 days	✗ EHTR

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1723583	1	9	11.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	1	17	5.8	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
pH by Meter	E108	1721854	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1729863	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1723582	1	6	16.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1723584	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1722022	1	11	9.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1723583	1	9	11.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	1	17	5.8	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
pH by Meter	E108	1721854	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
TDS by Gravimetry	E162	1729863	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1723582	1	6	16.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1723584	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1729856	1	15	6.6	5.0	✓
Turbidity by Nephelometry	E121	1722022	1	11	9.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1721856	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1723583	1	9	11.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Conductivity in Water	E100	1721855	1	20	5.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	2	17	11.7	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1729863	1	15	6.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1723582	1	6	16.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1723584	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1729856	1	15	6.6	5.0	✓
Turbidity by Nephelometry	E121	1722022	1	11	9.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1723583	1	9	11.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1721863	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1721857	1	20	5.0	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1725560	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1722990	1	17	5.8	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1721864	1	20	5.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1721860	1	20	5.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1721862	1	16	6.2	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Nitrite in Water by IC (Low Level)	E235.NO2-L	1721861	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1722784	1	20	5.0	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1721859	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1725554	1	20	5.0	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1725559	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1723582	1	6	16.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1723584	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1725550	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry (Low Level)	E160-L ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide by IC (Ultra Trace Level)	E235.Br-U ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC (Low Level)	E235.F-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Trace Level)	E235.NO3-T ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC (Low Level)	E235.SO4-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Total Inorganic Phosphorus is determined colourimetrically after sample has undergone H2SO4 hydrolysis
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved Inorganic Phosphorus is determined colourimetrically after H_2SO_4 hydrolysis of a sample that has been lab or field filtered through a 0.45 micron membrane filter

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Vancouver	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Phosphorus, dissolved organic (0.0014 mg/L) by calculation.	EC377-L.ORG ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved inorganic phosphorus is subtracted from total dissolved phosphorus to determine dissolved organic phosphorus.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
	ALS Environmental - Edmonton			
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Digestion for Total Inorganic Phosphorus in water	EP376 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples undergo H2SO4 hydrolysis.
Digestion for Dissolved Inorganic Phosphorus in water	EP377 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then undergo H2SO4 hydrolysis.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

ALS Canada Ltd.

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QUALITY CONTROL REPORT

Work Order	: **YL2401747**	Page	: 1 of 10
Client	: De Beers Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Dave Ott	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: ----	Telephone	: 1 867 445 7143
Project	: SNP-10 Weekly	Date Samples Received	: 16-Oct-2024 09:40
PO	: 4100968747	Date Analysis Commenced	: 21-Oct-2024
C-O-C number	: ----	Issue Date	: 28-Oct-2024 11:45
Sampler	: ----		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Manpreet Cheema	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Edmonton Inorganics, Edmonton, Alberta

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1721854)											
YL2401739-003	Anonymous	pH	----	E108	0.10	pH units	7.23	7.24	0.138%	4%	----
Physical Tests (QC Lot: 1721855)											
YL2401739-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	1910	1910	0.105%	10%	----
Physical Tests (QC Lot: 1721856)											
YL2401739-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	15.8	16.2	2.53%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	15.8	16.2	2.53%	20%	----
Physical Tests (QC Lot: 1722022)											
YL2401745-004	Anonymous	Turbidity	----	E121	0.10	NTU	0.44	0.45	0.006	Diff <2x LOR	----
Physical Tests (QC Lot: 1729863)											
VA24C8119-008	Anonymous	Solids, total dissolved [TDS]	----	E162	10	mg/L	133	126	4.89%	20%	----
Anions and Nutrients (QC Lot: 1721857)											
VA24C7998-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.44	0.44	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721859)											
VA24C7998-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	7.84	7.88	0.510%	20%	----
Anions and Nutrients (QC Lot: 1721860)											
VA24C7998-001	Anonymous	Fluoride	16984-48-8	E235.F-L	0.010	mg/L	0.484	0.486	0.507%	20%	----
Anions and Nutrients (QC Lot: 1721861)											
YL2401739-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0100	mg/L	0.0204	0.0215	0.0010	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1721862)											
YL2401739-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	0.0300	mg/L	3.89	3.88	0.210%	20%	----
Anions and Nutrients (QC Lot: 1721863)											
YL2401739-002	Anonymous	Bromide	24959-67-9	E235.Br-U	0.0500	mg/L	3.90	3.94	0.806%	20%	----
Anions and Nutrients (QC Lot: 1721864)											
VA24C7998-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1722784)											
VA24C7986-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	19.1	19.0	0.428%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 1723582)											
VA24C7423-004	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	1.00	mg/L	42.1	36.0	15.7%	20%	----
Anions and Nutrients (QC Lot: 1723583)											
VA24C7423-004	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.500	mg/L	15.7	15.9	1.68%	20%	----
Anions and Nutrients (QC Lot: 1725550)											
EO2409498-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0037	0.0030	0.0007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1725554)											
EO2409513-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.586	0.588	0.372%	20%	----
Anions and Nutrients (QC Lot: 1725559)											
YL2401739-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0010	mg/L	0.0078	0.0078	0.00006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1725560)											
YL2401739-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0010	mg/L	0.0010	<0.0010	0.00001	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1723584)											
VA24C7423-004	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	46.7	50.0	6.99%	20%	----
Dissolved Metals (QC Lot: 1722990)											
VA24C8156-001	Anonymous	Calcium, dissolved	7440-70-2	E421	0.050	mg/L	58.1	57.3	1.33%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	14.8	14.4	3.21%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	6.92	6.71	3.07%	20%	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	14.8	14.4	2.44%	20%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1721855)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1721856)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1722022)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1729856)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 1729863)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1721857)						
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1721859)						
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1721860)						
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1721861)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1721862)						
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	<0.0030	----
Anions and Nutrients (QCLot: 1721863)						
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1721864)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1722784)						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1723582)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1723583)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1723583) - continued						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1725550)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725554)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725559)						
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1725560)						
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 1723584)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Dissolved Metals (QCLot: 1722990)						
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1721854)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1721855)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 1721856)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	116	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1722022)									
Turbidity	----	E121	0.1	NTU	200 NTU	97.5	85.0	115	----
Physical Tests (QCLot: 1729856)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	95.5	85.0	115	----
Physical Tests (QCLot: 1729863)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1721857)									
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 1721859)									
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1721860)									
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	1 mg/L	97.4	90.0	110	----
Anions and Nutrients (QCLot: 1721861)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	97.9	90.0	110	----
Anions and Nutrients (QCLot: 1721862)									
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	2.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 1721863)									
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	0.5 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1721864)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	90.9	80.0	120	----
Anions and Nutrients (QCLot: 1722784)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1723582)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1723583)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1723583) - continued									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 1725550)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	107	80.0	120	----
Anions and Nutrients (QCLot: 1725554)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	106	80.0	120	----
Anions and Nutrients (QCLot: 1725559)									
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	0.05 mg/L	100	80.0	120	----
Anions and Nutrients (QCLot: 1725560)									
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	0.05 mg/L	113	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1723584)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	93.1	80.0	120	----
Dissolved Metals (QCLot: 1722990)									
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.3	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	99.0	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1721857)										
VA24C7998-002	Anonymous	Chloride	16887-00-6	E235.Cl-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1721859)										
VA24C7998-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1721860)										
VA24C7998-002	Anonymous	Fluoride	16984-48-8	E235.F-L	0.984 mg/L	1 mg/L	98.4	75.0	125	----
Anions and Nutrients (QCLot: 1721861)										
YL2401739-003	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	4.72 mg/L	5 mg/L	94.5	75.0	125	----
Anions and Nutrients (QCLot: 1721862)										
YL2401739-003	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	24.5 mg/L	25 mg/L	97.9	75.0	125	----
Anions and Nutrients (QCLot: 1721863)										
YL2401739-003	Anonymous	Bromide	24959-67-9	E235.Br-U	5.20 mg/L	5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1721864)										
VA24C7998-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0283 mg/L	0.03 mg/L	94.3	70.0	130	----
Anions and Nutrients (QCLot: 1722784)										
VA24C8129-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.3 mg/L	10 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1723582)										
VA24C8109-008	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.67 mg/L	2.5 mg/L	107	70.0	130	----
Anions and Nutrients (QCLot: 1723583)										
VA24C7457-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1725550)										
EO2409513-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1725554)										
EO2409522-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0784 mg/L	0.067 mg/L	117	70.0	130	----
Anions and Nutrients (QCLot: 1725559)										
YL2401739-002	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0541 mg/L	0.05 mg/L	108	70.0	130	----
Anions and Nutrients (QCLot: 1725560)										
YL2401739-002	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0568 mg/L	0.05 mg/L	114	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1723584)										
VA24C8109-008	Anonymous	Carbon, total organic [TOC]	----	E355-L	4.79 mg/L	5 mg/L	95.8	70.0	130	----
Dissolved Metals (QCLot: 1722990)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1722990) - continued										
VA24C8158-001	Anonymous	Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 20241009/ 01

Report To	Contact and company name below will appear on the final report
Company:	DeBeers Gahcho Kué
Contact:	Dave Ott/Michelle Burger
Phone:	867-679-5812/5814
	Company address below will appear on the final report
Street:	5120 49th Street Suite 300
City/Province:	Yellowknife, NT
Postal Code:	X1A 3S8

Report Format / Distribution

Select Report Format: Quality Control (QC) Report with Report

Select Distribution:

Email 1 or Fax: Environment.GahchoKue@debeersgroup.com
Email 2: Dave.Ott@debeersgroup.com
Email 3: Michelle.Burger@debeersgroup.com

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days): 4 day [P4-20%]; 3 day [P3-25%]; 2 day [P2-50%]

EMERGENCY: 1 Business day [E - 100%]; Same Day. Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]

Date and time Required for all E&P TAT: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To	Yes	No
	Copy of Invoice with Report	Yes	No
Company:	DeBeers Group		
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8		

Invoice Distribution

Select Invoice Distribution:
Email 1 or Fax: ap.invoices@debeersgroup.com
Email 2: Mason.Elwood@debeersgroup.com

Project Information

ALS Account # / Quote #:	
Job #:	SNP-10 Weekly
PO / AFE:	4100968747
LSD:	

Oil and Gas Required Fields (client use)

Approver ID:	Cost Center:
GL Account:	Routing Code:
Activity Code:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler: J. Vornbrock

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical Parameters	Major Ions	Total Nutrients (P)	Dissolved Nutrients	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	SNP-10	7-Oct-24	16:05	Water	4	R	R	R	R		

Environmental Division
Yellowknife
Work Order Reference
YL2401747

Telephone : +1 867 873 5593

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

Are samples for human drinking water use?

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ Ice Packs ☐ Ice Cubes ☐ Cooling Initiated ☐

SIF Observations Yes ☐ No ☐

Custody seal intact Yes ☐ No ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
4.9	

SHIPMENT RELEASE (client use)

Released by: J. Vornbrock Date: 9-Oct-24 Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: SA Date: 10/24 OGT Time: 9:40

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0329e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241009/ 01

Date: October 9, 2024

	7-Oct-24				
	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date
	SNP-10				
	Sample Name	Sample Name	Sample Name	Sample Name	Sample Name
Physical Parameters **Rush (Y/N)**	N				
Conductivity	X				
pH	X				
Total Suspended Solids (Ultra Low)	X				
Turbidity	X				
Major Ions **Rush (Y/N)**	N				
Alkalinity, Bicarbonate (as CaCO3)	X				
Alkalinity, Carbonate (as CaCO3)	X				
Alkalinity, Hydroxide (as CaCO3)	X				
Alkalinity, Total (as CaCO3)	X				
Hardness (as CaCO3)	X				
Calcium	X				
Magnesium	X				
Potassium	X				
Sodium	X				
Chloride (Cl)	X				
Fluoride (F)	X				
Total Dissolved Solids (SNP-07)	X				
Sulphate (SO4)	X				
Reactive Silicate	X				
Nutrients **Rush (Y/N)**	N				
Lab to Filter Dissolved Nutrients	X				
Ammonia, Total (as N)	X				
Nitrate and Nitrite (as N)	X				
Nitrate (as N)	X				
Nitrite (as N)	X				
Total Kjeldahl Nitrogen	X				
Orthophosphate-Dissolved (as P)	X				
Phosphorus (P)-Total Dissolved	X				
Phosphorus (P)-Total	X				
Phosphorus (P)-Dissolved Organic	X				
Phosphorus (P)-Total Inorganic	X				
Phosphorus (P)-Dissolved Inorganic	X				
Total Organic Carbon	X				
Aggregate Organics **Rush (Y/N)**					
Biochemical Oxygen Demand (SNP-07)					
Oil and Grease (SNP-07)					
Metals **Rush (Y/N)**					
Lab to Filter Dissolved Metals					
Total Metals (preserved with HNO3)					
Dissolved Metals (not preserved)					

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Rubidium, Selenium, Silver, Strontium, Thallium, Titanium, Uranium, Vanadium, Zinc.

Speciated Metals **Rush (Y/N)**					
Hydrocarbons and VOCs **Rush (Y/N)**					
BTEX, F1-F4					
Total Petroleum Hydrocarbons					
Bacteria **Rush (Y/N)**					
Total Coliforms, Fecal Coliforms, and E. coli					
Radionuclides (SNP-08/09/10) **Rush (Y/N)**					
Uranium and Thorium					
Radium-226 (if U & Th leach to grndwtr)					

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CERTIFICATE OF ANALYSIS

Work Order	: **YL2401754**		
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Edmonton
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife Northwest Territories Canada X1A 1P8	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-10 Weekly	Date Samples Received	: 17-Oct-2024 09:27
PO	: 4100968747	Date Analysis Commenced	: 18-Oct-2024
C-O-C number	: 20241016 03	Issue Date	: 24-Oct-2024 14:57
Sampler	: Lee-Ann Knee		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Daniel Shabestani	Lab Assistant	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units
µS/cm	microsiemens per centimetre
-	no units

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
RRV	Reported result verified by repeat analysis.
SFP	Sample was filtered and preserved at the laboratory.

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

				Client sample ID	SNP-10	SNP-10-03	----	----	----
				Client sampling date / time	16-Oct-2024 13:00	16-Oct-2024 10:10	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401754-001	YL2401754-002	----	----	----
					Result	Result	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	132	<1.0	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	132	<1.0	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	2190	<2.0	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	848	<0.50	----	----	----
pH	----	E108/VA	0.10	pH units	8.04	5.38	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	1560	<10	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	4.4	<1.0	----	----	----
Turbidity	----	E121/VA	0.10	NTU	4.73	<0.10	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	4.45	0.0052 RRV	----	----	----
Bromide	24959-67-9	E235.Br-U/VA	0.0500	mg/L	5.56	<0.0500	----	----	----
Chloride	16887-00-6	E235.Cl-L/VA	0.50	mg/L	441	<0.50	----	----	----
Fluoride	16984-48-8	E235.F-L/VA	0.020	mg/L	1.04	<0.020	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	6.03	<0.050	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-T/VA	0.0030	mg/L	18.8	<0.0030	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/VA	0.0032	mg/L	19.6	<0.0058	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0050	mg/L	0.789	<0.0050	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	0.0378	<0.0010	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-10	SNP-10-03	----	----	----
				Client sampling date / time	16-Oct-2024 13:00	16-Oct-2024 10:10	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401754-001	YL2401754-002	----	----	----
					Result	Result	----	----	----
Anions and Nutrients									
Phosphorus, dissolved inorganic	----	E377-L/EO	0.0010	mg/L	0.0514 SFP	<0.0010 SFP	----	----	----
Phosphorus, dissolved organic	----	EC377-L.ORG/EO	0.0020	mg/L	<0.0056	<0.0020	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0780	<0.0010	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0562 SFP	0.0013 SFP, RRV	----	----	----
Phosphorus, total inorganic	----	E376-L/EO	0.0010	mg/L	0.0748	<0.0010	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	10.7	<0.50	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4-L/VA	0.300	mg/L	301	<0.300	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	2.28	<0.50	----	----	----
Dissolved Metals									
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	191	<0.050	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	90.0	<0.0050	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	19.8	<0.050	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	107	<0.050	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Laboratory	Laboratory	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2401754**	Page	: 1 of 15
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-10 Weekly	Date Samples Received	: 17-Oct-2024 09:27
PO	: 4100968747	Issue Date	: 24-Oct-2024 14:57
C-O-C number	: 20241016 03		
Sampler	: Lee-Ann Knee		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-10	E298	16-Oct-2024	20-Oct-2024	28 days	4 days	✓	22-Oct-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-10-03	E298	16-Oct-2024	22-Oct-2024	28 days	6 days	✓	23-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-10	E235.Br-U	16-Oct-2024	18-Oct-2024	28 days	2 days	✓	18-Oct-2024	28 days	2 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-10-03	E235.Br-U	16-Oct-2024	18-Oct-2024	28 days	3 days	✓	18-Oct-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-10	E235.Cl-L	16-Oct-2024	18-Oct-2024	28 days	2 days	✓	18-Oct-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-10-03	E235.Cl-L	16-Oct-2024	18-Oct-2024	28 days	3 days	✓	18-Oct-2024	28 days	3 days	✓
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-10	E377-L	16-Oct-2024	21-Oct-2024	3 days	5 days	✗ EHT	21-Oct-2024	28 days	0 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-10-03	E377-L	16-Oct-2024	21-Oct-2024	3 days	5 days	✗ EHT	21-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE										
SNP-10	E378-U	16-Oct-2024	18-Oct-2024	3 days	2 days	✓	18-Oct-2024	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE										
SNP-10-03	E378-U	16-Oct-2024	18-Oct-2024	3 days	3 days	✓	18-Oct-2024	3 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE										
SNP-10	E235.F-L	16-Oct-2024	18-Oct-2024	28 days	2 days	✓	18-Oct-2024	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE										
SNP-10-03	E235.F-L	16-Oct-2024	18-Oct-2024	28 days	3 days	✓	18-Oct-2024	28 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE										
SNP-10	E235.NO3-T	16-Oct-2024	18-Oct-2024	3 days	2 days	✓	18-Oct-2024	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE										
SNP-10-03	E235.NO3-T	16-Oct-2024	18-Oct-2024	3 days	3 days	✓	18-Oct-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-10	E235.NO2-L	16-Oct-2024	18-Oct-2024	3 days	2 days	✓	18-Oct-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-10-03	E235.NO2-L	16-Oct-2024	18-Oct-2024	3 days	3 days	✓	18-Oct-2024	3 days	3 days	✓

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE SNP-10	E392	16-Oct-2024	----	----	----		18-Oct-2024	28 days	2 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE SNP-10-03	E392	16-Oct-2024	----	----	----		18-Oct-2024	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE SNP-10	E235.SO4-L	16-Oct-2024	18-Oct-2024	28 days	2 days	✓	18-Oct-2024	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE SNP-10-03	E235.SO4-L	16-Oct-2024	18-Oct-2024	28 days	3 days	✓	18-Oct-2024	28 days	3 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-10	E375-U	16-Oct-2024	22-Oct-2024	3 days	6 days	✖ EHT	22-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-10-03	E375-U	16-Oct-2024	22-Oct-2024	3 days	6 days	✖ EHT	22-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) SNP-10	E376-L	16-Oct-2024	21-Oct-2024	28 days	5 days	✓	21-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) SNP-10-03	E376-L	16-Oct-2024	21-Oct-2024	28 days	5 days	✓	21-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) SNP-10	E318	16-Oct-2024	20-Oct-2024	28 days	4 days	✓	23-Oct-2024	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) SNP-10-03	E318	16-Oct-2024	22-Oct-2024	28 days	6 days	✓	23-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) SNP-10	E372-S	16-Oct-2024	22-Oct-2024	28 days	6 days	✓	22-Oct-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) SNP-10-03	E372-S	16-Oct-2024	22-Oct-2024	28 days	6 days	✓	22-Oct-2024	28 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) SNP-10	E421	16-Oct-2024	21-Oct-2024	180 days	5 days	✓	21-Oct-2024	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) SNP-10-03	E421	16-Oct-2024	21-Oct-2024	180 days	5 days	✓	21-Oct-2024	180 days	6 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) SNP-10	E355-L	16-Oct-2024	20-Oct-2024	28 days	4 days	✓	21-Oct-2024	28 days	5 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) SNP-10-03	E355-L	16-Oct-2024	22-Oct-2024	28 days	6 days	✓	22-Oct-2024	28 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SNP-10	E290	16-Oct-2024	18-Oct-2024	14 days	2 days	✓	19-Oct-2024	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SNP-10-03	E290	16-Oct-2024	18-Oct-2024	14 days	3 days	✓	19-Oct-2024	14 days	3 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE SNP-10	E100	16-Oct-2024	18-Oct-2024	28 days	2 days	✓	19-Oct-2024	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP-10-03	E100	16-Oct-2024	18-Oct-2024	28 days	3 days	✓	19-Oct-2024	28 days	3 days	✓
Physical Tests : pH by Meter										
HDPE SNP-10	E108	16-Oct-2024	18-Oct-2024	0.25 hrs	57 hrs	✗ EHTR-FM	19-Oct-2024	0.25 hrs	69 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE SNP-10-03	E108	16-Oct-2024	18-Oct-2024	0.25 hrs	60 hrs	✗ EHTR-FM	19-Oct-2024	0.25 hrs	72 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SNP-10	E162	16-Oct-2024	----	----	----		23-Oct-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SNP-10-03	E162	16-Oct-2024	----	----	----		23-Oct-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-10	E160-L	16-Oct-2024	----	----	----		23-Oct-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-10-03	E160-L	16-Oct-2024	----	----	----		23-Oct-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE SNP-10	E121	16-Oct-2024	----	----	----		19-Oct-2024	3 days	2 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Turbidity by Nephelometry										
HDPE										
SNP-10-03	E121	16-Oct-2024	----	----	----		19-Oct-2024	3 days	3 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1718021	1	12	8.3	5.0	✓
Ammonia by Fluorescence	E298	1719484	2	28	7.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1718017	1	3	33.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1718014	1	3	33.3	5.0	✓
Conductivity in Water	E100	1718019	1	12	8.3	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1720077	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1719183	1	12	8.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1718022	1	12	8.3	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1718015	1	3	33.3	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1718016	1	3	33.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1718010	1	20	5.0	5.0	✓
pH by Meter	E108	1718020	1	12	8.3	5.0	✓
Reactive Silica by Colourimetry	E392	1717704	1	8	12.5	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1718018	1	3	33.3	5.0	✓
TDS by Gravimetry	E162	1726789	1	7	14.2	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1722724	1	12	8.3	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1720078	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1719493	2	21	9.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1719494	2	22	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1722731	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1718182	1	18	5.5	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1718021	1	12	8.3	5.0	✓
Ammonia by Fluorescence	E298	1719484	2	28	7.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1718017	1	3	33.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1718014	1	3	33.3	5.0	✓
Conductivity in Water	E100	1718019	1	12	8.3	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1720077	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1719183	1	12	8.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1718022	1	12	8.3	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1718015	1	3	33.3	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1718016	1	3	33.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1718010	1	20	5.0	5.0	✓
pH by Meter	E108	1718020	1	12	8.3	5.0	✓
Reactive Silica by Colourimetry	E392	1717704	1	8	12.5	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1718018	1	3	33.3	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
TDS by Gravimetry	E162	1726789	1	7	14.2	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1722724	1	12	8.3	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1720078	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1719493	2	21	9.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1719494	2	22	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1722731	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1726764	1	8	12.5	5.0	✓
Turbidity by Nephelometry	E121	1718182	1	18	5.5	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1718021	1	12	8.3	5.0	✓
Ammonia by Fluorescence	E298	1719484	2	28	7.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1718017	1	3	33.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1718014	1	3	33.3	5.0	✓
Conductivity in Water	E100	1718019	1	12	8.3	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1720077	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1719183	1	12	8.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1718022	1	12	8.3	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1718015	1	3	33.3	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1718016	1	3	33.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1718010	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1717704	1	8	12.5	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1718018	1	3	33.3	5.0	✓
TDS by Gravimetry	E162	1726789	1	7	14.2	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1722724	1	12	8.3	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1720078	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1719493	2	21	9.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1719494	2	22	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1722731	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1726764	1	8	12.5	5.0	✓
Turbidity by Nephelometry	E121	1718182	1	18	5.5	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1719484	2	28	7.1	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1718017	1	3	33.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1718014	1	3	33.3	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1720077	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1719183	1	12	8.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1718022	1	12	8.3	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1718015	1	3	33.3	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1718016	1	3	33.3	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Nitrite in Water by IC (Low Level)	E235.NO2-L	1718010	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1717704	1	8	12.5	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1718018	1	3	33.3	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1722724	1	12	8.3	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1720078	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1719493	2	21	9.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1719494	2	22	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1722731	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry (Low Level)	E160-L ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide by IC (Ultra Trace Level)	E235.Br-U ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC (Low Level)	E235.F-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Trace Level)	E235.NO3-T ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC (Low Level)	E235.SO4-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Total Inorganic Phosphorus is determined colourimetrically after sample has undergone H2SO4 hydrolysis
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved Inorganic Phosphorus is determined colourimetrically after H_2SO_4 hydrolysis of a sample that has been lab or field filtered through a 0.45 micron membrane filter

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Vancouver	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Phosphorus, dissolved organic (0.0014 mg/L) by calculation.	EC377-L.ORG ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved inorganic phosphorus is subtracted from total dissolved phosphorus to determine dissolved organic phosphorus.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
	ALS Environmental - Edmonton			
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Digestion for Total Inorganic Phosphorus in water	EP376 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples undergo H2SO4 hydrolysis.
Digestion for Dissolved Inorganic Phosphorus in water	EP377 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then undergo H2SO4 hydrolysis.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

ALS Canada Ltd.

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QUALITY CONTROL REPORT

Work Order	: **YL2401754**	Page	: 1 of 10
Client	: De Beers Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-10 Weekly	Date Samples Received	: 17-Oct-2024 09:27
PO	: 4100968747	Date Analysis Commenced	: 18-Oct-2024
C-O-C number	: 20241016 03	Issue Date	: 24-Oct-2024 14:57
Sampler	: Lee-Ann Knee		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta
Daniel Shabestani	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Monica Ko	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1718019)											
FJ2403166-002	Anonymous	Conductivity	----	E100	2.0	µS/cm	396	397	0.252%	10%	----
Physical Tests (QC Lot: 1718020)											
FJ2403166-002	Anonymous	pH	----	E108	0.10	pH units	8.22	8.22	0.00%	4%	----
Physical Tests (QC Lot: 1718021)											
FJ2403166-002	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	105	103	1.64%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	105	103	1.64%	20%	----
Physical Tests (QC Lot: 1718182)											
VA24C7916-003	Anonymous	Turbidity	----	E121	0.10	NTU	0.48	0.49	0.003	Diff <2x LOR	----
Physical Tests (QC Lot: 1726789)											
VA24C7918-009	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	1670	1850	9.80%	20%	----
Anions and Nutrients (QC Lot: 1717704)											
CG2415006-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.0	mg/L	30.3	30.5	0.20	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1718010)											
FJ2403153-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0078	0.0070	0.0008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1718014)											
YL2401753-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	1.00	mg/L	555	561	1.15%	20%	----
Anions and Nutrients (QC Lot: 1718015)											
YL2401753-001	Anonymous	Fluoride	16984-48-8	E235.F-L	0.100	mg/L	0.201	0.206	0.005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1718016)											
YL2401753-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	0.0300	mg/L	5.85	5.93	1.42%	20%	----
Anions and Nutrients (QC Lot: 1718017)											
YL2401753-001	Anonymous	Bromide	24959-67-9	E235.Br-U	0.0500	mg/L	7.35	7.42	0.991%	20%	----
Anions and Nutrients (QC Lot: 1718018)											
YL2401753-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.500	mg/L	171	173	1.11%	20%	----
Anions and Nutrients (QC Lot: 1718022)											
FJ2403153-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 1719484)											
KS2404349-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1719493)											
VA24C7550-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.095	0.100	0.005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1720077)											
YL2401720-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0010	mg/L	0.0016	0.0012	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1720078)											
YL2401720-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0010	mg/L	0.0072	0.0075	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1722724)											
EO2409077-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0100	mg/L	1.29	1.31	1.95%	20%	----
Anions and Nutrients (QC Lot: 1722731)											
FC2402883-002	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0536	0.0529	1.31%	20%	----
Anions and Nutrients (QC Lot: 1723582)											
VA24C7423-004	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	1.00	mg/L	42.1	36.0	15.7%	20%	----
Anions and Nutrients (QC Lot: 1723583)											
VA24C7423-004	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.500	mg/L	15.7	15.9	1.68%	20%	----
Organic / Inorganic Carbon (QC Lot: 1719494)											
VA24C7550-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	6.84	6.99	2.12%	20%	----
Organic / Inorganic Carbon (QC Lot: 1723584)											
VA24C7423-004	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	46.7	50.0	6.99%	20%	----
Dissolved Metals (QC Lot: 1719183)											
YL2401753-001	Anonymous	Calcium, dissolved	7440-70-2	E421	0.050	mg/L	171	176	2.82%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	42.7	42.6	0.395%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	11.0	10.8	1.09%	20%	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	171	167	2.44%	20%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1718019)						
Conductivity	----	E100	1	µS/cm	1.1	----
Physical Tests (QCLot: 1718021)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1718182)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1726764)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 1726789)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1717704)						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1718010)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1718014)						
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1718015)						
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1718016)						
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	<0.0030	----
Anions and Nutrients (QCLot: 1718017)						
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1718018)						
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1718022)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1719484)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1719493)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1719493) - continued						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1720077)						
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1720078)						
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1722724)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1722731)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1723582)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1723583)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1719494)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1723584)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Dissolved Metals (QCLot: 1719183)						
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1718019)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	107	90.0	110	----
Physical Tests (QCLot: 1718020)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1718021)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	106	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1718182)									
Turbidity	----	E121	0.1	NTU	200 NTU	96.5	85.0	115	----
Physical Tests (QCLot: 1726764)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	96.8	85.0	115	----
Physical Tests (QCLot: 1726789)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 1717704)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1718010)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.5	90.0	110	----
Anions and Nutrients (QCLot: 1718014)									
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1718015)									
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	1 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1718016)									
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1718017)									
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	0.5 mg/L	109	85.0	115	----
Anions and Nutrients (QCLot: 1718018)									
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1718022)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	100	80.0	120	----
Anions and Nutrients (QCLot: 1719484)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1719493)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1719493) - continued									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	111	75.0	125	----
Anions and Nutrients (QCLot: 1720077)									
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1720078)									
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	0.05 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 1722724)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 1722731)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 1723582)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1723583)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	105	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1719494)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	100	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1723584)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	93.1	80.0	120	----
Dissolved Metals (QCLot: 1719183)									
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	97.9	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	104	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1717704)										
CG2415006-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	202 mg/L	200 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1718010)										
VA24C7795-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	9.69 mg/L	10 mg/L	96.9	75.0	125	----
Anions and Nutrients (QCLot: 1718014)										
YL2401754-001	SNP-10	Chloride	16887-00-6	E235.Cl-L	1020 mg/L	1000 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1718015)										
YL2401754-001	SNP-10	Fluoride	16984-48-8	E235.F-L	10.4 mg/L	10 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1718016)										
YL2401754-001	SNP-10	Nitrate (as N)	14797-55-8	E235.NO3-T	25.5 mg/L	25 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1718017)										
YL2401754-001	SNP-10	Bromide	24959-67-9	E235.Br-U	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1718018)										
YL2401754-001	SNP-10	Sulfate (as SO4)	14808-79-8	E235.SO4-L	1030 mg/L	1000 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1718022)										
FJ2403166-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0239 mg/L	0.03 mg/L	79.6	70.0	130	----
Anions and Nutrients (QCLot: 1719484)										
VA24C7497-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.103 mg/L	0.1 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1719493)										
VA24C7550-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.52 mg/L	2.5 mg/L	101	70.0	130	----
Anions and Nutrients (QCLot: 1720077)										
YL2401737-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0581 mg/L	0.05 mg/L	116	70.0	130	----
Anions and Nutrients (QCLot: 1720078)										
YL2401737-001	Anonymous	Phosphorus, total inorganic	----	E376-L	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1722724)										
EO2409155-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0672 mg/L	0.067 mg/L	100	70.0	130	----
Anions and Nutrients (QCLot: 1722731)										
FC2402886-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1723582)										
VA24C8109-008	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.67 mg/L	2.5 mg/L	107	70.0	130	----
Anions and Nutrients (QCLot: 1723583)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1723583) - continued										
VA24C7457-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1719494)										
VA24C7550-002	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1723584)										
VA24C8109-008	Anonymous	Carbon, total organic [TOC]	----	E355-L	4.79 mg/L	5 mg/L	95.8	70.0	130	----
Dissolved Metals (QCLot: 1719183)										
VA24C7963-003	Anonymous	Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	4.00 mg/L	4 mg/L	100.0	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 20241016 03

Report To	Contact and company name below will appear on the final report
Company:	DeBeers Gahcho Kué
Contact:	Dave Ott/Michelle Burger
Phone:	867-679-5812/5814
	Company address below will appear on the final report
Street:	5120 49th Street Suite 300
City/Province:	Yellowknife, NT
Postal Code:	X1A 3S8

Report Format / Distribution

Select Report Format: Quality Control (QC) Report with Report

Select Distribution:

Email 1 or Fax: Environment.GahchoKue@debeersgroup.com
Email 2: Dave.Ott@debeersgroup.com
Email 3: Michelle.Burger@debeersgroup.com

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days): 4 day [P4-20%]; 3 day [P3-25%]; 2 day [P2-50%]

EMERGENCY: 1 Business day [E - 100%]; Same Day. Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]

Date and time Required for all E&P TA: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To	Yes	No
	Copy of Invoice with Report	Yes	No
Company:	DeBeers Group		
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8		

Invoice Distribution

Select Invoice Distribution:
Email 1 or Fax: ap.invoices@debeersgroup.com
Email 2: Mason.Elwood@debeersgroup.com

Project Information

ALS Account # / Quote #:
Job #: SNP-10 Weekly
PO / AFE: 4100968747
LSD:

Oil and Gas Required Fields (client use)

Approver ID: | Cost Center:
GL Account: | Routing Code:
Activity Code:
Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg | Sampler: L. Knee

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical Parameters	Major Ions	Total Nutrients (P)	Dissolved Nutrients	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	SNP-10	16-Oct-24	13:00	Water	4	R	R	R	R		
	SNP-10-03	16-Oct-24	10:10	Water	4	R	R	R	R		

Environmental Division
Yellowknife
Work Order Reference
YL2401754
Telephone : +1 867 873 5593

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

Are samples for human drinking water use?

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
3.2°C	

SHIPMENT RELEASE (client use)

Released by: L.Knee | Date: 16-Oct-24 | Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Chris Beaucho | Date: Oct 17 | Time: 9:27

FINAL SHIPMENT RECEPTION (lab use only)

Received by: | Date: | Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326e v03 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241016- 03

Date: October 16, 2024

	16-Oct-24	16-Oct-24			
	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date
	SNP-10	SNP-10-03			
	Sample Name	Sample Name	Sample Name	Sample Name	Sample Name
Physical Parameters **Rush (Y/N)**	N	N			
Conductivity	X	X			
pH	X	X			
Total Suspended Solids (Ultra Low)	X	X			
Turbidity	X	X			
Major Ions **Rush (Y/N)**	N	N			
Alkalinity, Bicarbonate (as CaCO3)	X	X			
Alkalinity, Carbonate (as CaCO3)	X	X			
Alkalinity, Hydroxide (as CaCO3)	X	X			
Alkalinity, Total (as CaCO3)	X	X			
Hardness (as CaCO3)	X	X			
Calcium	X	X			
Magnesium	X	X			
Potassium	X	X			
Sodium	X	X			
Chloride (Cl)	X	X			
Fluoride (F)	X	X			
Total Dissolved Solids (SNP-07)	X	X			
Sulphate (SO4)	X	X			
Reactive Silicate	X	X			
Nutrients **Rush (Y/N)**	N	N			
Lab to Filter Dissolved Nutrients	X	X			
Ammonia, Total (as N)	X	X			
Nitrate and Nitrite (as N)	X	X			
Nitrate (as N)	X	X			
Nitrite (as N)	X	X			
Total Kjeldahl Nitrogen	X	X			
Orthophosphate-Dissolved (as P)	X	X			
Phosphorus (P)-Total Dissolved	X	X			
Phosphorus (P)-Total	X	X			
Phosphorus (P)-Dissolved Organic	X	X			
Phosphorus (P)-Total Inorganic	X	X			
Phosphorus (P)-Dissolved Inorganic	X	X			
Total Organic Carbon	X	X			
Aggregate Organics **Rush (Y/N)**					
Biochemical Oxygen Demand (SNP-07)					
Oil and Grease (SNP-07)					
Metals **Rush (Y/N)**					
Lab to Filter Dissolved Metals					
Total Metals (preserved with HNO3)					
Dissolved Metals (not preserved)					

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium,

Speciated Metals **Rush (Y/N)**					
Hydrocarbons and VOCs **Rush (Y/N)**					
BTEX, F1-F4					
Total Petroleum Hydrocarbons					
Bacteria **Rush (Y/N)**					
Total Coliforms, Fecal Coliforms, and E. coli					
Radionuclides (SNP-08/09/10) **Rush (Y/N)**					
Uranium and Thorium					
Radium-226 (if U & Th leach to grndwtr)					

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CERTIFICATE OF ANALYSIS

Work Order	: **YL2401778**		
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Edmonton
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife Northwest Territories Canada X1A 1P8	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-10 Weekly	Date Samples Received	: 23-Oct-2024 09:26
PO	: 4100968747	Date Analysis Commenced	: 25-Oct-2024
C-O-C number	: 20241022 03	Issue Date	: 30-Oct-2024 20:09
Sampler	: Lee-Ann Knee		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Manpreet Cheema	Lab Assistant	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
pH units	pH units
µS/cm	microsiemens per centimetre
NTU	nephelometric turbidity units
-	no units

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
SFP	Sample was filtered and preserved at the laboratory.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-10	----	----	----	----
				Client sampling date / time	22-Oct-2024 09:28	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401778-001	----	----	----	----
					Result	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	122	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	122	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	2540	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	1050	----	----	----	----
pH	----	E108/VA	0.10	pH units	8.00	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	1740	----	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	53.8	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	31.0	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	3.07	----	----	----	----
Bromide	24959-67-9	E235.Br-U/VA	0.0500	mg/L	7.18	----	----	----	----
Chloride	16887-00-6	E235.Cl-L/VA	0.50	mg/L	609	----	----	----	----
Fluoride	16984-48-8	E235.F-L/VA	0.020	mg/L	0.522	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	3.93	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-T/VA	0.0030	mg/L	12.6	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/VA	0.0032	mg/L	13.2	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0050	mg/L	0.567	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	0.0057	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-10	----	----	----	----
				Client sampling date / time	22-Oct-2024 09:28	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401778-001	----	----	----	----
					Result	----	----	----	----
Anions and Nutrients									
Phosphorus, dissolved inorganic	----	E377-L/EO	0.0010	mg/L	0.0093	----	----	----	----
Phosphorus, dissolved organic	----	EC377-L.ORG/EO	0.0020	mg/L	0.0021	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0848	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0114 SFP	----	----	----	----
Phosphorus, total inorganic	----	E376-L/EO	0.0010	mg/L	0.0805	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	10.2	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4-L/VA	0.300	mg/L	310	----	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	2.28	----	----	----	----
Dissolved Metals									
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	259	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	98.7	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	19.9	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	133	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Laboratory	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2401778**	Page	: 1 of 13
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-10 Weekly	Date Samples Received	: 23-Oct-2024 09:26
PO	: 4100968747	Issue Date	: 30-Oct-2024 20:10
C-O-C number	: 20241022 03		
Sampler	: Lee-Ann Knee		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Dissolved Metals	QC-MRG3-1731070 001	----	Potassium, dissolved	7440-09-7	E421	0.050 B mg/L	0.05 mg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	*Description*
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-10	E298	22-Oct-2024	28-Oct-2024	28 days	6 days	✓	28-Oct-2024	28 days	6 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-10	E235.Br-U	22-Oct-2024	25-Oct-2024	28 days	3 days	✓	25-Oct-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-10	E235.Cl-L	22-Oct-2024	25-Oct-2024	28 days	3 days	✓	25-Oct-2024	28 days	3 days	✓
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-10	E377-L	22-Oct-2024	29-Oct-2024	3 days	7 days	× EHT	30-Oct-2024	28 days	1 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE SNP-10	E378-U	22-Oct-2024	25-Oct-2024	3 days	3 days	✓	25-Oct-2024	3 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE SNP-10	E235.F-L	22-Oct-2024	25-Oct-2024	28 days	3 days	✓	25-Oct-2024	28 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE SNP-10	E235.NO3-T	22-Oct-2024	25-Oct-2024	3 days	3 days	✓	25-Oct-2024	3 days	3 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-10	E235.NO2-L	22-Oct-2024	25-Oct-2024	3 days	3 days	✓	25-Oct-2024	3 days	3 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP-10	E392	22-Oct-2024	----	----	----		24-Oct-2024	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE										
SNP-10	E235.SO4-L	22-Oct-2024	25-Oct-2024	28 days	3 days	✓	25-Oct-2024	28 days	3 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-10	E375-U	22-Oct-2024	29-Oct-2024	3 days	7 days	✗ EHT	29-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-10	E376-L	22-Oct-2024	29-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
SNP-10	E318	22-Oct-2024	28-Oct-2024	28 days	6 days	✓	29-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-10	E372-S	22-Oct-2024	29-Oct-2024	28 days	7 days	✓	29-Oct-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SNP-10	E421	22-Oct-2024	25-Oct-2024	180 days	3 days	✓	25-Oct-2024	180 days	3 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP-10	E355-L	22-Oct-2024	28-Oct-2024	28 days	6 days	✓	28-Oct-2024	28 days	6 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE SNP-10	E290	22-Oct-2024	25-Oct-2024	14 days	3 days	✓	25-Oct-2024	14 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP-10	E100	22-Oct-2024	25-Oct-2024	28 days	3 days	✓	25-Oct-2024	28 days	3 days	✓
Physical Tests : pH by Meter										
HDPE SNP-10	E108	22-Oct-2024	25-Oct-2024	0.25 hrs	70 hrs	✗ EHTR-FM	25-Oct-2024	0.25 hrs	74 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SNP-10	E162	22-Oct-2024	----	----	----		29-Oct-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-10	E160-L	22-Oct-2024	----	----	----		29-Oct-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE SNP-10	E121	22-Oct-2024	----	----	----		25-Oct-2024	3 days	3 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1730465	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	1735109	1	17	5.8	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1730477	1	3	33.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1730474	1	3	33.3	5.0	✓
Conductivity in Water	E100	1730463	1	14	7.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1736918	1	3	33.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1731070	1	6	16.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1730479	1	9	11.1	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1730475	1	3	33.3	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1730476	1	3	33.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1730470	1	18	5.5	5.0	✓
pH by Meter	E108	1730464	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1730110	1	6	16.6	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1730478	1	3	33.3	5.0	✓
TDS by Gravimetry	E162	1738335	1	12	8.3	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1736919	1	3	33.3	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1736917	1	12	8.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1735107	1	5	20.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1735108	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1737012	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1730721	1	10	10.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1730465	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	1735109	1	17	5.8	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1730477	1	3	33.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1730474	1	3	33.3	5.0	✓
Conductivity in Water	E100	1730463	1	14	7.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1736918	1	3	33.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1731070	1	6	16.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1730479	1	9	11.1	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1730475	1	3	33.3	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1730476	1	3	33.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1730470	1	18	5.5	5.0	✓
pH by Meter	E108	1730464	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1730110	1	6	16.6	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1730478	1	3	33.3	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
TDS by Gravimetry	E162	1738335	1	12	8.3	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1736919	1	3	33.3	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1736917	1	12	8.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1735107	1	5	20.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1735108	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1737012	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1738317	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1730721	1	10	10.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1730465	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	1735109	1	17	5.8	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1730477	1	3	33.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1730474	1	3	33.3	5.0	✓
Conductivity in Water	E100	1730463	1	14	7.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1736918	1	3	33.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1731070	1	6	16.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1730479	1	9	11.1	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1730475	1	3	33.3	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1730476	1	3	33.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1730470	1	18	5.5	5.0	✓
Reactive Silica by Colourimetry	E392	1730110	1	6	16.6	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1730478	1	3	33.3	5.0	✓
TDS by Gravimetry	E162	1738335	1	12	8.3	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1736919	1	3	33.3	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1736917	1	12	8.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1735107	1	5	20.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1735108	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1737012	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1738317	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1730721	1	10	10.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1735109	1	17	5.8	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1730477	1	3	33.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1730474	1	3	33.3	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1736918	1	3	33.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1731070	1	6	16.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1730479	1	9	11.1	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1730475	1	3	33.3	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1730476	1	3	33.3	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Nitrite in Water by IC (Low Level)	E235.NO2-L	1730470	1	18	5.5	5.0	✓
Reactive Silica by Colourimetry	E392	1730110	1	6	16.6	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1730478	1	3	33.3	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1736919	1	3	33.3	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1736917	1	12	8.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1735107	1	5	20.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1735108	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1737012	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry (Low Level)	E160-L ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide by IC (Ultra Trace Level)	E235.Br-U ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC (Low Level)	E235.F-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Trace Level)	E235.NO3-T ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC (Low Level)	E235.SO4-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Total Inorganic Phosphorus is determined colourimetrically after sample has undergone H2SO4 hydrolysis
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved Inorganic Phosphorus is determined colourimetrically after H_2SO_4 hydrolysis of a sample that has been lab or field filtered through a 0.45 micron membrane filter

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Vancouver	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Phosphorus, dissolved organic (0.0014 mg/L) by calculation.	EC377-L.ORG ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved inorganic phosphorus is subtracted from total dissolved phosphorus to determine dissolved organic phosphorus.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
	ALS Environmental - Edmonton			
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Digestion for Total Inorganic Phosphorus in water	EP376 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples undergo H2SO4 hydrolysis.
Digestion for Dissolved Inorganic Phosphorus in water	EP377 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then undergo H2SO4 hydrolysis.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

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QUALITY CONTROL REPORT

Work Order	: **YL2401778**	Page	: 1 of 10
Client	: De Beers Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-10 Weekly	Date Samples Received	: 23-Oct-2024 09:26
PO	: 4100968747	Date Analysis Commenced	: 24-Oct-2024
C-O-C number	: 20241022 03	Issue Date	: 30-Oct-2024 20:09
Sampler	: Lee-Ann Knee		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta
Dan Gebert	Laboratory Analyst	Vancouver Metals, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Vancouver Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Manpreet Cheema	Lab Assistant	Vancouver Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1730463)											
FJ2403238-005	Anonymous	Conductivity	----	E100	2.0	µS/cm	584	586	0.342%	10%	----
Physical Tests (QC Lot: 1730464)											
FJ2403238-005	Anonymous	pH	----	E108	0.10	pH units	8.10	8.13	0.370%	4%	----
Physical Tests (QC Lot: 1730465)											
FJ2403238-005	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	341	334	2.13%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	341	334	2.13%	20%	----
Physical Tests (QC Lot: 1730721)											
VA24C8612-001	Anonymous	Turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1738335)											
VA24C8728-007	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	2430	2590	6.54%	20%	----
Anions and Nutrients (QC Lot: 1730110)											
VA24C8511-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	4.40	4.36	0.04	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1730470)											
FJ2403238-005	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.112	0.113	0.372%	20%	----
Anions and Nutrients (QC Lot: 1730474)											
YL2401776-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	1.00	mg/L	534	534	0.0881%	20%	----
Anions and Nutrients (QC Lot: 1730475)											
YL2401776-001	Anonymous	Fluoride	16984-48-8	E235.F-L	0.100	mg/L	0.292	0.291	0.0008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1730476)											
YL2401776-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	0.0300	mg/L	21.0	21.0	0.0419%	20%	----
Anions and Nutrients (QC Lot: 1730477)											
YL2401776-001	Anonymous	Bromide	24959-67-9	E235.Br-U	0.0500	mg/L	4.68	4.69	0.109%	20%	----
Anions and Nutrients (QC Lot: 1730478)											
YL2401776-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.500	mg/L	88.8	87.4	1.53%	20%	----
Anions and Nutrients (QC Lot: 1730479)											
FJ2403238-005	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1735107)											
KS2404374-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.060	<0.050	0.010	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1735109)											
FJ2403242-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0466	0.0475	0.0009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1736917)											
YL2401776-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0010	mg/L	0.0161	0.0152	6.01%	20%	----
Anions and Nutrients (QC Lot: 1736918)											
YL2401776-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0010	mg/L	0.0017	0.0015	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1736919)											
YL2401776-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0037	0.0031	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1737012)											
GP2402101-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0029	0.0024	0.0005	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1735108)											
YL2401776-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	2.84	3.05	0.22	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1731070)											
YL2401776-001	Anonymous	Calcium, dissolved	7440-70-2	E421	0.050	mg/L	187	184	1.76%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	48.2	49.4	2.28%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	40.5	39.3	3.03%	20%	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	105	105	0.0761%	20%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1730463)						
Conductivity	----	E100	1	µS/cm	1.5	----
Physical Tests (QCLot: 1730465)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1730721)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1738317)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 1738335)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1730110)						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1730470)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1730474)						
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1730475)						
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1730476)						
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	<0.0030	----
Anions and Nutrients (QCLot: 1730477)						
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1730478)						
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1730479)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1735107)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1735109)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1735109) - continued						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1736917)						
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1736918)						
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1736919)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1737012)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 1735108)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Dissolved Metals (QCLot: 1731070)						
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	# 0.050	B
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----

Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1730463)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 1730464)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1730465)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	91.4	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	108	85.0	115	----
Physical Tests (QCLot: 1730721)									
Turbidity	----	E121	0.1	NTU	200 NTU	98.0	85.0	115	----
Physical Tests (QCLot: 1738317)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	87.2	85.0	115	----
Physical Tests (QCLot: 1738335)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1730110)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	99.7	85.0	115	----
Anions and Nutrients (QCLot: 1730470)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1730474)									
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1730475)									
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1730476)									
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1730477)									
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	0.5 mg/L	110	85.0	115	----
Anions and Nutrients (QCLot: 1730478)									
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1730479)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	95.0	80.0	120	----
Anions and Nutrients (QCLot: 1735107)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	96.8	75.0	125	----
Anions and Nutrients (QCLot: 1735109)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1735109) - continued									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.6	85.0	115	----
Anions and Nutrients (QCLot: 1736917)									
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1736918)									
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1736919)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 1737012)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	101	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1735108)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	110	80.0	120	----
Dissolved Metals (QCLot: 1731070)									
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	99.9	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	99.2	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	105	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1730110)										
VA24C8511-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	9.20 mg/L	10 mg/L	92.0	75.0	125	----
Anions and Nutrients (QCLot: 1730470)										
FJ2403238-006	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.491 mg/L	0.5 mg/L	98.1	75.0	125	----
Anions and Nutrients (QCLot: 1730474)										
YL2401777-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	2030 mg/L	2000 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1730475)										
YL2401777-001	Anonymous	Fluoride	16984-48-8	E235.F-L	20.8 mg/L	20 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1730476)										
YL2401777-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	50.4 mg/L	50 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1730477)										
YL2401777-001	Anonymous	Bromide	24959-67-9	E235.Br-U	11.2 mg/L	10 mg/L	112	75.0	125	----
Anions and Nutrients (QCLot: 1730478)										
YL2401777-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	2040 mg/L	2000 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1730479)										
FJ2403238-006	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0314 mg/L	0.03 mg/L	105	70.0	130	----
Anions and Nutrients (QCLot: 1735107)										
VA24C8659-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.59 mg/L	2.5 mg/L	104	70.0	130	----
Anions and Nutrients (QCLot: 1735109)										
FJ2403242-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0970 mg/L	0.1 mg/L	97.0	75.0	125	----
Anions and Nutrients (QCLot: 1736917)										
YL2401777-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0584 mg/L	0.05 mg/L	117	70.0	130	----
Anions and Nutrients (QCLot: 1736918)										
YL2401777-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0570 mg/L	0.05 mg/L	114	70.0	130	----
Anions and Nutrients (QCLot: 1736919)										
YL2401777-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0728 mg/L	0.067 mg/L	108	70.0	130	----
Anions and Nutrients (QCLot: 1737012)										
GP2402101-002	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0751 mg/L	0.067 mg/L	112	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1735108)										
YL2401777-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Dissolved Metals (QCLot: 1731070)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1731070) - continued										
YL2401777-001	Anonymous	Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 20241022 03

Report To	Contact and company name below will appear on the final report
Company:	DeBeers Gahcho Kué
Contact:	Dave Ott/Michelle Burger
Phone:	867-679-5812/5814
	Company address below will appear on the final report
Street:	5120 49th Street Suite 300
City/Province:	Yellowknife, NT
Postal Code:	X1A 3S8

Report Format / Distribution

Select Report Format: Quality Control (QC) Report with Report

Select Distribution:

Email 1 or Fax: Environment.GahchoKue@debeersgroup.com

Email 2: Dave.Ott@debeersgroup.com

Email 3: Michelle.Burger@debeersgroup.com

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days): 4 day [P4-20%]; 3 day [P3-25%]; 2 day [P2-50%]

EMERGENCY: 1 Business day [E - 100%]; Same Day. Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]

Date and time Required for all E&P TA: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To	Yes	No
	Copy of Invoice with Report	Yes	No
Company:	DeBeers Group		
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8		

Invoice Distribution

Select Invoice Distribution:

Email 1 or Fax: ap.invoices@debeersgroup.com

Email 2: Mason.Elwood@debeersgroup.com

Project Information

ALS Account # / Quote #:	
Job #:	SNP-10 Weekly
PO / AFE:	4100968747
LSD:	

Oil and Gas Required Fields (client use)

Approver ID:	Cost Center:
GL Account:	Routing Code:
Activity Code:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg

Sampler: L. Knee

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical Parameters	Major Ions	Total Nutrients	Dissolved Nutrients										SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
								P												
	SNP-10	22-Oct-24	9:28	Water	4	R	R	R	R											

Environmental Division
Yellowknife
Work Order Reference
YL2401778

Telephone : +1 867 873 5593

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

Are samples for human drinking water use?

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
6.3							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: L.Knee	Date: 22-Oct-24	Time:	Received by: SA	Date: OCT	Time: 9:26	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0028a v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241022- 03

Date: October 22, 2024

	22-Oct-24				
	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date
	SNP-10				
	Sample Name	Sample Name	Sample Name	Sample Name	Sample Name
Physical Parameters **Rush (Y/N)**	N				
Conductivity	X				
pH	X				
Total Suspended Solids (Ultra Low)	X				
Turbidity	X				
Major Ions **Rush (Y/N)**	N				
Alkalinity, Bicarbonate (as CaCO3)	X				
Alkalinity, Carbonate (as CaCO3)	X				
Alkalinity, Hydroxide (as CaCO3)	X				
Alkalinity, Total (as CaCO3)	X				
Hardness (as CaCO3)	X				
Calcium	X				
Magnesium	X				
Potassium	X				
Sodium	X				
Chloride (Cl)	X				
Fluoride (F)	X				
Total Dissolved Solids (SNP-07)	X				
Sulphate (SO4)	X				
Reactive Silicate	X				
Nutrients **Rush (Y/N)**	N				
Lab to Filter Dissolved Nutrients	X				
Ammonia, Total (as N)	X				
Nitrate and Nitrite (as N)	X				
Nitrate (as N)	X				
Nitrite (as N)	X				
Total Kjeldahl Nitrogen	X				
Orthophosphate-Dissolved (as P)	X				
Phosphorus (P)-Total Dissolved	X				
Phosphorus (P)-Total	X				
Phosphorus (P)-Dissolved Organic	X				
Phosphorus (P)-Total Inorganic	X				
Phosphorus (P)-Dissolved Inorganic	X				
Total Organic Carbon	X				
Aggregate Organics **Rush (Y/N)**					
Biochemical Oxygen Demand (SNP-07)					
Oil and Grease (SNP-07)					
Metals **Rush (Y/N)**					
Lab to Filter Dissolved Metals					
Total Metals (preserved with HNO3)					
Dissolved Metals (not preserved)					

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium,

Speciated Metals **Rush (Y/N)**					
Hydrocarbons and VOCs **Rush (Y/N)**					
BTEX, F1-F4					
Total Petroleum Hydrocarbons					
Bacteria **Rush (Y/N)**					
Total Coliforms, Fecal Coliforms, and E. coli					
Radionuclides (SNP-08/09/10) **Rush (Y/N)**					
Uranium and Thorium					
Radium-226 (if U & Th leach to grndwtr)					

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **YL2401788**		
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Edmonton
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife Northwest Territories Canada X1A 1P8	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Weekly	Date Samples Received	: 24-Oct-2024 09:25
PO	: 4100968747	Date Analysis Commenced	: 28-Oct-2024
C-O-C number	: 20241023 01	Issue Date	: 31-Oct-2024 15:26
Sampler	: Lee-Ann Knee		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Daniel Shabestani	Lab Assistant	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units
µS/cm	microsiemens per centimetre
-	no units

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
SFP	Sample was filtered and preserved at the laboratory.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	23-Oct-2024 12:08	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401788-001	----	----	----	----
					Result	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	110	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	110	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	4130	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	1260	----	----	----	----
pH	----	E108/VA	0.10	pH units	8.00	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	2430	----	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	362	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	186	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	1.38	----	----	----	----
Bromide	24959-67-9	E235.Br-U/VA	0.0500	mg/L	13.9	----	----	----	----
Chloride	16887-00-6	E235.Cl-L/VA	0.50	mg/L	1020	----	----	----	----
Fluoride	16984-48-8	E235.F-L/VA	0.020	mg/L	0.844	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	2.78	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-T/VA	0.0030	mg/L	9.57	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/VA	0.0032	mg/L	9.78	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0050	mg/L	0.205	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	23-Oct-2024 12:08	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401788-001	----	----	----	----
					Result	----	----	----	----
Anions and Nutrients									
Phosphorus, dissolved inorganic	----	E377-L/EO	0.0010	mg/L	0.0018	----	----	----	----
Phosphorus, dissolved organic	----	EC377-L.ORG/EO	0.0020	mg/L	0.0022	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.604	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0040 SFP	----	----	----	----
Phosphorus, total inorganic	----	E376-L/EO	0.0010	mg/L	0.623	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	11.5	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4-L/VA	0.300	mg/L	516	----	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	2.51	----	----	----	----
Dissolved Metals									
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	373	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	81.1	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	8.40	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	349	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Laboratory	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2401788**	Page	: 1 of 12
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Weekly	Date Samples Received	: 24-Oct-2024 09:25
PO	: 4100968747	Issue Date	: 31-Oct-2024 15:28
C-O-C number	: 20241023 01		
Sampler	: Lee-Ann Knee		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-08	E298	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	29-Oct-2024	28 days	6 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-08	E235.Br-U	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-08	E235.Cl-L	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-08	E377-L	23-Oct-2024	30-Oct-2024	3 days	7 days	× EHT	30-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE SNP-08	E378-U	23-Oct-2024	28-Oct-2024	3 days	5 days	× EHT	28-Oct-2024	3 days	5 days	× EHT
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE SNP-08	E235.F-L	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE SNP-08	E235.NO3-T	23-Oct-2024	28-Oct-2024	3 days	5 days	× EHT	28-Oct-2024	3 days	5 days	× EHT

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-08	E235.NO2-L	23-Oct-2024	28-Oct-2024	3 days	5 days	✗ EHT	28-Oct-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP-08	E392	23-Oct-2024	----	----	----		29-Oct-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE										
SNP-08	E235.SO4-L	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-08	E375-U	23-Oct-2024	30-Oct-2024	3 days	7 days	✗ EHT	30-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-08	E376-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
SNP-08	E318	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	29-Oct-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-08	E372-S	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SNP-08	E421	23-Oct-2024	29-Oct-2024	180 days	6 days	✓	29-Oct-2024	180 days	6 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP-08	E355-L	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE SNP-08	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP-08	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : pH by Meter										
HDPE SNP-08	E108	23-Oct-2024	28-Oct-2024	0.25 hrs	116 hrs	✗ EHTR-FM	28-Oct-2024	0.25 hrs	121 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SNP-08	E162	23-Oct-2024	----	----	----		30-Oct-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-08	E160-L	23-Oct-2024	----	----	----		30-Oct-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE SNP-08	E121	23-Oct-2024	----	----	----		29-Oct-2024	3 days	6 days	✗ EHT

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1734969	1	4	25.0	5.0	✓
Ammonia by Fluorescence	E298	1735198	1	15	6.6	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1734979	1	1	100.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1734976	1	1	100.0	5.0	✓
Conductivity in Water	E100	1734968	1	15	6.6	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1739462	1	1	100.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1737599	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1734981	1	4	25.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1734977	1	1	100.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1734978	1	1	100.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1734974	1	19	5.2	5.0	✓
pH by Meter	E108	1734967	1	15	6.6	5.0	✓
Reactive Silica by Colourimetry	E392	1738721	1	12	8.3	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1734980	1	1	100.0	5.0	✓
TDS by Gravimetry	E162	1741021	1	6	16.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1739463	1	8	12.5	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1739461	1	1	100.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1735201	1	4	25.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1735202	1	4	25.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1739555	1	5	20.0	5.0	✓
Turbidity by Nephelometry	E121	1738580	1	10	10.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1734969	1	4	25.0	5.0	✓
Ammonia by Fluorescence	E298	1735198	1	15	6.6	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1734979	1	1	100.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1734976	1	1	100.0	5.0	✓
Conductivity in Water	E100	1734968	1	15	6.6	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1739462	1	1	100.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1737599	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1734981	1	4	25.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1734977	1	1	100.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1734978	1	1	100.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1734974	1	19	5.2	5.0	✓
pH by Meter	E108	1734967	1	15	6.6	5.0	✓
Reactive Silica by Colourimetry	E392	1738721	1	12	8.3	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1734980	1	1	100.0	5.0	✓

Matrix: **Water**

Evaluation: ✗ = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
TDS by Gravimetry	E162	1741021	1	6	16.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1739463	1	8	12.5	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1739461	1	1	100.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1735201	1	4	25.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1735202	1	4	25.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1739555	1	5	20.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1741014	1	17	5.8	5.0	✓
Turbidity by Nephelometry	E121	1738580	1	10	10.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1734969	1	4	25.0	5.0	✓
Ammonia by Fluorescence	E298	1735198	1	15	6.6	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1734979	1	1	100.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1734976	1	1	100.0	5.0	✓
Conductivity in Water	E100	1734968	1	15	6.6	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1739462	1	1	100.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1737599	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1734981	1	4	25.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1734977	1	1	100.0	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1734978	1	1	100.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1734974	1	19	5.2	5.0	✓
Reactive Silica by Colourimetry	E392	1738721	1	12	8.3	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1734980	1	1	100.0	5.0	✓
TDS by Gravimetry	E162	1741021	1	6	16.6	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1739463	1	8	12.5	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1739461	1	1	100.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1735201	1	4	25.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1735202	1	4	25.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1739555	1	5	20.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1741014	1	17	5.8	5.0	✓
Turbidity by Nephelometry	E121	1738580	1	10	10.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1735198	1	15	6.6	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1734979	0	1	0.0	5.0	✗
Chloride in Water by IC (Low Level)	E235.Cl-L	1734976	0	1	0.0	5.0	✗
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1739462	0	1	0.0	5.0	✗
Dissolved Metals in Water by CRC ICPMS	E421	1737599	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1734981	1	4	25.0	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1734977	0	1	0.0	5.0	✗
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1734978	0	1	0.0	5.0	✗

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Nitrite in Water by IC (Low Level)	E235.NO2-L	1734974	1	19	5.2	5.0	✓
Reactive Silica by Colourimetry	E392	1738721	1	12	8.3	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1734980	0	1	0.0	5.0	×
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1739463	1	8	12.5	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1739461	0	1	0.0	5.0	×
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1735201	1	4	25.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1735202	1	4	25.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1739555	1	5	20.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry (Low Level)	E160-L ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide by IC (Ultra Trace Level)	E235.Br-U ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC (Low Level)	E235.F-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Trace Level)	E235.NO3-T ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC (Low Level)	E235.SO4-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Total Inorganic Phosphorus is determined colourimetrically after sample has undergone H2SO4 hydrolysis
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved Inorganic Phosphorus is determined colourimetrically after H_2SO_4 hydrolysis of a sample that has been lab or field filtered through a 0.45 micron membrane filter

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Vancouver	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Phosphorus, dissolved organic (0.0014 mg/L) by calculation.	EC377-L.ORG ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved inorganic phosphorus is subtracted from total dissolved phosphorus to determine dissolved organic phosphorus.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
	ALS Environmental - Edmonton			
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Digestion for Total Inorganic Phosphorus in water	EP376 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples undergo H2SO4 hydrolysis.
Digestion for Dissolved Inorganic Phosphorus in water	EP377 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then undergo H2SO4 hydrolysis.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

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QUALITY CONTROL REPORT

Work Order	: **YL2401788**	Page	: 1 of 9
Client	: De Beers Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Weekly	Date Samples Received	: 24-Oct-2024 09:25
PO	: 4100968747	Date Analysis Commenced	: 28-Oct-2024
C-O-C number	: 20241023 01	Issue Date	: 31-Oct-2024 15:24
Sampler	: Lee-Ann Knee		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta
Daniel Shabestani	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Robin Weeks	Team Leader - Metals	Vancouver Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1734967)											
YL2401786-003	Anonymous	pH	----	E108	0.10	pH units	8.11	8.11	0.00%	4%	----
Physical Tests (QC Lot: 1734968)											
YL2401786-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	387	395	2.05%	10%	----
Physical Tests (QC Lot: 1734969)											
YL2401786-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	112	112	0.0895%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	112	112	0.0895%	20%	----
Physical Tests (QC Lot: 1738580)											
VA24C8881-001	Anonymous	Turbidity	----	E121	0.10	NTU	42.0	42.8	1.89%	15%	----
Physical Tests (QC Lot: 1741021)											
VA24C9206-010	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	4400	4540	3.26%	20%	----
Anions and Nutrients (QC Lot: 1734974)											
FJ2403279-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1734976)											
YL2401788-001	SNP-08	Chloride	16887-00-6	E235.Cl-L	2.00	mg/L	1020	1020	0.533%	20%	----
Anions and Nutrients (QC Lot: 1734977)											
YL2401788-001	SNP-08	Fluoride	16984-48-8	E235.F-L	0.200	mg/L	0.844	0.868	0.024	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1734978)											
YL2401788-001	SNP-08	Nitrate (as N)	14797-55-8	E235.NO3-T	0.0600	mg/L	9.57	9.54	0.384%	20%	----
Anions and Nutrients (QC Lot: 1734979)											
YL2401788-001	SNP-08	Bromide	24959-67-9	E235.Br-U	0.100	mg/L	13.9	14.0	0.794%	20%	----
Anions and Nutrients (QC Lot: 1734980)											
YL2401788-001	SNP-08	Sulfate (as SO4)	14808-79-8	E235.SO4-L	1.00	mg/L	516	513	0.654%	20%	----
Anions and Nutrients (QC Lot: 1734981)											
YL2401786-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.100	mg/L	2.24	2.46	9.38%	20%	----
Anions and Nutrients (QC Lot: 1735198)											
FJ2403271-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0083	0.0085	0.0002	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1735201)											
VA24C8716-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.147	0.132	0.015	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1738721)											
VA24C8874-005	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	4.37	4.36	0.003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1739461)											
YL2401788-001	SNP-08	Phosphorus, total inorganic	----	E376-L	0.0010	mg/L	0.623	0.624	0.175%	20%	----
Anions and Nutrients (QC Lot: 1739462)											
YL2401788-001	SNP-08	Phosphorus, dissolved inorganic	----	E377-L	0.0010	mg/L	0.0018	0.0017	0.00003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1739463)											
EO2409794-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0118	0.0115	3.18%	20%	----
Anions and Nutrients (QC Lot: 1739555)											
FC2402977-002	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.100	mg/L	4.33	4.44	2.54%	20%	----
Organic / Inorganic Carbon (QC Lot: 1735202)											
VA24C8716-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	6.05	6.46	6.53%	20%	----
Dissolved Metals (QC Lot: 1737599)											
VA24C8814-001	Anonymous	Calcium, dissolved	7440-70-2	E421	25.0	mg/L	361	396	9.00%	20%	----
		Magnesium, dissolved	7439-95-4	E421	2.50	mg/L	51800	57800	10.9%	20%	----
		Potassium, dissolved	7440-09-7	E421	25.0	mg/L	4500	5020	11.0%	20%	----
		Sodium, dissolved	7440-23-5	E421	25.0	mg/L	26200	28400	8.07%	20%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1734968)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1734969)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1738580)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1741014)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 1741021)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1734974)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1734976)						
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1734977)						
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1734978)						
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	<0.0030	----
Anions and Nutrients (QCLot: 1734979)						
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1734980)						
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1734981)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1735198)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1735201)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1738721)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1738721) - continued						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1739461)						
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1739462)						
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1739463)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1739555)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 1735202)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Dissolved Metals (QCLot: 1737599)						
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1734967)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1734968)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 1734969)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	91.3	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1738580)									
Turbidity	----	E121	0.1	NTU	200 NTU	98.0	85.0	115	----
Physical Tests (QCLot: 1741014)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	102	85.0	115	----
Physical Tests (QCLot: 1741021)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1734974)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.7	90.0	110	----
Anions and Nutrients (QCLot: 1734976)									
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1734977)									
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	1 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 1734978)									
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	2.5 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 1734979)									
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	0.5 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 1734980)									
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1734981)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	102	80.0	120	----
Anions and Nutrients (QCLot: 1735198)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 1735201)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	96.0	75.0	125	----
Anions and Nutrients (QCLot: 1738721)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1738721) - continued									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1739461)									
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	0.05 mg/L	105	80.0	120	----
Anions and Nutrients (QCLot: 1739462)									
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	0.05 mg/L	105	80.0	120	----
Anions and Nutrients (QCLot: 1739463)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 1739555)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	102	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1735202)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 1737599)									
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	106	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	102	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1734974)										
YL2401786-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.506 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1734981)										
YL2401786-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1735198)										
FJ2403271-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.104 mg/L	0.1 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1735201)										
VA24C8716-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.48 mg/L	2.5 mg/L	99.0	70.0	130	----
Anions and Nutrients (QCLot: 1738721)										
VA24C8874-006	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.1 mg/L	10 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1739463)										
EO2409794-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0793 mg/L	0.067 mg/L	118	70.0	130	----
Anions and Nutrients (QCLot: 1739555)										
FC2402980-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1735202)										
VA24C8716-002	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Dissolved Metals (QCLot: 1737599)										
VA24C8814-002	Anonymous	Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 20241023 01

Report To	Contact and company name below will appear on the final report
Company:	DeBeers Gahcho Kué
Contact:	Dave Ott/Michelle Burger
Phone:	867-679-5812/5814
	Company address below will appear on the final report
Street:	5120 49th Street Suite 300
City/Province:	Yellowknife, NT
Postal Code:	X1A 3S8

Report Format / Distribution

Select Report Format:
Quality Control (QC) Report with Report

Select Distribution:
Email 1 or Fax: Environment.GahchoKue@debeersgroup.com
Email 2: Dave.Ott@debeersgroup.com
Email 3: Michelle.Burger@debeersgroup.com

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days): 4 day [P4-20%]; 3 day [P3-25%]; 2 day [P2-50%]

EMERGENCY: 1 Business day [E - 100%]; Same Day. Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]

Date and time Required for all E&P TA: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To	Yes	No
	Copy of Invoice with Report	Yes	No
Company:	DeBeers Group		
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8		

Invoice Distribution

Select Invoice Distribution:
Email 1 or Fax: ap.invoices@debeersgroup.com
Email 2: Mason.Elwood@debeersgroup.com

Project Information

ALS Account # / Quote #:	
Job #:	SNP-08 Weekly
PO / AFE:	4100968747
LSD:	

Oil and Gas Required Fields (client use)

Approver ID:	Cost Center:
GL Account:	Routing Code:
Activity Code:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler: L. Knee

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical Parameters	Major Ions	Total Nutrients (P)	Dissolved Nutrients	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	SNP-08	23-Oct-24	12:08	Water	4	R	R	R	R		

Environmental Division
Yellowknife
Work Order Reference
YL2401788

Telephone : +1 867 873 5593

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

Are samples for human drinking water use?

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
3.3	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: [redacted]	Date: 23-Oct-24	Time:	Received by:	Date: Oct 24/24	Time: 9:25	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY NA-FM-0026e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241023- 01

Date: October 23, 2024

	23-Oct-24				
	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date
	SNP-08				
	Sample Name	Sample Name	Sample Name	Sample Name	Sample Name
Physical Parameters **Rush (Y/N)**	N				
Conductivity	X				
pH	X				
Total Suspended Solids (Ultra Low)	X				
Turbidity	X				
Major Ions **Rush (Y/N)**	N				
Alkalinity, Bicarbonate (as CaCO3)	X				
Alkalinity, Carbonate (as CaCO3)	X				
Alkalinity, Hydroxide (as CaCO3)	X				
Alkalinity, Total (as CaCO3)	X				
Hardness (as CaCO3)	X				
Calcium	X				
Magnesium	X				
Potassium	X				
Sodium	X				
Chloride (Cl)	X				
Fluoride (F)	X				
Total Dissolved Solids (SNP-07)	X				
Sulphate (SO4)	X				
Reactive Silicate	X				
Nutrients **Rush (Y/N)**	N				
Lab to Filter Dissolved Nutrients	X				
Ammonia, Total (as N)	X				
Nitrate and Nitrite (as N)	X				
Nitrate (as N)	X				
Nitrite (as N)	X				
Total Kjeldahl Nitrogen	X				
Orthophosphate-Dissolved (as P)	X				
Phosphorus (P)-Total Dissolved	X				
Phosphorus (P)-Total	X				
Phosphorus (P)-Dissolved Organic	X				
Phosphorus (P)-Total Inorganic	X				
Phosphorus (P)-Dissolved Inorganic	X				
Total Organic Carbon	X				
Aggregate Organics **Rush (Y/N)**					
Biochemical Oxygen Demand (SNP-07)					
Oil and Grease (SNP-07)					
Metals **Rush (Y/N)**					
Lab to Filter Dissolved Metals					
Total Metals (preserved with HNO3)					
Dissolved Metals (not preserved)					

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium,

Speciated Metals **Rush (Y/N)**					
Hydrocarbons and VOCs **Rush (Y/N)**					
BTEX, F1-F4					
Total Petroleum Hydrocarbons					
Bacteria **Rush (Y/N)**					
Total Coliforms, Fecal Coliforms, and E. coli					
Radionuclides (SNP-08/09/10) **Rush (Y/N)**					
Uranium and Thorium					
Radium-226 (if U & Th leach to grndwtr)					

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CERTIFICATE OF ANALYSIS

Work Order	: **YL2401802**		
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Edmonton
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife Northwest Territories Canada X1A 1P8	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Weekly	Date Samples Received	: 29-Oct-2024 09:47
PO	: 4100968747	Date Analysis Commenced	: 31-Oct-2024
C-O-C number	: 20241028/01	Issue Date	: 07-Nov-2024 11:55
Sampler	: Lee-Ann Knee		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Daniel Shabestani	Lab Assistant	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
NTU	nephelometric turbidity units
µS/cm	microsiemens per centimetre
pH units	pH units
-	no units

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
SFP	Sample was filtered and preserved at the laboratory.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	28-Oct-2024 08:12	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401802-001	----	----	----	----
					Result	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	110	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	110	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	3960	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	1260	----	----	----	----
pH	----	E108/VA	0.10	pH units	7.92	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	2740	----	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	22.1	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	18.1	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	1.32	----	----	----	----
Bromide	24959-67-9	E235.Br-U/VA	0.0500	mg/L	13.1	----	----	----	----
Chloride	16887-00-6	E235.Cl-L/VA	0.50	mg/L	986	----	----	----	----
Fluoride	16984-48-8	E235.F-L/VA	0.020	mg/L	0.886	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	1.61	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-T/VA	0.0030	mg/L	7.73	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/VA	0.0032	mg/L	7.94	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0050	mg/L	0.205	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP-08	----	----	----	----
				Client sampling date / time	28-Oct-2024 08:12	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401802-001	----	----	----	----
					Result	----	----	----	----
Anions and Nutrients									
Phosphorus, dissolved inorganic	----	E377-L/EO	0.0010	mg/L	0.0011	----	----	----	----
Phosphorus, dissolved organic	----	EC377-L.ORG/EO	0.0020	mg/L	0.0023	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0509	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0034 SFP	----	----	----	----
Phosphorus, total inorganic	----	E376-L/EO	0.0010	mg/L	0.0524	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	12.4	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4-L/VA	0.300	mg/L	499	----	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	2.63	----	----	----	----
Dissolved Metals									
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	371	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	79.8	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	7.93	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	361	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Laboratory	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2401802**	Page	: 1 of 12
Client	: **De Beers Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Weekly	Date Samples Received	: 29-Oct-2024 09:47
PO	: 4100968747	Issue Date	: 07-Nov-2024 12:11
C-O-C number	: 20241028/01		
Sampler	: Lee-Ann Knee		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP-08	E298	28-Oct-2024	02-Nov-2024	28 days	5 days	✓	04-Nov-2024	28 days	8 days	✓
Anions and Nutrients : Bromide by IC (Ultra Trace Level)										
HDPE SNP-08	E235.Br-U	28-Oct-2024	01-Nov-2024	28 days	4 days	✓	01-Nov-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SNP-08	E235.Cl-L	28-Oct-2024	01-Nov-2024	28 days	4 days	✓	01-Nov-2024	28 days	4 days	✓
Anions and Nutrients : Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved) SNP-08	E377-L	28-Oct-2024	31-Oct-2024	3 days	3 days	✓	31-Oct-2024	28 days	0 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE SNP-08	E378-U	28-Oct-2024	31-Oct-2024	3 days	4 days	✗ EHT	31-Oct-2024	3 days	4 days	✗ EHT
Anions and Nutrients : Fluoride in Water by IC (Low Level)										
HDPE SNP-08	E235.F-L	28-Oct-2024	01-Nov-2024	28 days	4 days	✓	01-Nov-2024	28 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC (Trace Level)										
HDPE SNP-08	E235.NO3-T	28-Oct-2024	01-Nov-2024	3 days	4 days	✗ EHT	01-Nov-2024	3 days	4 days	✗ EHT

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP-08	E235.NO2-L	28-Oct-2024	01-Nov-2024	3 days	4 days	✗ EHT	01-Nov-2024	3 days	4 days	✗ EHT
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP-08	E392	28-Oct-2024	----	----	----		01-Nov-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE										
SNP-08	E235.SO4-L	28-Oct-2024	01-Nov-2024	28 days	4 days	✓	01-Nov-2024	28 days	4 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (lab preserved)										
SNP-08	E375-U	28-Oct-2024	04-Nov-2024	3 days	7 days	✗ EHT	04-Nov-2024	28 days	0 days	✓
Anions and Nutrients : Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-08	E376-L	28-Oct-2024	31-Oct-2024	28 days	3 days	✓	31-Oct-2024	28 days	3 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
SNP-08	E318	28-Oct-2024	02-Nov-2024	28 days	5 days	✓	04-Nov-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid)										
SNP-08	E372-S	28-Oct-2024	04-Nov-2024	28 days	7 days	✓	04-Nov-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SNP-08	E421	28-Oct-2024	04-Nov-2024	180 days	7 days	✓	04-Nov-2024	180 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP-08	E355-L	28-Oct-2024	02-Nov-2024	28 days	5 days	✓	02-Nov-2024	28 days	5 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE SNP-08	E290	28-Oct-2024	01-Nov-2024	14 days	4 days	✓	01-Nov-2024	14 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP-08	E100	28-Oct-2024	01-Nov-2024	28 days	4 days	✓	01-Nov-2024	28 days	4 days	✓
Physical Tests : pH by Meter										
HDPE SNP-08	E108	28-Oct-2024	01-Nov-2024	0.25 hrs	88 hrs	✗ EHTR-FM	01-Nov-2024	0.25 hrs	95 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SNP-08	E162	28-Oct-2024	----	----	----		04-Nov-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP-08	E160-L	28-Oct-2024	----	----	----		04-Nov-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE SNP-08	E121	28-Oct-2024	----	----	----		05-Nov-2024	3 days	8 days	✗ EHT

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1744149	1	12	8.3	5.0	✓
Ammonia by Fluorescence	E298	1746507	1	19	5.2	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1744160	1	3	33.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1744158	1	3	33.3	5.0	✓
Conductivity in Water	E100	1744150	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1742041	1	3	33.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1748361	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1744163	1	15	6.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1744159	1	3	33.3	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1744157	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1744155	1	12	8.3	5.0	✓
pH by Meter	E108	1744148	1	12	8.3	5.0	✓
Reactive Silica by Colourimetry	E392	1746292	1	13	7.6	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1744161	1	3	33.3	5.0	✓
TDS by Gravimetry	E162	1748646	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1747976	1	18	5.5	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1742040	1	3	33.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1746505	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1746506	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1747978	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1751090	1	7	14.2	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1744149	1	12	8.3	5.0	✓
Ammonia by Fluorescence	E298	1746507	1	19	5.2	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1744160	1	3	33.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1744158	1	3	33.3	5.0	✓
Conductivity in Water	E100	1744150	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1742041	1	3	33.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1748361	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1744163	1	15	6.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1744159	1	3	33.3	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1744157	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1744155	1	12	8.3	5.0	✓
pH by Meter	E108	1744148	1	12	8.3	5.0	✓
Reactive Silica by Colourimetry	E392	1746292	1	13	7.6	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1744161	1	3	33.3	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
TDS by Gravimetry	E162	1748646	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1747976	1	18	5.5	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1742040	1	3	33.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1746505	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1746506	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1747978	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1748638	1	12	8.3	5.0	✓
Turbidity by Nephelometry	E121	1751090	1	7	14.2	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1744149	1	12	8.3	5.0	✓
Ammonia by Fluorescence	E298	1746507	1	19	5.2	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1744160	1	3	33.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1744158	1	3	33.3	5.0	✓
Conductivity in Water	E100	1744150	1	9	11.1	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1742041	1	3	33.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1748361	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1744163	1	15	6.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1744159	1	3	33.3	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1744157	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1744155	1	12	8.3	5.0	✓
Reactive Silica by Colourimetry	E392	1746292	1	13	7.6	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1744161	1	3	33.3	5.0	✓
TDS by Gravimetry	E162	1748646	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1747976	1	18	5.5	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1742040	1	3	33.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1746505	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1746506	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1747978	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1748638	1	12	8.3	5.0	✓
Turbidity by Nephelometry	E121	1751090	1	7	14.2	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1746507	1	19	5.2	5.0	✓
Bromide by IC (Ultra Trace Level)	E235.Br-U	1744160	1	3	33.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1744158	1	3	33.3	5.0	✓
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L	1742041	1	3	33.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1748361	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1744163	1	15	6.6	5.0	✓
Fluoride in Water by IC (Low Level)	E235.F-L	1744159	1	3	33.3	5.0	✓
Nitrate in Water by IC (Trace Level)	E235.NO3-T	1744157	1	6	16.6	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Nitrite in Water by IC (Low Level)	E235.NO2-L	1744155	1	12	8.3	5.0	✓
Reactive Silica by Colourimetry	E392	1746292	1	13	7.6	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	1744161	1	3	33.3	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1747976	1	18	5.5	5.0	✓
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L	1742040	1	3	33.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1746505	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1746506	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1747978	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry (Low Level)	E160-L ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide by IC (Ultra Trace Level)	E235.Br-U ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC (Low Level)	E235.F-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Trace Level)	E235.NO3-T ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC (Low Level)	E235.SO4-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E376-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Total Inorganic Phosphorus is determined colourimetrically after sample has undergone H2SO4 hydrolysis
Dissolved Inorganic Phosphorus by Colourimetry (0.001 mg/L)	E377-L ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved Inorganic Phosphorus is determined colourimetrically after H_2SO_4 hydrolysis of a sample that has been lab or field filtered through a 0.45 micron membrane filter

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Vancouver	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Phosphorus, dissolved organic (0.0014 mg/L) by calculation.	EC377-L.ORG ALS Environmental - Edmonton	Water	APHA 4500-P PHOSPHORUS	Dissolved inorganic phosphorus is subtracted from total dissolved phosphorus to determine dissolved organic phosphorus.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
	ALS Environmental - Edmonton			
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Digestion for Total Inorganic Phosphorus in water	EP376 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples undergo H2SO4 hydrolysis.
Digestion for Dissolved Inorganic Phosphorus in water	EP377 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then undergo H2SO4 hydrolysis.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

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QUALITY CONTROL REPORT

Work Order	: **YL2401802**	Page	: 1 of 10
Client	: De Beers Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Mason Elwood	Account Manager	: Oliver Gregg
Address	: Gahcho Kue Project Suite 300, 5120 49th Street Yellowknife NT Canada X1A 1P8	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867-679-5814	Telephone	: 1 867 445 7143
Project	: SNP-08 Weekly	Date Samples Received	: 29-Oct-2024 09:47
PO	: 4100968747	Date Analysis Commenced	: 31-Oct-2024
C-O-C number	: 20241028/01	Issue Date	: 07-Nov-2024 11:58
Sampler	: Lee-Ann Knee		
Site	: Gahcho Kue		
Quote number	: YL24-DEBC100-002 - GK		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Alex Drake	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta
Daniel Shabestani	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Monica Ko	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1744148)											
VA24C9302-001	Anonymous	pH	----	E108	0.10	pH units	7.97	7.98	0.125%	4%	----
Physical Tests (QC Lot: 1744149)											
VA24C9302-001	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	168	169	0.237%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	168	169	0.237%	20%	----
Physical Tests (QC Lot: 1744150)											
VA24C9302-001	Anonymous	Conductivity	----	E100	2.0	µS/cm	355	357	0.562%	10%	----
Physical Tests (QC Lot: 1748646)											
VA24C9446-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	1050	1030	2.40%	20%	----
Physical Tests (QC Lot: 1751090)											
FJ2403329-001	Anonymous	Turbidity	----	E121	0.10	NTU	32.2	32.7	1.54%	15%	----
Anions and Nutrients (QC Lot: 1742040)											
YL2401800-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0010	mg/L	0.0105	0.0104	1.15%	20%	----
Anions and Nutrients (QC Lot: 1742041)											
YL2401800-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0010	mg/L	0.0018	0.0012	0.0007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1744155)											
VA24C9302-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1744157)											
YL2401800-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	0.0600	mg/L	18.3	18.5	1.20%	20%	----
Anions and Nutrients (QC Lot: 1744158)											
YL2401800-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	2.00	mg/L	572	579	1.29%	20%	----
Anions and Nutrients (QC Lot: 1744159)											
YL2401800-001	Anonymous	Fluoride	16984-48-8	E235.F-L	0.200	mg/L	0.280	0.289	0.009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1744160)											
YL2401800-001	Anonymous	Bromide	24959-67-9	E235.Br-U	0.100	mg/L	5.32	5.15	3.32%	20%	----
Anions and Nutrients (QC Lot: 1744161)											
YL2401800-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	1.00	mg/L	80.7	81.2	0.583%	20%	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1744163)											
VA24C9461-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1746292)											
VA24C9052-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1746505)											
VA24C8876-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	0.052	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1746507)											
VA24C8876-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1747976)											
EO2409812-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.169	0.168	0.249%	20%	----
Anions and Nutrients (QC Lot: 1747978)											
FC2402988-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.378	0.370	2.27%	20%	----
Organic / Inorganic Carbon (QC Lot: 1746506)											
VA24C8876-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.88	2.00	0.12	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1748361)											
VA24C9679-001	Anonymous	Calcium, dissolved	7440-70-2	E421	0.100	mg/L	134	140	4.43%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	60.4	62.5	3.47%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.100	mg/L	23.1	23.4	1.22%	20%	----
		Sodium, dissolved	7440-23-5	E421	0.100	mg/L	667	677	1.52%	20%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1744149)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1744150)						
Conductivity	----	E100	1	µS/cm	1.1	----
Physical Tests (QCLot: 1748638)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 1748646)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1751090)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 1742040)						
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1742041)						
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1744155)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1744157)						
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	<0.0030	----
Anions and Nutrients (QCLot: 1744158)						
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1744159)						
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1744160)						
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1744161)						
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1744163)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1746292)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1746292) - continued						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1746505)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1746507)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1747976)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1747978)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 1746506)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Dissolved Metals (QCLot: 1748361)						
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1744148)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1744149)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	96.9	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1744150)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	98.6	90.0	110	----
Physical Tests (QCLot: 1748638)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	98.2	85.0	115	----
Physical Tests (QCLot: 1748646)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	107	85.0	115	----
Physical Tests (QCLot: 1751090)									
Turbidity	----	E121	0.1	NTU	200 NTU	100.0	85.0	115	----
Anions and Nutrients (QCLot: 1742040)									
Phosphorus, total inorganic	----	E376-L	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1742041)									
Phosphorus, dissolved inorganic	----	E377-L	0.001	mg/L	0.05 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 1744155)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.8	90.0	110	----
Anions and Nutrients (QCLot: 1744157)									
Nitrate (as N)	14797-55-8	E235.NO3-T	0.003	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1744158)									
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1744159)									
Fluoride	16984-48-8	E235.F-L	0.01	mg/L	1 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 1744160)									
Bromide	24959-67-9	E235.Br-U	0.005	mg/L	0.5 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 1744161)									
Sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1744163)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	99.2	80.0	120	----
Anions and Nutrients (QCLot: 1746292)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1746292) - continued									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1746505)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	96.4	75.0	125	----
Anions and Nutrients (QCLot: 1746507)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1747976)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 1747978)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1746506)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	97.5	80.0	120	----
Dissolved Metals (QCLot: 1748361)									
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	104	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	110	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	111	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1742040)										
YL2401801-001	Anonymous	Phosphorus, total inorganic	----	E376-L	0.0576 mg/L	0.05 mg/L	115	70.0	130	----
Anions and Nutrients (QCLot: 1742041)										
YL2401801-001	Anonymous	Phosphorus, dissolved inorganic	----	E377-L	0.0428 mg/L	0.05 mg/L	85.6	70.0	130	----
Anions and Nutrients (QCLot: 1744155)										
VA24C9302-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.503 mg/L	0.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1744157)										
YL2401801-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-T	49.9 mg/L	50 mg/L	99.8	75.0	125	----
Anions and Nutrients (QCLot: 1744158)										
YL2401801-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	2000 mg/L	2000 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1744159)										
YL2401801-001	Anonymous	Fluoride	16984-48-8	E235.F-L	20.2 mg/L	20 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1744160)										
YL2401801-001	Anonymous	Bromide	24959-67-9	E235.Br-U	10.6 mg/L	10 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1744161)										
YL2401801-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4-L	1990 mg/L	2000 mg/L	99.6	75.0	125	----
Anions and Nutrients (QCLot: 1744163)										
VA24C9461-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0346 mg/L	0.03 mg/L	115	70.0	130	----
Anions and Nutrients (QCLot: 1746292)										
VA24C9052-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	9.84 mg/L	10 mg/L	98.4	75.0	125	----
Anions and Nutrients (QCLot: 1746505)										
VA24C8876-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.48 mg/L	2.5 mg/L	99.4	70.0	130	----
Anions and Nutrients (QCLot: 1746507)										
VA24C8876-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1747976)										
EO2409929-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1747978)										
FC2402991-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1746506)										
VA24C8876-002	Anonymous	Carbon, total organic [TOC]	----	E355-L	4.71 mg/L	5 mg/L	94.2	70.0	130	----
Dissolved Metals (QCLot: 1748361)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1748361) - continued										
VA24C9679-002	Anonymous	Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 20241028/ 01

Report To	Contact and company name below will appear on the final report
Company:	DeBeers Gahcho Kué
Contact:	Dave Ott/Michelle Burger
Phone:	867-679-5812/5814
	Company address below will appear on the final report
Street:	5120 49th Street Suite 300
City/Province:	Yellowknife, NT
Postal Code:	X1A 3S8

Report Format / Distribution

Select Report Format: Quality Control (QC) Report with Report

Select Distribution:

Email 1 or Fax:	Environment.GahchoKue@debeersgroup.com
Email 2	Dave.Ott@debeersgroup.com
Email 3	Michelle.Burger@debeersgroup.com

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]

PRIORITY (Business Days): 4 day [P4-20%]; 3 day [P3-25%]; 2 day [P2-50%]

EMERGENCY: 1 Business day [E - 100%]; Same Day. Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]

Date and time Required for all E&P TA: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To	Yes	No
	Copy of Invoice with Report	Yes	No
Company:	DeBeers Group		
Contact:	Mason Elwood 5120, 49St Yellowknife, NT suite 300 X1A 3S8		

Invoice Distribution

Select Invoice Distribution:

Email 1 or Fax	ap.invoices@debeersgroup.com
Email 2	Mason.Elwood@debeersgroup.com

Project Information

ALS Account # / Quote #:	
Job #:	SNP-08 Weekly
PO / AFE:	4100968747
LSD:	

Oil and Gas Required Fields (client use)

Approver ID:	Cost Center:
GL Account:	Routing Code:
Activity Code:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler: L. Knee

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical Parameters	Major Ions	Total Nutrients (P)	Dissolved Nutrients	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	SNP-08	28-Oct-24	8:12	Water	4	R	R	R	R		

Environmental Division
Yellowknife
Work Order Reference
YL2401802
Telephone : +1 867 873 5593

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

Are samples for human drinking water use?

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please lab filter for any requested dissolved parameters. Refer to attached Analytical Request Form for parameters to be analyzed.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
4.7	

SHIPMENT RELEASE (client use)

Released by: L.Knee Date: 28-Oct-24 Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Oct 29/24 Time: 9:47

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0325e v09 Front04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

De Beers Canada - Gahcho Kué Mine
ANALYTICAL REQUEST FORM

Chain of Custody #: 20241028/ 01

Date: October 28, 2024

	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date
	28-Oct-24				
	Sample Name	Sample Name	Sample Name	Sample Name	Sample Name
	SNP-08				
Physical Parameters Rush (Y/N)	N				
Conductivity	X				
pH	X				
Total Suspended Solids (Ultra Low)	X				
Turbidity	X				
Major Ions Rush (Y/N)	N				
Alkalinity, Bicarbonate (as CaCO3)	X				
Alkalinity, Carbonate (as CaCO3)	X				
Alkalinity, Hydroxide (as CaCO3)	X				
Alkalinity, Total (as CaCO3)	X				
Hardness (as CaCO3)	X				
Calcium	X				
Magnesium	X				
Potassium	X				
Sodium	X				
Chloride (Cl)	X				
Fluoride (F)	X				
Total Dissolved Solids (SNP-07)	X				
Sulphate (SO4)	X				
Reactive Silicate	X				
Nutrients Rush (Y/N)	N				
Lab to Filter Dissolved Nutrients	X				
Ammonia, Total (as N)	X				
Nitrate and Nitrite (as N)	X				
Nitrate (as N)	X				
Nitrite (as N)	X				
Total Kjeldahl Nitrogen	X				
Orthophosphate-Dissolved (as P)	X				
Phosphorus (P)-Total Dissolved	X				
Phosphorus (P)-Total	X				
Phosphorus (P)-Dissolved Organic	X				
Phosphorus (P)-Total Inorganic	X				
Phosphorus (P)-Dissolved Inorganic	X				
Total Organic Carbon	X				
Aggregate Organics Rush (Y/N)					
Biochemical Oxygen Demand (SNP-07)					
Oil and Grease (SNP-07)					
Metals Rush (Y/N)					
Lab to Filter Dissolved Metals					
Total Metals (preserved with HNO3)					
Dissolved Metals (not preserved)					

Metals includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Cesium, Cobalt, Copper, Chromium, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Rubidium, Selenium, Silver, Strontium, Thallium, Titanium, Uranium, Vanadium, Zinc.

Speciated Metals Rush (Y/N)					
Hydrocarbons and VOCs Rush (Y/N)					
BTEX, F1-F4					
Total Petroleum Hydrocarbons					
Bacteria Rush (Y/N)					
Total Coliforms, Fecal Coliforms, and E. coli					
Radionuclides (SNP-08/09/10) Rush (Y/N)					
Uranium and Thorium					
Radium-226 (if U & Th leach to grndwtr)					