



REPORT

**Environmental Compliance Approval Quarterly
Monitoring Report (May to July 2024)**

McCarthy Quarry

Submitted to:

Chris Hyde

Ontario Ministry of Environment, Conservation and Parks
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Submitted by:

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Distribution List

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ECA No. 7737-BH6QEA

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1.0 INTRODUCTION

WSP Canada Inc. (WSP) was retained by QBJR Aggregates Inc./Green Infrastructure Partners Inc. (Green) to prepare a quarterly monitoring report for the McCarthy Quarry located in the Township of Ramara, County of Simcoe (Figure 1). The preparation of a quarterly monitoring report is a requirement of the Environmental Compliance Approval (ECA) No. 7737-BH6QEA (the 'ECA') issued on October 22, 2019. A copy of the ECA is provided in Appendix A. The following report is intended to fulfill the requirements of Section 8 (4) of the ECA and documents the results of the monitoring program activities described in Section 6 of the ECA for the period between May and July 2024.

2.0 BACKGROUND

The dewatering activities at the McCarthy Quarry in 2024 are regulated under Permit to Take Water (PTTW) No. 1603-BKTPQH, issued on January 31, 2020 and expiring on January 31, 2025. Under PTTW No. 1603-BKTPQH QBJR/Green is permitted to pump water from the quarry sump at a maximum rate of 4,545 L/min (76 L/sec). The quarry discharge monitoring plan and effluent quality limits are established in the ECA.

The McCarthy Quarry dewatering system includes a sump originally located in the northwest corner of the quarry floor which collects groundwater and surface water (hereafter referred to as "quarry discharge") accumulating at the base of the quarry. The sump is equipped with a pump which is rated for a maximum discharge rate of up to 2,100 L/min (35 L/sec) and is attached to a discharge line. On April 11, 2023, McCarthy staff replaced the pump with a rental from Sunbelt following issues with the previous pump. This pump is rated for a maximum discharge rate of up to 1417 L/min (24 L/sec) and is attached to the discharge line. Water is pumped from the quarry floor up the quarry face via the discharge line to a pipeline that directs the water to a 14,000 m³ settling pond (Figure 1). QBJR/Green finalized set-up of a new sump location in the southeast corner of the quarry floor in March 2022 and started utilized this new sump location for pumping in April 2022. The initial sump location was creating operational issues as QBJR/Green was not able to properly dewater the southern portion of the quarry. In addition, the previous set up was very inefficient due to the length of piping required from the sump to the horse-shoe shaped settling pond. The new sump location is shown on the attached Figure 1; QBJR/Green has also adjusted the discharge piping that runs from the pump to the horse-shoe shaped settling pond. No changes were made to the discharge pond. The settling pond is equipped with a Hickenbottom control structure via which the water discharges to the roadside ditch along Concession Road 1. The water flows eastward along the north side of Concession Road 1 to a municipal drain and eventually discharges to the Talbot River approximately 1.1 km downstream of the Quarry, which eventually discharges into Lake Simcoe.

3.0 QUARRY DISCHARGE MONITORING PLAN

The technical requirements of the quarry discharge monitoring plan are listed in Section 4 (Effluent [quality] Limits), Section 5 (Effluent – Visual Observations), and Section 6 (Monitoring and Recording) of the ECA. The monitoring requirements consist of:

- Weekly monitoring of the effluent quality (Total Suspended Solids [TSS], oil and grease, phenolics [4AAP] and pH) at the outfall of the settling pond (labelled as SWM POND on Figure 1); and
- Semi-annual monitoring of effluent quality at three locations: 1) the SWM Pond outfall; 2) the culvert along Concession Road 1 at the McCarthy property; and 3) 260 m north of the intersection of Concession Road 1 and the Mara Eldon Boundary Road. The parameters required for semi-annual water quality monitoring (as

listed in Table 3 of the ECA) include TSS, copper, lead, nickel, zinc, arsenic, oil and grease, phenolics (4AAP), hardness (as CaCO₃), alkalinity(as CaCO₃), conductivity, pH, fluoride, chloride, nitrate (as N), nitrite (as N), sulphate, calcium, magnesium, sodium, potassium, ammonia (as N), dissolved organic carbon, iron, total Kjeldahl nitrogen, phosphorus (total), cadmium, chromium, manganese, anions (sum), cations (sum) and total dissolved solids.

The weekly quarry discharge quality sampling was conducted by McCarthy staff directly from the discharge outfall from the settling pond. However, due to a lack of discharge from the outfall during this period caused from minimal dewatering no samples were collected by McCarthy staff due to insufficient water discharging from the outflow pipe from the pond. It was also noted by WSP staff during this period that water was not observed discharging from the outfall pipe during the monthly visits to site. The weekly water quality samples when collected are sent to Bureau Veritas Laboratories of Mississauga, Ontario for analysis. These weekly water quality results when collected are compared to the daily concentration limits of the ECA (Table 1). A monthly average is calculated from the weekly water quality results and compared to the monthly concentration limits of the ECA (Table 2).

No weekly water quality sample were collected from the McCarthy Pond location during the period of May to July 2024 due to limited discharge from the outfall at the pond caused by minimal dewatering during this period resulting in the water level in the settling pond not reaching high enough to allow for water to exit through the outfall of the settling pond.

4.0 MONITORING RESULTS

All laboratory certificates of analysis for the May to July 2024 monitoring period for the weekly and semi-annual monitoring events are provided in Appendix B. Results of the quarry discharge sample analyses are summarized below:

- The daily discharge rate between May to July 2024 was below the permitted rate of 4,545 L/min (76 L/sec) (Table 4).
- No weekly samples were collected by McCarthy staff due to limited discharge from the outfall at the pond caused by minimal dewatering during this period resulting in the water level in the settling pond not reaching high enough to allow water from the pond to exit through the outfall pipe.
- The semi-annual surface water sampling results were below the PWQO (Table 3) with the exception of an exceedance of Total Iron at SW1. It is to be noted that exceedances in Total Iron have been encountered in the past during sampling events and is likely explained by entrained sediment in the sample.

5.0 CLOSURE

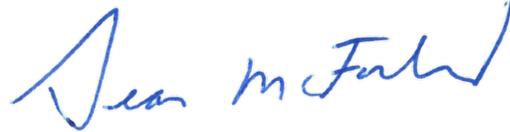
We trust this report meets your current requirements. Should you have any questions please do not hesitate to contact the undersigned.

Signature Page

WSP Canada Inc.



Colin Imrie, G.I.T.
Geoscientist-in-Training



Sean McFarland, Ph.D., P.Geol.
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CSI/SM/lb

[https://wsponlinecan.sharepoint.com/sites/ca-ca00236338620/shared documents/06. deliverables/eca may to july 2024/ca0023633.8620-r-rev0-eca quarterly report - 30august2024 final.docx](https://wsponlinecan.sharepoint.com/sites/ca-ca00236338620/shared%20documents/06.%20deliverables/eca%20may%20to%20july%202024/ca0023633.8620-r-rev0-eca%20quarterly%20report%20-%2030august2024%20final.docx)

Tables

Table 1: McCarthy Pond Weekly Water Quality Results (May to July 2024)

	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Daily Concentration Limit ²	McCarthy Quarry		
Sample ID					Pond		
Date					-	-	-
pH	pH	n/a		6.0-9.5	-	-	-
Total Suspended Solids	mg/L	1		30	-	-	-
Total Oil and Grease	mg/L	0.5	Note 3	30	-	-	-
Phenols (4AAP)	mg/L	<0.0010		0.04	-	-	-

Notes

1. Provincial Water Quality Objectives (PWQO); shaded cells denote PWQO exceedance; some PWQOs are dependent on other water quality parameters hence the range in guideline values, refer to PWQO notes.
2. Daily Concentration Limit; bolded values denote exceedances in the Environmental Compliance Approval (ECA) daily concentration limits.
3. The PWQO for Oil and Grease indicates that oil or petrochemicals should not be present in concentrations that: can be detected as a visible film, sheen or discoloration on the surface, can be detected by odour, can cause tainting of edible organisms, can form detectable deposits on shorelines and bottom sediments.
4. Results that are preceded by "<" denote concentrations that are below the laboratory Reportable Detection Limit (RDL).

Table 2: McCarthy Pond Monthly Water Quality Results (May to July 2024)

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Monthly Concentration Limit ²	McCarthy Quarry		
					Pond		
Date					May	June	July
Total Suspended Solids	mg/L	1		15	-	-	-
Total Oil and Grease	mg/L	0.5	Note 3	15	-	-	-
Phenols (4AAP)	mg/L	<0.0010		0.02	-	-	-

Notes

1. Provincial Water Quality Objectives (PWQO); shaded cells denote PWQO exceedance; some PWQOs are dependent on other water quality parameters hence the range in guideline values, refer to PWQO notes.
2. Monthly Concentration Limit; bolded values denote exceedances in the Environmental Compliance Approval (ECA) monthly concentration limits.
3. The PWQO for Oil and Grease indicates that oil or petrochemicals should not be present in concentrations that: can be detected as a visible film, sheen or discoloration on the surface, can be detected by odour, can cause tainting of edible organisms, can form detectable deposits on shorelines and bottom sediments.
4. Results that are preceded by "<" denote concentrations that are below the laboratory Reportable Detection Limit (RDL).

Table 3: McCarthy Semi-Annual Water Quality Monitoring Results

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Interim PWQO ²	ECA Effluent Limits	McCarthy Quarry		
						Pond	SW1	SW2
Date						16-May-24	16-May-24	16-May-24
Field Measured Parameters								
Conductivity	µS/cm					650	960	608
pH	pH	n/a	6.5-8.5		6.0-9.5	8.1	7.76	7.7
Temperature	°C	n/a				19.8	19.6	19.0
Calculated Parameters								
Hardness (CaCO3)	mg/L	1.0				230	340	330
Inorganics								
Total Ammonia-N	mg/L	0.050				<0.050	0.13	<0.050
Conductivity	ms/cm	0.001				0.74	0.96	0.580
Total Dissolved Solids	mg/L	10				450	575	345
Fluoride (F-)	mg/L	0.10				0.27	0.21	<0.10
Total Kjeldahl Nitrogen (TKN)	mg/L	0.10				0.37	0.58	0.34
Dissolved Organic Carbon	mg/L	0.50				6.0	11.0	7.9
pH	pH	N/A	6.5-8.5		6.0-9.5	8.04	8.07	8.03
Phenols-4AAP	mg/L	0.0010	0.001		0.04	<0.0010	<0.0010	<0.0010
Total Phosphorus	mg/L	0.020		0.03 ^{5b}		0.010	0.012	0.012
Total Suspended Solids	mg/L	10			30	<10	<10	<10
Dissolved Sulphate (SO4)	mg/L	1				130	86	20
Alkalinity (Total as CaCO3)	mg/L	1.0				83	270	300
Dissolved Chloride (Cl)	mg/L	1				91	100	3
Nitrite (N)	mg/L	0.010				<0.010	0.111	<0.010
Nitrate (N)	mg/L	0.10				<0.10	0.24	<0.10
Petroleum Hydrocarbons								
Total Oil & Grease	mg/L	0.50	Note 3		30	<0.50	<0.50	1.6
Metals								
Total Arsenic (As)	ug/L	1	100	5		<1.0	<1.0	<1.0
Total Cadmium (Cd)	ug/L	0.09	0.2	0.1-0.5 ^{5d}		<0.09	<0.09	<0.090
Dissolved Calcium (Ca)	mg/L	0.05				52	110	120
Total Calcium (Ca)	ug/L	200				51000	120000	110000
Total Chromium (Cr)	ug/L	5	1-89 ^{5e}			<5.0	<5.0	<5.0
Total Copper (Cu)	ug/L	0.9	5	1-5 ^{5f}		1.3	1.5	1.8
Total Iron (Fe)	ug/L	100	300			140	340	140
Total Lead (Pb)	ug/L	0.5	5-25 ^{5g}	1-5 ^{5h}		<0.50	<0.50	<0.50
Dissolved Magnesium (Mg)	mg/L	0.05				23	18	20.0
Total Magnesium (Mg)	ug/L	50				22000	18000	18000
Total Manganese (Mn)	ug/L	2				22	52	51
Total Nickel (Ni)	ug/L	1	25			<1.0	1.4	<1.0
Dissolved Potassium (K)	mg/L	1				6.5	4.2	1.4
Total Potassium (K)	ug/L	200				6300	4500	1300
Dissolved Sodium (Na)	mg/L	0.5				59	52	6.1
Total Sodium (Na)	ug/L	100				55000	53000	5100
Total Zinc (Zn)	ug/L	5	30	20		<5.0	<5.0	<5.0
<p>1. Provincial Water Quality Objectives (PWQO); shaded cells denote PWQO exceedance; some PWQOs are dependent on other water quality parameters hence the range in guideline values, refer to PWQO notes.</p> <p>2. Interim Provincial Water Quality Objectives (Interim PWQO); <i>shaded cells and italics denote Interim PWQO exceedance</i>; some PWQOs are dependent on other water quality parameters hence the range in guideline values, refer to PQWO notes.</p> <p>3. The PWQO for Oil and Grease indicates that oil or petrochemicals should not be present in concentrations that: can be detected as a visible film, sheen or discoloration on the surface, can be detected by odour, can cause tainting of edible organisms, can form detectable deposits on shorelines and bottom sediments.</p> <p>4. Results that are preceded by "<" denote concentrations that are below the laboratory Reportable Detection Limit (RDL).</p>						<p>5b. <i>Phosphorus (Interim)</i>: - Current scientific evidence is insufficient to develop a firm Objective at this time. - Accordingly, the following phosphorus concentrations should be considered as general guidelines which should be supplemented by site-specific studies: (a) To avoid nuisance concentrations of algae in lakes, average total phosphorus concentrations for the ice-free period should not exceed 20 ug/L; (b) A high level of protection against aesthetic deterioration will be provided by a total phosphorus concentration for the ice-free period of 10 ug/L or less. This should apply to all lakes naturally below this value; (c) Excessive plant growth in rivers and streams should be eliminated at a total phosphorus concentration below 30 ug/L.</p>		
<p>5a. <i>Aluminum (Interim)</i>: - At pH 4.5 to 5.5 the Interim PWQO is 15 ug/L based on inorganic monomeric aluminum measured in clay-free samples. - At pH >5.5 to 6.5, no condition should be permitted which would increase the acid soluble inorganic aluminum concentration in clay-free samples to more than 10% above natural background concentrations for waters representative of that geological area of the Province that are unaffected by man-made inputs. - At pH >6.5 to 9.0, the Interim PWQO is 75 ug/L based on total aluminum measured in clay free samples. - If natural background aluminum concentrations in water bodies unaffected by manmade inputs are greater than the numerical Interim PWQO (above), no condition is permitted that would increase the aluminum concentration in clay-free samples by more than 10% of the natural background level.</p>						<p>5c. <i>Beryllium</i>: If Hardness <75 mg/L (CaCO3), use 11 ug/L If Hardness >75 mg/L (CaCO3), use 1100 ug/L</p>		
						<p>5d. <i>Cadmium (Interim)</i>: If Hardness 0-100 mg/L (CaCO3), then use 0.1 ug/L If Hardness >100 mg/L (CaCO3), then use 0.5 ug/L</p>		
						<p>5e. <i>Chromium</i>: 1 ug/L for hexavalent chromium (Cr VI) 8.9 ug/L for trivalent chromium (Cr III)</p>		
						<p>5f. <i>Copper (Interim)</i>: If Hardness as CaCO3 (mg/L) is 0 - 20, then use 1 ug/L If Hardness as CaCO3 (mg/L) is >20, then use 5 ug/L</p>		
						<p>5g. <i>Lead</i>: If Alkalinity as CaCO3 (mg/L) is < 20, use 5 ug/L If Alkalinity as CaCO3 (mg/L) is 20 to 40, use 10 ug/L If Alkalinity as CaCO3 (mg/L) is 40 to 80, use 20 ug/L If Alkalinity as CaCO3 (mg/L) is > 80, use 25 ug/L</p>		
						<p>5h. <i>Lead (Interim)</i>: If Hardness as CaCO3 (mg/L) is < 30, then use 1 ug/L If Hardness as CaCO3 (mg/L) is 30 to 80, then use 3 ug/ If Hardness as CaCO3 (mg/L) is > 80, then use 5 ug/L</p>		

Table 4: Measured Water Volume and Rate of Discharge from Quarry Sump

Date	Start	Stop	Total Sec.	Total Min.	Total Litres	Rate of Taking (L/sec)	Rate of Taking (L/min)
ECA Permitted Rate					6,550,000	76	4,545
1-May-24	NO PUMP		0	0	-	-	-
2-May-24	NO PUMP		0	0	-	-	-
3-May-24	NO PUMP		0	0	-	-	-
4-May-24	NO PUMP		0	0	-	-	-
5-May-24	NO PUMP		0	0	-	-	-
6-May-24	NO PUMP		0	0	-	-	-
7-May-24	NO PUMP		0	0	-	-	-
8-May-24	7:00 AM	4:00 PM	32400	540	765,180	24	1,417
9-May-24	NO PUMP		0	0	-	-	-
10-May-24	NO PUMP		0	0	-	-	-
11-May-24	NO PUMP		0	0	-	-	-
12-May-24	NO PUMP		0	0	-	-	-
13-May-24	NO PUMP		0	0	-	-	-
14-May-24	NO PUMP		0	0	-	-	-
15-May-24	NO PUMP		0	0	-	-	-
16-May-24	NO PUMP		0	0	-	-	-
17-May-24	NO PUMP		0	0	-	-	-
18-May-24	NO PUMP		0	0	-	-	-
19-May-24	NO PUMP		0	0	-	-	-
20-May-24	NO PUMP		0	0	-	-	-
21-May-24	7:00 AM	4:00 PM	32400	540	765,180	24	1,417
22-May-24	NO PUMP		0	0	-	-	-
23-May-24	NO PUMP		0	0	-	-	-
24-May-24	NO PUMP		0	0	-	-	-
25-May-24	NO PUMP		0	0	-	-	-
26-May-24	NO PUMP		0	0	-	-	-
27-May-24	NO PUMP		0	0	-	-	-
28-May-24	NO PUMP		0	0	-	-	-
29-May-24	7:00 AM	4:00 PM	32400	540	765,180	24	1,417
30-May-24	NO PUMP		0	0	-	-	-
31-May-24	NO PUMP		0	0	-	-	-
1-Jun-24	NO PUMP		0	0	-	-	-
2-Jun-24	NO PUMP		0	0	-	-	-
3-Jun-24	NO PUMP		0	0	-	-	-
4-Jun-24	NO PUMP		0	0	-	-	-
5-Jun-24	7:00 AM	4:00 PM	32400	540	765,180	24	1,417
6-Jun-24	NO PUMP		0	0	-	-	-
7-Jun-24	NO PUMP		0	0	-	-	-
8-Jun-24	NO PUMP		0	0	-	-	-
9-Jun-24	NO PUMP		0	0	-	-	-
10-Jun-24	NO PUMP		0	0	-	-	-
11-Jun-24	NO PUMP		0	0	-	-	-

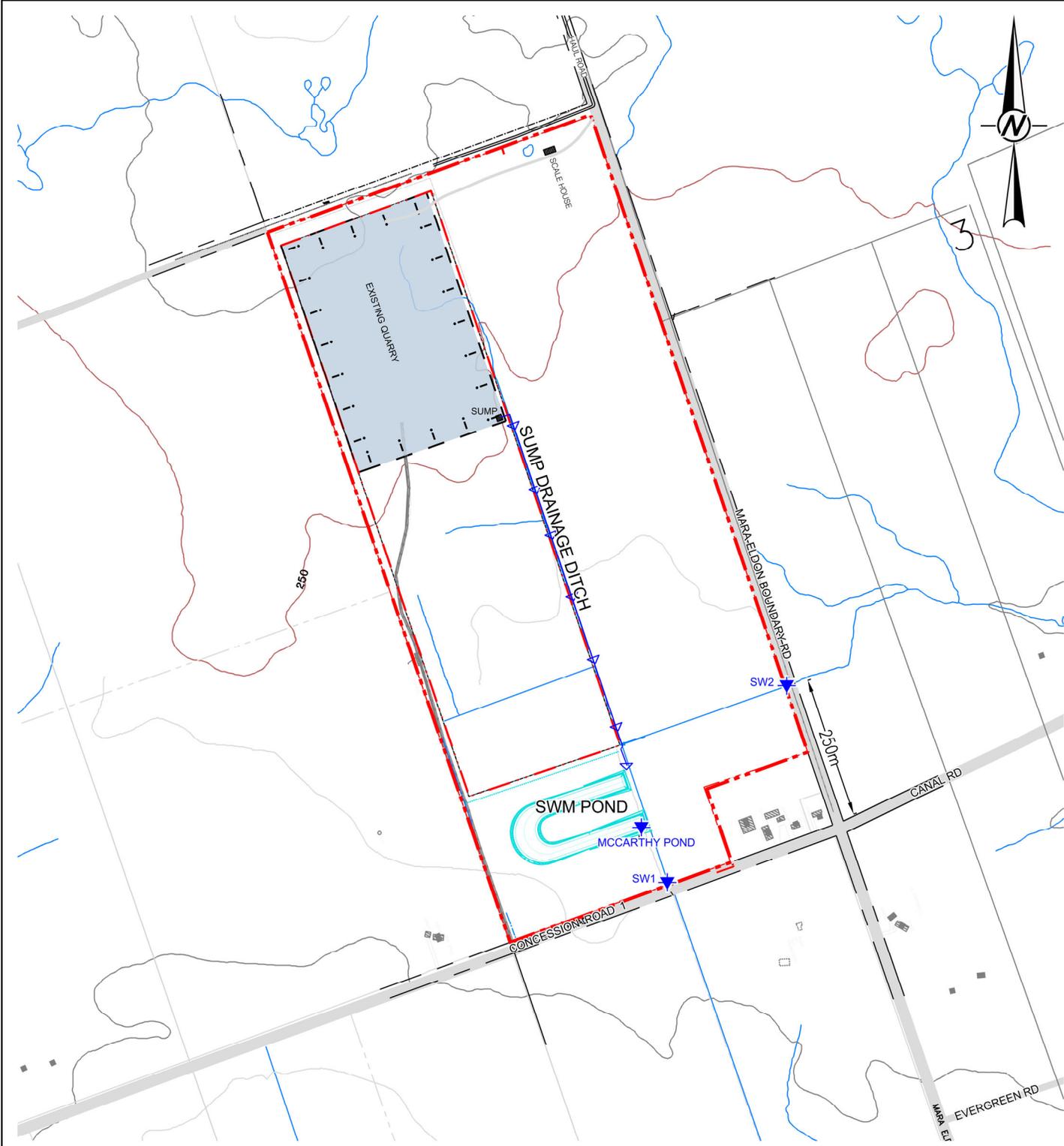
Table 4: Measured Water Volume and Rate of Discharge from Quarry Sump

Date	Start	Stop	Total Sec.	Total Min.	Total Litres	Rate of Taking (L/sec)	Rate of Taking (L/min)
ECA Permitted Rate					6,550,000	76	4,545
12-Jun-24	NO PUMP		0	0	-	-	-
13-Jun-24	NO PUMP		0	0	-	-	-
14-Jun-24	7:00 AM	4:00 PM	32400	540	765,180	24	1,417
15-Jun-24	NO PUMP		0	0	-	-	-
16-Jun-24	NO PUMP		0	0	-	-	-
17-Jun-24	NO PUMP		0	0	-	-	-
18-Jun-24	NO PUMP		0	0	-	-	-
19-Jun-24	7:00 AM	4:00 PM	32400	540	765,180	24	1,417
20-Jun-24	NO PUMP		0	0	-	-	-
21-Jun-24	NO PUMP		0	0	-	-	-
22-Jun-24	NO PUMP		0	0	-	-	-
23-Jun-24	NO PUMP		0	0	-	-	-
24-Jun-24	NO PUMP		0	0	-	-	-
25-Jun-24	7:00 AM	4:00 PM	32400	540	765,180	24	1,417
26-Jun-24	NO PUMP		0	0	-	-	-
27-Jun-24	NO PUMP		0	0	-	-	-
28-Jun-24	NO PUMP		0	0	-	-	-
29-Jun-24	NO PUMP		0	0	-	-	-
30-Jun-24	7:00 AM	4:00 PM	32400	540	765,180	24	1,417
1-Jul-24	NO PUMP		0	0	-	-	-
2-Jul-24	NO PUMP		0	0	-	-	-
3-Jul-24	7:00 AM	4:00 PM	32400	540	765,180	24	1,417
4-Jul-24	NO PUMP		0	0	-	-	-
5-Jul-24	NO PUMP		0	0	-	-	-
6-Jul-24	NO PUMP		0	0	-	-	-
7-Jul-24	NO PUMP		0	0	-	-	-
8-Jul-24	NO PUMP		0	0	-	-	-
9-Jul-24	NO PUMP		0	0	-	-	-
10-Jul-24	NO PUMP		0	0	-	-	-
11-Jul-24	NO PUMP		0	0	-	-	-
12-Jul-24	NO PUMP		0	0	-	-	-
13-Jul-24	NO PUMP		0	0	-	-	-
14-Jul-24	NO PUMP		0	0	-	-	-
15-Jul-24	NO PUMP		0	0	-	-	-
16-Jul-24	NO PUMP		0	0	-	-	-
17-Jul-24	NO PUMP		0	0	-	-	-
18-Jul-24	NO PUMP		0	0	-	-	-
19-Jul-24	7:00 AM	4:00 PM	32400	540	765,180	24	1,417
20-Jul-24	NO PUMP		0	0	-	-	-
21-Jul-24	NO PUMP		0	0	-	-	-
22-Jul-24	NO PUMP		0	0	-	-	-
23-Jul-24	NO PUMP		0	0	-	-	-

Table 4: Measured Water Volume and Rate of Discharge from Quarry Sump

Date	Start	Stop	Total Sec.	Total Min.	Total Litres	Rate of Taking (L/sec)	Rate of Taking (L/min)
ECA Permitted Rate					6,550,000	76	4,545
24-Jul-24	NO PUMP		0	0	-	-	-
25-Jul-24	7:00 AM	4:00 PM	32400	540	765,180	24	1,417
26-Jul-24	NO PUMP		0	0	-	-	-
27-Jul-24	NO PUMP		0	0	-	-	-
28-Jul-24	NO PUMP		0	0	-	-	-
29-Jul-24	NO PUMP		0	0	-	-	-
30-Jul-24	NO PUMP		0	0	-	-	-
31-Jul-24	NO PUMP		0	0	-	-	-
Totals					8,416,980		11

Figures



LEGEND

- Approximate Property Boundary
- Approximate Licenced Boundary
- 5 m Contour Line
- ★ ECA Surface Water Sampling Location
- Approximate Extent of Quarry

REFERENCES AND NOTES

1. Projection UTM NAD83 Zone 17
2. Mapping based on ESRI Geography Network OBM Features and Bing Orthophotos
3. ECA Location SW2 is Historically (Former) SW1b



CLIENT
GREEN INFRASTRUCTURE PARTNERS INC. / QBJR

PROJECT
STAN MCCARTHY QUARRY

TITLE
LOCATION MAP

CONSULTANT
WSP | YYYY-MM-DD 2024-05-15



PREPARED JPR

DESIGN

REVIEW CSI

APPROVED

PROJECT No. CONTROL
CA0023633

Rev. ---

FIGURE
1

Path: \\golder-gis\Barr\CompleteData\SIM\Clients\Coco_Paving\McCarthy_Quarry\99_PROD\CA002363340_PROD\0001-AMR | File Name: CA0023633-0001-CH-001.dwg

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

26 mm

APPENDIX A

ECA No. 7737-BH6QEA

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 7737-BH6QEA
Issue Date: October 22, 2019

QBJR Aggregates Inc.
949 Wilson Avenue
Toronto, Ontario
M3K 1G2

Site Location: McCarthy Quarry
Lot 1, Concession 1,
Original Township of Mara
Township of Ramara
County of Simcoe
L0K 1B0

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

sewage works for the collection, transmission, treatment and disposal of stormwater and groundwater collecting within the confines of the Quarry, consisting of the following:

- one (1) sump, measuring 20 metres long, 10 metres wide and 3 metres deep, located at the base of the quarry floor, equipped with two (2) submersible pumps each rated at 38 litres per second with a suction intake approximately one (1) metre above the bottom of the sump, discharging to a settling pond via a 203 millimetre diameter pipeline; and
- one (1) horse-shoe shaped settling pond with an approximate volume of 14,000 cubic metres (at elevation 248.2 metres), with a Hickenbottom control structure equipped with a 150 millimetre diameter orifice plate, discharging to the roadside ditch along Concession Road 1 with ultimate discharge to the Talbot River via a private ditch.

all other controls, electrical equipment, instrumentation, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned sewage works.

all in accordance with supporting documents listed in **Schedule A**.

For the purpose of this environmental compliance approval, the following definitions apply:

"Application" means the application for an environmental compliance approval submitted to the Ministry for approval by or on behalf of the Owner and dated August 8, 2019.

"Approval" means this environmental compliance approval, any schedules attached to it, and the Application;

"Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;

"District Manager" means the District Manager of the appropriate local District Office of the Ministry, where the Works are geographically located;

"EPA" means the *Environmental Protection Act, R.S.O. 1990, c.E.19* , as amended;

"Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;

"Owner" means QBJR Aggregates Inc., and includes its successors and assignees;

"OWRA" means the *Ontario Water Resources Act, R.S.O. 1990, c. O.40* , as amended; and

"Works" means the sewage works described in the Approval.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL CONDITION

- (1) The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the terms and conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
- (2) Except as otherwise provided by these terms and conditions, the Owner shall design, build, install, operate and maintain the Works in accordance with this Approval.
- (3) Where there is a conflict between a provision of this environmental compliance approval and any document submitted by the Owner, the conditions in this environmental compliance approval shall take precedence. Where there is a conflict between one or more of the documents submitted by the Owner, the Application shall take precedence

unless it is clear that the purpose of the document was to amend the Application

- (4) Where there is a conflict between the documents listed in the Schedule A, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.
- (5) The terms and conditions of this Approval are severable. If any term and condition of this environmental compliance approval, or the application of any requirement of this environmental compliance approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.
- (6) The issuance of, and compliance with the conditions of, this Approval does not:
 - a) relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including, but not limited to, the obligation to obtain approval from the local conservation authority necessary to construct or operate the sewage Works; or
 - b) limit in any way the authority of the Ministry to require certain steps be taken to require the Owner to furnish any further information related to compliance with this Approval.

2. CHANGE OF OWNER

- (1) The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within **thirty (30) days** of the change occurring:
 - (a) change of address of Owner or operating authority;
 - (b) change of Owner or operating authority or both, including address of new Owner or operating authority, or both;
 - (c) change of partners where the Owner or operating authority is or at any time becomes a partnership, and a copy of the most recent declaration filed under the *Business Names Act, R.S.O. 1990, c. B.17* ; and
 - (d) change of name of the corporation where the Owner or operator is or at any time becomes a corporation, and a copy of the “Initial Return” or “Notice of Change” filed under the *Corporations Information Act, R.S.O. 1990, c. C.39* , shall be included in the notification to the District Manager.
- (2) In the event of any change in ownership of the Works, the Owner shall notify in writing the succeeding owner of the existence of this Approval, and a copy of such notice shall be

forwarded to the District Manager.

- (3) The Owner shall ensure that all communications made pursuant to this condition refer to the number at the top of this environmental compliance approval.

3. OPERATION AND MAINTENANCE

- (1) The Owner shall prepare an operations manual of the Works that includes, but is not limited to, the following information:
 - (a) operating procedures for routine operation of the Works;
 - (b) inspection programs, including frequency of inspection, for the Works and the methods or tests to be employed to detect when maintenance is necessary;
 - (c) repair and maintenance programs, including the frequency of repair and maintenance for the Works;
 - (d) contingency plans and procedures for dealing with a potential spill, bypasses or any other abnormal situations, including notifying the District Manager of the situation; and
 - (e) procedures for receiving and responding to public complaints.
- (2) The Owner shall ensure that the Works and related equipment and appurtenances which are installed or used to achieve compliance with this Approval are properly operated and maintained.
- (3) The Owner shall inspect the sump, discharge pump and settling pond on a monthly basis and keep a log or record of the inspections at the Quarry.
- (4) The Owner shall carry out on an as-needed basis, specific maintenance requirements like removing build-up, associated with the sump, pump and settling pond.
- (5) The Owner shall, upon identification of a loss of oil and fuel, take immediate action to prevent the further occurrence of such loss and prevent the spill from entering into the sump and/or the settling pond.
- (6) In furtherance of, but without limiting the generality of, the obligation imposed by subsection (2), the Owner shall ensure that equipment and material for the containment, clean-up and disposal of oil and fuel and materials contaminated with oil or fuel are kept on hand and in good repair for immediate use in the event of:
 - (a) loss of oil or fuel during refuelling or equipment maintenance;

- (b) a spill within the meaning of Part X of the Environmental Protection Act; and/or
- (c) the identification of an abnormal amount of oil or fuel in the sump and/or settling pond.

4. EFFLUENT LIMITS

- (1) The Owner shall construct, operate and maintain the Works such that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the Works.

Table 1 - Effluent Limits		
Effluent Parameter	Daily Concentration (milligrams per litre unless otherwise indicated)	Monthly Average Concentration (milligrams per litre unless otherwise indicated)
Column 1	Column 2	Column 3
Oil and Grease	30	15
Phenolics (4AAP)	0.04	0.02
Total Suspended Solids	30	15
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times		

- (2) For the purposes of determining compliance with and enforcing subsection (1):
 - (a) non-compliance with respect to a Daily Concentration is deemed to have occurred when any single grab sample analyzed for a parameter named in Column 1 of subsection (1) is greater than the corresponding daily concentration set out in Column 2 of subsection (1);
 - (b) non-compliance with respect to an Monthly Average Concentration is deemed to have occurred when the arithmetic mean concentration of all samples taken in a month, analyzed for a parameter named in Column 1 of subsection (1) is greater than the corresponding monthly average concentration set out in Column 3 of subsection (1); and
 - (c) non-compliance with respect to pH is deemed to have occurred when any single measurement is outside of the indicated range.

5. EFFLUENT - VISUAL OBSERVATIONS

- (1) Notwithstanding any other condition in this Approval, the Owner shall ensure that the effluent from the Works is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film, sheen or foam on the receiving waters.
- (2) Notwithstanding any other condition in this Approval, the Owner shall ensure that the

effluent from the Works shall not cause flooding or erosion to the downstream receiver and in particular Road flooding.

6. MONITORING AND RECORDING

The Owner shall, upon the Issuance of this Approval, carry out the following monitoring program:

- (1) All samples and measurements taken for the purposes of this Approval are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.
- (2) Samples shall be collected and analyzed at the following sampling point, at the sampling frequencies and using the sample type specified for each parameter listed:

Table 2 - Effluent Monitoring	
Sample Point	Outfall of settling pond approximately 150 metres north of Concession 1 (i.e. end of pipe discharge).
Frequency	Weekly
Sample Type	Grab
Parameters	Oil and Grease, Phenolics (4AAP), and Total Suspended Solid (TSS).

Table 3 - Effluent and Surface Water Monitoring	
Sample Point	<ol style="list-style-type: none"> 1. Outfall of settling pond approximately 150 metres north of Concession 1 (i.e. end of pipe discharge). 2. Box culvert on Eldon-Ramara Townline approximately 260 metres north of the intersection of Ramara Concession 1 and Eldon-Ramara Townline (i.e. upgradient of end of pipe discharge). 3. 80 centimetre CSP located at Concession 1 Road on McCarthy property (i.e. downgradient of end of pipe discharge).
Frequency	Semi-Annually during discharge event.
Sample Type	Grab
Parameters	Total Suspended Solids, Copper, Lead, Nickel, Zinc, Arsenic, Oil and Grease, Phenolics (4AAP), Hardness (as CaCO ₃), Alkalinity(as CaCO ₃), Conductivity, pH, Fluoride, Chloride, Nitrate (N), Nitrite (N), Sulphate, Calcium, Magnesium, Sodium, Potassium, Ammonia (N), Dissolved Organic Carbon, Iron, Total Kjeldahl Nitrogen, Phosphorus (Total), Cadmium, Chromium, Manganese, Anion (Sum), Cation (Sum) and Total Dissolved Solids.

- (3) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:
 - (a) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (August 1994), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions; and
 - (b) the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition), as amended from time to time by more recently published editions.
- (4) The Owner shall measure, record and calculate the discharge rate and volume from the Works on a daily basis during discharging period.
- (5) The Owner shall retain for a minimum of **five (5) years** from the date of their creation, all records and information related to or resulting from the monitoring activities required by this Approval.

7. RECEIVER INSPECTION

- (1) The Owner shall, at least once per year, undertake a visual inspection of the downstream ditches for evidence of erosion and/or flooding and shall report the observations in the annual report.

8. REPORTING

- (1) The Owner shall report to the District Manager or designate, any exceedance of any parameter specified in condition 4 orally, forthwith, and in writing within **seven (7) days** of the exceedance.
- (2) In addition to the obligations under Part X of the EPA, the Owner shall, within **ten (10) working days** of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, by-product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.
- (3) The Owner shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.
- (4) The Owner shall submit quarterly reports of the information obtained under condition 6 within **30 days** of the end of each quarter.
- (5) The Owner shall prepare, and submit to the District Manager, a **performance report**, on

an annual basis, on or before March 31st. The reports shall contain, but shall not be limited to, the following information:

- (a) a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in condition 4, including an overview of the success and adequacy of the sewage Works;
- (b) a description of any operating problems encountered and corrective actions taken;
- (c) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the sewage works;
- (d) a summary of any effluent quality assurance or control measures undertaken in the reporting period;
- (e) any other information the District Manager requires from time to time.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the Works are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. Condition 1.(6) is included to emphasize that the issuance of this Approval does not diminish any other statutory and regulatory obligations to which the Owner is subject in the construction, maintenance and operation of the Works. The Condition specifically highlights the need to obtain any necessary conservation authority approvals. The Condition also emphasizes the fact that this Approval doesn't limit the authority of the Ministry to require further information.
2. Condition 2 is included to ensure that the Ministry records are kept accurate and current with respect to approved Works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the works in compliance with it.
3. Condition 3 is included to ensure that a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the Owner and made available to the Ministry. Such a manual is an integral part of the operation of the Works. Its compilation and use should assist the owner in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for Ministry staff when reviewing the Owner's operation of the Works. The condition is also included to ensure that the Works will be operated and maintained in a manner enabling compliance with the terms and conditions of this Approval, such that the environment is protected and deterioration, loss, injury or damage to

any person or property is minimised and/or prevented.

4. Conditions 4 and 5 are imposed to ensure that the effluent discharged from the Works to the environment meets the Ministry's effluent quality requirements thus minimizing environmental impact on the receiver.
5. Condition 6 is included to enable the Owner to evaluate and demonstrate the performance of the Works, on a continual basis, so that the Works are properly operated and maintained at a level which is consistent with the design objectives and effluent limits specified in the Approval and that the Works does not cause any impairment to the receiver.
6. Condition 7 is included in order to determine if the ongoing discharge of quarry water is having a negative impact on the downstream ditches so that abatement measures can be taken to prevent such occurrences.
7. Condition 8 is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this Approval, so that the Ministry can work with the Owner in resolving any problems in a timely manner.

SCHEDULE 'A'

1. Environmental Compliance Approval Application for Industrial Sewage Works submitted by John Easton, P.Geo., Golder Associates Ltd., and signed by Mr. Anthony Rossi, Director Land Development & Government Relations, QBJR Aggregates Inc., dated August 8, 2019; and all supporting documentation and information.

**Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s).
4731-987KM8 issued on October 15, 2013.**

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

- a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

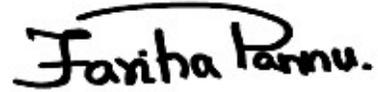
AND

The Director appointed for the purposes of Part
II.1 of the Environmental Protection Act
Ministry of the Environment, Conservation and
Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 22nd day of October, 2019



Fariha Pannu, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

AA/

c: District Manager, MECP Barrie District Office
John Easton, P.Geo., Golder Associates Ltd.

APPENDIX B

Water Quality Data



Your Project #: CA0023633.8620
 Your C.O.C. #: 990796-01-01

Attention: Colin Imrie

WSP Canada Inc.
 121 Commerce Park Drive
 Unit L
 Barrie, ON
 CANADA L4N 8X1

Report Date: 2024/05/27
 Report #: R8165753
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E9011

Received: 2024/05/17, 11:58

Sample Matrix: Water
 # Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	4	N/A	2024/05/23	CAM SOP-00448	SM 24 2320 B m
Carbonate, Bicarbonate and Hydroxide	4	N/A	2024/05/24	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	4	N/A	2024/05/24	CAM SOP-00463	SM 24 4500-Cl E m
Conductivity	4	N/A	2024/05/23	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1)	4	N/A	2024/05/22	CAM SOP-00446	SM 24 5310 B m
Fluoride	4	2024/05/18	2024/05/23	CAM SOP-00449	SM 24 4500-F C m
Hardness (calculated as CaCO3)	4	N/A	2024/05/22	CAM SOP 00102/00408/00447	SM 2340 B
Lab Filtered Metals by ICPMS	4	2024/05/21	2024/05/22	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICPMS	4	2024/05/22	2024/05/22	CAM SOP-00447	EPA 6020B m
Anion and Cation Sum	4	N/A	2024/05/24		
Total Ammonia-N	1	N/A	2024/05/23	CAM SOP-00441	USGS I-2522-90 m
Total Ammonia-N	3	N/A	2024/05/27	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	4	N/A	2024/05/24	CAM SOP-00440	SM 24 4500-NO3I/NO2B
Animal and Vegetable Oil and Grease	4	N/A	2024/05/21	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	4	2024/05/19	2024/05/21	CAM SOP-00326	EPA1664B m,SM5520B m
pH (3)	4	2024/05/18	2024/05/23	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	4	N/A	2024/05/23	CAM SOP-00444	OMOE E3179 m
Orthophosphate	4	N/A	2024/05/21	CAM SOP-00461	SM 24 4500-P E
Sat. pH and Langelier Index (@ 20C)	4	N/A	2024/05/24		Auto Calc
Sat. pH and Langelier Index (@ 4C)	4	N/A	2024/05/24		Auto Calc
Sulphate by Automated Turbidimetry	4	N/A	2024/05/24	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	4	2024/05/23	2024/05/24	CAM SOP-00428	SM 24 2540C m
Total Kjeldahl Nitrogen in Water	4	2024/05/21	2024/05/22	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	4	2024/05/21	2024/05/23	CAM SOP-00407	SM 24 4500-P I
Mineral/Synthetic O & G (TPH Heavy Oil) (4)	4	2024/05/19	2024/05/21	CAM SOP-00326	EPA1664B m,SM5520F m
Total Suspended Solids	1	2024/05/23	2024/05/23	CAM SOP-00428	SM 24 2540D m
Total Suspended Solids	3	2024/05/23	2024/05/24	CAM SOP-00428	SM 24 2540D m
Turbidity	4	N/A	2024/05/18	CAM SOP-00417	SM 24 2130 B



Your Project #: CA0023633.8620
Your C.O.C. #: 990796-01-01

Attention: Colin Imrie

WSP Canada Inc.
121 Commerce Park Drive
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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E9011

Received: 2024/05/17, 11:58

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested. This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(3) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(4) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease



Your Project #: CA0023633.8620
Your C.O.C. #: 990796-01-01

Attention: Colin Imrie

WSP Canada Inc.
121 Commerce Park Drive
Unit L
Barrie, ON
CANADA L4N 8X1

Report Date: 2024/05/27
Report #: R8165753
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E9011

Received: 2024/05/17, 11:58

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:

Ankita Bhalla, Project Manager
Email: Ankita.Bhalla@bureauveritas.com
Phone# (905) 817-5700

=====

This report has been generated and distributed using a secure automated process.

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C4E9011
Report Date: 2024/05/27

WSP Canada Inc.
Client Project #: CA0023633.8620
Sampler Initials: CL

OIL & GREASE - A/V/M/T (WATER)

Bureau Veritas ID			ZEW772	ZEW773	ZEW774	ZEW775		
Sampling Date			2024/05/16 12:45	2024/05/16 12:20	2024/05/16 03:15	2024/05/16		
COC Number			990796-01-01	990796-01-01	990796-01-01	990796-01-01		
	UNITS	Criteria	POND	SW1	SW2	DUP3	RDL	QC Batch
Calculated Parameters								
Total Animal/Vegetable Oil and Grease	mg/L	-	<0.50	<0.50	1.6	<0.50	0.50	9399780
Petroleum Hydrocarbons								
Total Oil & Grease	mg/L	-	<0.50	<0.50	1.6	<0.50	0.50	9402916
Total Oil & Grease Mineral/Synthetic	mg/L	0.5	<0.50	<0.50	<0.50	<0.50	0.50	9402917
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Criteria: Ontario Provincial Water Quality Objectives								
Ref. to MOEE Water Management document dated Feb.1999								



BUREAU
VERITAS

Bureau Veritas Job #: C4E9011
Report Date: 2024/05/27

WSP Canada Inc.
Client Project #: CA0023633.8620
Sampler Initials: CL

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID			ZEW772			ZEW772		
Sampling Date			2024/05/16 12:45			2024/05/16 12:45		
COC Number			990796-01-01			990796-01-01		
	UNITS	Criteria	POND	RDL	QC Batch	POND Lab-Dup	RDL	QC Batch
Calculated Parameters								
Anion Sum	me/L	-	6.86	N/A	9399778			
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	82	1.0	9399781			
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	<1.0	1.0	9399781			
Cation Sum	me/L	-	7.25	N/A	9399778			
Hardness (CaCO3)	mg/L	-	230	1.0	9399785			
Langelier Index (@ 20C)	N/A	-	0.213		9399783			
Langelier Index (@ 4C)	N/A	-	-0.0350		9399784			
Saturation pH (@ 20C)	N/A	-	7.83		9399783			
Saturation pH (@ 4C)	N/A	-	8.07		9399784			
Inorganics								
Total Ammonia-N	mg/L	-	<0.050	0.050	9403839			
Conductivity	umho/cm	-	740	1.0	9402437	740	1.0	9402437
Total Dissolved Solids	mg/L	-	450	10	9408778			
Fluoride (F-)	mg/L	-	0.27	0.10	9402431	0.25	0.10	9402431
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.37	0.10	9403930			
Dissolved Organic Carbon	mg/L	-	6.0	0.40	9402789			
Orthophosphate (P)	mg/L	-	<0.010	0.010	9402465			
pH	pH	6.5:8.5	8.04		9402438	8.05		9402438
Phenols-4AAP	mg/L	0.001	<0.0010	0.0010	9409799	<0.0010	0.0010	9409799
Total Phosphorus	mg/L	0.01	0.010	0.004	9404368	0.008	0.004	9404368
Total Suspended Solids	mg/L	-	<10	10	9407845			
Dissolved Sulphate (SO4)	mg/L	-	130	1.0	9402464			
Turbidity	NTU	-	3.4	0.1	9401958			
Alkalinity (Total as CaCO3)	mg/L	-	83	1.0	9402436	83	1.0	9402436
Dissolved Chloride (Cl-)	mg/L	-	91	1.0	9402463			
Nitrite (N)	mg/L	-	<0.010	0.010	9402435			
Nitrate (N)	mg/L	-	<0.10	0.10	9402435			
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Lab-Dup = Laboratory Initiated Duplicate								
Criteria: Ontario Provincial Water Quality Objectives								
Ref. to MOEE Water Management document dated Feb.1999								
N/A = Not Applicable								



BUREAU
VERITAS

Bureau Veritas Job #: C4E9011
Report Date: 2024/05/27

WSP Canada Inc.
Client Project #: CA0023633.8620
Sampler Initials: CL

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID			ZEW773		ZEW774		ZEW775		
Sampling Date			2024/05/16 12:20		2024/05/16 03:15		2024/05/16		
COC Number			990796-01-01		990796-01-01		990796-01-01		
	UNITS	Criteria	SW1	QC Batch	SW2	QC Batch	DUP3	RDL	QC Batch

Calculated Parameters									
Anion Sum	me/L	-	10.0	9399778	6.51	9399778	9.91	N/A	9399778
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	260	9399781	300	9399781	260	1.0	9399781
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	2.9	9399781	3.0	9399781	4.0	1.0	9399781
Cation Sum	me/L	-	9.20	9399778	6.94	9399778	10.3	N/A	9399778
Hardness (CaCO3)	mg/L	-	340	9399785	330	9399785	380	1.0	9399785
Langelier Index (@ 20C)	N/A	-	1.04	9399783	1.15	9399783	1.24		9399783
Langelier Index (@ 4C)	N/A	-	0.797	9399784	0.896	9399784	0.990		9399784
Saturation pH (@ 20C)	N/A	-	7.03	9399783	6.88	9399783	6.97		9399783
Saturation pH (@ 4C)	N/A	-	7.27	9399784	7.13	9399784	7.22		9399784

Inorganics									
Total Ammonia-N	mg/L	-	0.13	9403839	<0.050	9403790	0.13	0.050	9403839
Conductivity	umho/cm	-	960	9402444	580	9402437	950	1.0	9402444
Total Dissolved Solids	mg/L	-	575	9408778	345	9409509	575	10	9409509
Fluoride (F-)	mg/L	-	0.21	9402445	<0.10	9402431	0.22	0.10	9402445
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.58	9403930	0.34	9403930	0.59	0.10	9403930
Dissolved Organic Carbon	mg/L	-	11	9402788	7.9	9402789	11	0.40	9402788
Orthophosphate (P)	mg/L	-	<0.010	9402465	<0.010	9402465	<0.010	0.010	9402465
pH	pH	6.5:8.5	8.07	9402448	8.03	9402438	8.21		9402448
Phenols-4AAP	mg/L	0.001	<0.0010	9409799	<0.0010	9409799	<0.0010	0.0010	9409799
Total Phosphorus	mg/L	0.01	0.012	9404368	0.012	9404368	0.010	0.004	9404368
Total Suspended Solids	mg/L	-	<10	9406490	<10	9406490	<10	10	9406490
Dissolved Sulphate (SO4)	mg/L	-	86	9402464	20	9402464	81	1.0	9402464
Turbidity	NTU	-	3.6	9401958	1.7	9401958	3.5	0.1	9401958
Alkalinity (Total as CaCO3)	mg/L	-	270	9402442	300	9402436	270	1.0	9402442
Dissolved Chloride (Cl-)	mg/L	-	100	9402463	3.2	9402463	100	1.0	9402463
Nitrite (N)	mg/L	-	0.111	9402435	<0.010	9402435	0.110	0.010	9402435
Nitrate (N)	mg/L	-	0.24	9402435	<0.10	9402435	0.24	0.10	9402435

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels
RDL = Reportable Detection Limit	
QC Batch = Quality Control Batch	
Criteria: Ontario Provincial Water Quality Objectives	
Ref. to MOEE Water Management document dated Feb.1999	
N/A = Not Applicable	



ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID			ZEW772	ZEW773			ZEW773		
Sampling Date			2024/05/16 12:45	2024/05/16 12:20			2024/05/16 12:20		
COC Number			990796-01-01	990796-01-01			990796-01-01		
	UNITS	Criteria	POND	SW1	RDL	QC Batch	SW1 Lab-Dup	RDL	QC Batch
Metals									
Total Arsenic (As)	ug/L	100	<1.0	<1.0	1.0	9405905			
Total Cadmium (Cd)	ug/L	0.2	<0.090	<0.090	0.090	9405905			
Dissolved Calcium (Ca)	ug/L	-	52000	110000	200	9404877	130000	200	9404877
Total Calcium (Ca)	ug/L	-	51000	120000	200	9405905			
Total Chromium (Cr)	ug/L	-	<5.0	<5.0	5.0	9405905			
Total Copper (Cu)	ug/L	5	1.3	1.5	0.90	9405905			
Total Iron (Fe)	ug/L	300	140	340	100	9405905			
Total Lead (Pb)	ug/L	5	<0.50	<0.50	0.50	9405905			
Dissolved Magnesium (Mg)	ug/L	-	23000	18000	50	9404877	20000	50	9404877
Total Magnesium (Mg)	ug/L	-	22000	18000	50	9405905			
Total Manganese (Mn)	ug/L	-	22	52	2.0	9405905			
Total Nickel (Ni)	ug/L	25	<1.0	1.4	1.0	9405905			
Dissolved Potassium (K)	ug/L	-	6500	4200	200	9404877	5000	200	9404877
Total Potassium (K)	ug/L	-	6300	4500	200	9405905			
Dissolved Sodium (Na)	ug/L	-	59000	52000	100	9404877	59000	100	9404877
Total Sodium (Na)	ug/L	-	55000	53000	100	9405905			
Total Zinc (Zn)	ug/L	30	<5.0	<5.0	5.0	9405905			
No Fill	No Exceedance								
Grey	Exceeds 1 criteria policy/level								
Black	Exceeds both criteria/levels								
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
Lab-Dup = Laboratory Initiated Duplicate									
Criteria: Ontario Provincial Water Quality Objectives									
Ref. to MOEE Water Management document dated Feb.1999									



ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID			ZEW774	ZEW775		
Sampling Date			2024/05/16 03:15	2024/05/16		
COC Number			990796-01-01	990796-01-01		
	UNITS	Criteria	SW2	DUP3	RDL	QC Batch
Metals						
Total Arsenic (As)	ug/L	100	<1.0	<1.0	1.0	9405905
Total Cadmium (Cd)	ug/L	0.2	<0.090	<0.090	0.090	9405905
Dissolved Calcium (Ca)	ug/L	-	120000	120000	200	9404877
Total Calcium (Ca)	ug/L	-	110000	120000	200	9405905
Total Chromium (Cr)	ug/L	-	<5.0	<5.0	5.0	9405905
Total Copper (Cu)	ug/L	5	1.8	1.3	0.90	9405905
Total Iron (Fe)	ug/L	300	140	340	100	9405905
Total Lead (Pb)	ug/L	5	<0.50	<0.50	0.50	9405905
Dissolved Magnesium (Mg)	ug/L	-	9100	20000	50	9404877
Total Magnesium (Mg)	ug/L	-	8600	18000	50	9405905
Total Manganese (Mn)	ug/L	-	20	51	2.0	9405905
Total Nickel (Ni)	ug/L	25	<1.0	1.3	1.0	9405905
Dissolved Potassium (K)	ug/L	-	1400	4700	200	9404877
Total Potassium (K)	ug/L	-	1300	4500	200	9405905
Dissolved Sodium (Na)	ug/L	-	6100	57000	100	9404877
Total Sodium (Na)	ug/L	-	5100	52000	100	9405905
Total Zinc (Zn)	ug/L	30	<5.0	<5.0	5.0	9405905
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Criteria: Ontario Provincial Water Quality Objectives						
Ref. to MOEE Water Management document dated Feb.1999						



BUREAU
VERITAS

Bureau Veritas Job #: C4E9011
Report Date: 2024/05/27

WSP Canada Inc.
Client Project #: CA0023633.8620
Sampler Initials: CL

TEST SUMMARY

Bureau Veritas ID: ZEW772
Sample ID: POND
Matrix: Water

Collected: 2024/05/16
Shipped:
Received: 2024/05/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	9402436	N/A	2024/05/23	Nachiketa Gohil
Carbonate, Bicarbonate and Hydroxide	CALC	9399781	N/A	2024/05/24	Automated Statchk
Chloride by Automated Colourimetry	SKAL	9402463	N/A	2024/05/24	Geetee Noorzaad
Conductivity	AT	9402437	N/A	2024/05/23	Nachiketa Gohil
Dissolved Organic Carbon (DOC)	TOCV/NDIR	9402789	N/A	2024/05/22	Gyulshen Idriz
Fluoride	ISE	9402431	2024/05/18	2024/05/23	Surinder Rai
Hardness (calculated as CaCO3)		9399785	N/A	2024/05/22	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	9404877	2024/05/21	2024/05/22	Nan Raykha
Total Metals Analysis by ICPMS	ICP/MS	9405905	2024/05/22	2024/05/22	Thuy Linh Nguyen
Anion and Cation Sum	CALC	9399778	N/A	2024/05/24	Automated Statchk
Total Ammonia-N	LACH/NH4	9403839	N/A	2024/05/27	Massarat Jan
Nitrate & Nitrite as Nitrogen in Water	LACH	9402435	N/A	2024/05/24	Jinal Chavda
Animal and Vegetable Oil and Grease	BAL	9399780	N/A	2024/05/21	Automated Statchk
Total Oil and Grease	BAL	9402916	2024/05/19	2024/05/21	Navneet Singh
pH	AT	9402438	2024/05/18	2024/05/23	Nachiketa Gohil
Phenols (4AAP)	TECH/PHEN	9409799	N/A	2024/05/23	Chandra Nandlal
Orthophosphate	KONE	9402465	N/A	2024/05/21	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	9399783	N/A	2024/05/24	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	9399784	N/A	2024/05/24	Automated Statchk
Sulphate by Automated Turbidimetry	SKAL	9402464	N/A	2024/05/24	Geetee Noorzaad
Total Dissolved Solids	BAL	9408778	2024/05/23	2024/05/24	Madhav Somani
Total Kjeldahl Nitrogen in Water	SKAL	9403930	2024/05/21	2024/05/22	Rajni Tyagi
Total Phosphorus (Colourimetric)	SKAL/P	9404368	2024/05/21	2024/05/23	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	9402917	2024/05/19	2024/05/21	Navneet Singh
Total Suspended Solids	BAL	9407845	2024/05/23	2024/05/23	Madhav Somani
Turbidity	AT	9401958	N/A	2024/05/18	Kien Tran

Bureau Veritas ID: ZEW772 Dup
Sample ID: POND
Matrix: Water

Collected: 2024/05/16
Shipped:
Received: 2024/05/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	9402436	N/A	2024/05/23	Nachiketa Gohil
Conductivity	AT	9402437	N/A	2024/05/23	Nachiketa Gohil
Fluoride	ISE	9402431	2024/05/18	2024/05/23	Surinder Rai
pH	AT	9402438	2024/05/18	2024/05/23	Nachiketa Gohil
Phenols (4AAP)	TECH/PHEN	9409799	N/A	2024/05/23	Chandra Nandlal
Total Phosphorus (Colourimetric)	SKAL/P	9404368	2024/05/21	2024/05/23	Muskan

Bureau Veritas ID: ZEW773
Sample ID: SW1
Matrix: Water

Collected: 2024/05/16
Shipped:
Received: 2024/05/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	9402442	N/A	2024/05/23	Nachiketa Gohil



BUREAU
VERITAS

Bureau Veritas Job #: C4E9011
Report Date: 2024/05/27

WSP Canada Inc.
Client Project #: CA0023633.8620
Sampler Initials: CL

TEST SUMMARY

Bureau Veritas ID: ZEW773
Sample ID: SW1
Matrix: Water

Collected: 2024/05/16
Shipped:
Received: 2024/05/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonate, Bicarbonate and Hydroxide	CALC	9399781	N/A	2024/05/24	Automated Statchk
Chloride by Automated Colourimetry	SKAL	9402463	N/A	2024/05/24	Geetee Noorzaad
Conductivity	AT	9402444	N/A	2024/05/23	Nachiketa Gohil
Dissolved Organic Carbon (DOC)	TOCV/NDIR	9402788	N/A	2024/05/22	Gyulshen Idriz
Fluoride	ISE	9402445	2024/05/18	2024/05/23	Nachiketa Gohil
Hardness (calculated as CaCO3)		9399785	N/A	2024/05/22	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	9404877	2024/05/21	2024/05/22	Nan Raykha
Total Metals Analysis by ICPMS	ICP/MS	9405905	2024/05/22	2024/05/22	Thuy Linh Nguyen
Anion and Cation Sum	CALC	9399778	N/A	2024/05/24	Automated Statchk
Total Ammonia-N	LACH/NH4	9403839	N/A	2024/05/27	Massarat Jan
Nitrate & Nitrite as Nitrogen in Water	LACH	9402435	N/A	2024/05/24	Jinal Chavda
Animal and Vegetable Oil and Grease	BAL	9399780	N/A	2024/05/21	Automated Statchk
Total Oil and Grease	BAL	9402916	2024/05/19	2024/05/21	Navneet Singh
pH	AT	9402448	2024/05/18	2024/05/23	Nachiketa Gohil
Phenols (4AAP)	TECH/PHEN	9409799	N/A	2024/05/23	Chandra Nandlal
Orthophosphate	KONE	9402465	N/A	2024/05/21	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	9399783	N/A	2024/05/24	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	9399784	N/A	2024/05/24	Automated Statchk
Sulphate by Automated Turbidimetry	SKAL	9402464	N/A	2024/05/24	Geetee Noorzaad
Total Dissolved Solids	BAL	9408778	2024/05/23	2024/05/24	Madhav Somani
Total Kjeldahl Nitrogen in Water	SKAL	9403930	2024/05/21	2024/05/22	Rajni Tyagi
Total Phosphorus (Colourimetric)	SKAL/P	9404368	2024/05/21	2024/05/23	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	9402917	2024/05/19	2024/05/21	Navneet Singh
Total Suspended Solids	BAL	9406490	2024/05/23	2024/05/24	Darshan Patel
Turbidity	AT	9401958	N/A	2024/05/18	Kien Tran

Bureau Veritas ID: ZEW773 Dup
Sample ID: SW1
Matrix: Water

Collected: 2024/05/16
Shipped:
Received: 2024/05/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Lab Filtered Metals by ICPMS	ICP/MS	9404877	2024/05/21	2024/05/22	Nan Raykha

Bureau Veritas ID: ZEW774
Sample ID: SW2
Matrix: Water

Collected: 2024/05/16
Shipped:
Received: 2024/05/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	9402436	N/A	2024/05/23	Nachiketa Gohil
Carbonate, Bicarbonate and Hydroxide	CALC	9399781	N/A	2024/05/24	Automated Statchk
Chloride by Automated Colourimetry	SKAL	9402463	N/A	2024/05/24	Geetee Noorzaad
Conductivity	AT	9402437	N/A	2024/05/23	Nachiketa Gohil
Dissolved Organic Carbon (DOC)	TOCV/NDIR	9402789	N/A	2024/05/22	Gyulshen Idriz
Fluoride	ISE	9402431	2024/05/18	2024/05/23	Surinder Rai
Hardness (calculated as CaCO3)		9399785	N/A	2024/05/22	Automated Statchk



BUREAU
VERITAS

Bureau Veritas Job #: C4E9011
Report Date: 2024/05/27

WSP Canada Inc.
Client Project #: CA0023633.8620
Sampler Initials: CL

TEST SUMMARY

Bureau Veritas ID: ZEW774
Sample ID: SW2
Matrix: Water

Collected: 2024/05/16
Shipped:
Received: 2024/05/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Lab Filtered Metals by ICPMS	ICP/MS	9404877	2024/05/21	2024/05/22	Nan Raykha
Total Metals Analysis by ICPMS	ICP/MS	9405905	2024/05/22	2024/05/22	Thuy Linh Nguyen
Anion and Cation Sum	CALC	9399778	N/A	2024/05/24	Automated Statchk
Total Ammonia-N	LACH/NH4	9403790	N/A	2024/05/23	Massarat Jan
Nitrate & Nitrite as Nitrogen in Water	LACH	9402435	N/A	2024/05/24	Jinal Chavda
Animal and Vegetable Oil and Grease	BAL	9399780	N/A	2024/05/21	Automated Statchk
Total Oil and Grease	BAL	9402916	2024/05/19	2024/05/21	Navneet Singh
pH	AT	9402438	2024/05/18	2024/05/23	Nachiketa Gohil
Phenols (4AAP)	TECH/PHEN	9409799	N/A	2024/05/23	Chandra Nandlal
Orthophosphate	KONE	9402465	N/A	2024/05/21	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	9399783	N/A	2024/05/24	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	9399784	N/A	2024/05/24	Automated Statchk
Sulphate by Automated Turbidimetry	SKAL	9402464	N/A	2024/05/24	Geetee Noorzaad
Total Dissolved Solids	BAL	9409509	2024/05/23	2024/05/24	Darshan Patel
Total Kjeldahl Nitrogen in Water	SKAL	9403930	2024/05/21	2024/05/22	Rajni Tyagi
Total Phosphorus (Colourimetric)	SKAL/P	9404368	2024/05/21	2024/05/23	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	9402917	2024/05/19	2024/05/21	Navneet Singh
Total Suspended Solids	BAL	9406490	2024/05/23	2024/05/24	Darshan Patel
Turbidity	AT	9401958	N/A	2024/05/18	Kien Tran

Bureau Veritas ID: ZEW775
Sample ID: DUP3
Matrix: Water

Collected: 2024/05/16
Shipped:
Received: 2024/05/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	9402442	N/A	2024/05/23	Nachiketa Gohil
Carbonate, Bicarbonate and Hydroxide	CALC	9399781	N/A	2024/05/24	Automated Statchk
Chloride by Automated Colourimetry	SKAL	9402463	N/A	2024/05/24	Geetee Noorzaad
Conductivity	AT	9402444	N/A	2024/05/23	Nachiketa Gohil
Dissolved Organic Carbon (DOC)	TOCV/NDIR	9402788	N/A	2024/05/22	Gyulshen Idriz
Fluoride	ISE	9402445	2024/05/18	2024/05/23	Nachiketa Gohil
Hardness (calculated as CaCO3)		9399785	N/A	2024/05/22	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	9404877	2024/05/21	2024/05/22	Nan Raykha
Total Metals Analysis by ICPMS	ICP/MS	9405905	2024/05/22	2024/05/22	Thuy Linh Nguyen
Anion and Cation Sum	CALC	9399778	N/A	2024/05/24	Automated Statchk
Total Ammonia-N	LACH/NH4	9403839	N/A	2024/05/27	Massarat Jan
Nitrate & Nitrite as Nitrogen in Water	LACH	9402435	N/A	2024/05/24	Jinal Chavda
Animal and Vegetable Oil and Grease	BAL	9399780	N/A	2024/05/21	Automated Statchk
Total Oil and Grease	BAL	9402916	2024/05/19	2024/05/21	Navneet Singh
pH	AT	9402448	2024/05/18	2024/05/23	Nachiketa Gohil
Phenols (4AAP)	TECH/PHEN	9409799	N/A	2024/05/23	Chandra Nandlal
Orthophosphate	KONE	9402465	N/A	2024/05/21	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	9399783	N/A	2024/05/24	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	9399784	N/A	2024/05/24	Automated Statchk
Sulphate by Automated Turbidimetry	SKAL	9402464	N/A	2024/05/24	Geetee Noorzaad



BUREAU
VERITAS

Bureau Veritas Job #: C4E9011
Report Date: 2024/05/27

WSP Canada Inc.
Client Project #: CA0023633.8620
Sampler Initials: CL

TEST SUMMARY

Bureau Veritas ID: ZEW775
Sample ID: DUP3
Matrix: Water

Collected: 2024/05/16
Shipped:
Received: 2024/05/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Dissolved Solids	BAL	9409509	2024/05/23	2024/05/24	Darshan Patel
Total Kjeldahl Nitrogen in Water	SKAL	9403930	2024/05/21	2024/05/22	Rajni Tyagi
Total Phosphorus (Colourimetric)	SKAL/P	9404368	2024/05/21	2024/05/23	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	9402917	2024/05/19	2024/05/21	Navneet Singh
Total Suspended Solids	BAL	9406490	2024/05/23	2024/05/24	Darshan Patel
Turbidity	AT	9401958	N/A	2024/05/18	Kien Tran



BUREAU
VERITAS

Bureau Veritas Job #: C4E9011
Report Date: 2024/05/27

WSP Canada Inc.
Client Project #: CA0023633.8620
Sampler Initials: CL

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.3°C
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Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C4E9011
Report Date: 2024/05/27

WSP Canada Inc.
Client Project #: CA0023633.8620
Sampler Initials: CL

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9401958	KIT	Spiked Blank	Turbidity	2024/05/18		100	%	80 - 120
9401958	KIT	Method Blank	Turbidity	2024/05/18	<0.1		NTU	
9401958	KIT	RPD	Turbidity	2024/05/18	15		%	20
9402431	SAU	Matrix Spike [ZEW772-02]	Fluoride (F-)	2024/05/23		102	%	80 - 120
9402431	SAU	Spiked Blank	Fluoride (F-)	2024/05/23		101	%	80 - 120
9402431	SAU	Method Blank	Fluoride (F-)	2024/05/23	<0.10		mg/L	
9402431	SAU	RPD [ZEW772-02]	Fluoride (F-)	2024/05/23	7.1		%	20
9402435	J1C	Matrix Spike	Nitrite (N)	2024/05/24		96	%	80 - 120
			Nitrate (N)	2024/05/24		83	%	80 - 120
9402435	J1C	Spiked Blank	Nitrite (N)	2024/05/24		100	%	80 - 120
			Nitrate (N)	2024/05/24		87	%	80 - 120
9402435	J1C	Method Blank	Nitrite (N)	2024/05/24	<0.010		mg/L	
			Nitrate (N)	2024/05/24	<0.10		mg/L	
9402435	J1C	RPD	Nitrite (N)	2024/05/24	NC		%	20
			Nitrate (N)	2024/05/24	NC		%	20
9402436	NGI	Spiked Blank	Alkalinity (Total as CaCO3)	2024/05/23		96	%	85 - 115
9402436	NGI	Method Blank	Alkalinity (Total as CaCO3)	2024/05/23	<1.0		mg/L	
9402436	NGI	RPD [ZEW772-02]	Alkalinity (Total as CaCO3)	2024/05/23	0.81		%	20
9402437	NGI	Spiked Blank	Conductivity	2024/05/23		100	%	85 - 115
9402437	NGI	Method Blank	Conductivity	2024/05/23	<1.0		umho/cm	
9402437	NGI	RPD [ZEW772-02]	Conductivity	2024/05/23	0.14		%	10
9402438	NGI	Spiked Blank	pH	2024/05/23		102	%	98 - 103
9402438	NGI	RPD [ZEW772-02]	pH	2024/05/23	0.13		%	N/A
9402442	NGI	Spiked Blank	Alkalinity (Total as CaCO3)	2024/05/23		96	%	85 - 115
9402442	NGI	Method Blank	Alkalinity (Total as CaCO3)	2024/05/23	<1.0		mg/L	
9402442	NGI	RPD	Alkalinity (Total as CaCO3)	2024/05/23	0.64		%	20
9402444	NGI	Spiked Blank	Conductivity	2024/05/23		100	%	85 - 115
9402444	NGI	Method Blank	Conductivity	2024/05/23	<1.0		umho/cm	
9402444	NGI	RPD	Conductivity	2024/05/23	0.63		%	10
9402445	NGI	Matrix Spike	Fluoride (F-)	2024/05/23		100	%	80 - 120
9402445	NGI	Spiked Blank	Fluoride (F-)	2024/05/23		99	%	80 - 120
9402445	NGI	Method Blank	Fluoride (F-)	2024/05/23	<0.10		mg/L	
9402445	NGI	RPD	Fluoride (F-)	2024/05/23	2.4		%	20
9402448	NGI	Spiked Blank	pH	2024/05/23		102	%	98 - 103
9402448	NGI	RPD	pH	2024/05/23	0.076		%	N/A
9402463	GNO	Matrix Spike	Dissolved Chloride (Cl-)	2024/05/24		101	%	80 - 120
9402463	GNO	Spiked Blank	Dissolved Chloride (Cl-)	2024/05/24		102	%	80 - 120
9402463	GNO	Method Blank	Dissolved Chloride (Cl-)	2024/05/24	<1.0		mg/L	
9402463	GNO	RPD	Dissolved Chloride (Cl-)	2024/05/24	NC		%	20
9402464	GNO	Matrix Spike	Dissolved Sulphate (SO4)	2024/05/24		103	%	75 - 125
9402464	GNO	Spiked Blank	Dissolved Sulphate (SO4)	2024/05/24		98	%	80 - 120
9402464	GNO	Method Blank	Dissolved Sulphate (SO4)	2024/05/24	<1.0		mg/L	
9402464	GNO	RPD	Dissolved Sulphate (SO4)	2024/05/24	6.1		%	20
9402465	ADB	Matrix Spike	Orthophosphate (P)	2024/05/21		92	%	75 - 125
9402465	ADB	Spiked Blank	Orthophosphate (P)	2024/05/21		91	%	80 - 120
9402465	ADB	Method Blank	Orthophosphate (P)	2024/05/21	<0.010		mg/L	
9402465	ADB	RPD	Orthophosphate (P)	2024/05/21	NC		%	20
9402788	GID	Matrix Spike	Dissolved Organic Carbon	2024/05/22		92	%	80 - 120
9402788	GID	Spiked Blank	Dissolved Organic Carbon	2024/05/22		98	%	80 - 120
9402788	GID	Method Blank	Dissolved Organic Carbon	2024/05/22	<0.40		mg/L	
9402788	GID	RPD	Dissolved Organic Carbon	2024/05/22	5.2		%	20



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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9402789	GID	Matrix Spike	Dissolved Organic Carbon	2024/05/22		94	%	80 - 120
9402789	GID	Spiked Blank	Dissolved Organic Carbon	2024/05/22		97	%	80 - 120
9402789	GID	Method Blank	Dissolved Organic Carbon	2024/05/22	<0.40		mg/L	
9402789	GID	RPD	Dissolved Organic Carbon	2024/05/22	8.0		%	20
9402916	NSG	Spiked Blank	Total Oil & Grease	2024/05/21		99	%	80 - 110
9402916	NSG	RPD	Total Oil & Grease	2024/05/21	0		%	25
9402916	NSG	Method Blank	Total Oil & Grease	2024/05/21	<0.50		mg/L	
9402917	NSG	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2024/05/21		97	%	65 - 130
9402917	NSG	RPD	Total Oil & Grease Mineral/Synthetic	2024/05/21	0		%	25
9402917	NSG	Method Blank	Total Oil & Grease Mineral/Synthetic	2024/05/21	<0.50		mg/L	
9403790	MJ1	Matrix Spike	Total Ammonia-N	2024/05/23		106	%	75 - 125
9403790	MJ1	Spiked Blank	Total Ammonia-N	2024/05/23		102	%	80 - 120
9403790	MJ1	Method Blank	Total Ammonia-N	2024/05/23	<0.050		mg/L	
9403790	MJ1	RPD	Total Ammonia-N	2024/05/23	NC		%	20
9403839	MJ1	Matrix Spike	Total Ammonia-N	2024/05/27		109	%	75 - 125
9403839	MJ1	Spiked Blank	Total Ammonia-N	2024/05/27		103	%	80 - 120
9403839	MJ1	Method Blank	Total Ammonia-N	2024/05/27	<0.050		mg/L	
9403839	MJ1	RPD	Total Ammonia-N	2024/05/27	4.9		%	20
9403930	RTY	Matrix Spike	Total Kjeldahl Nitrogen (TKN)	2024/05/22		102	%	80 - 120
9403930	RTY	QC Standard	Total Kjeldahl Nitrogen (TKN)	2024/05/22		100	%	80 - 120
9403930	RTY	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2024/05/22		101	%	80 - 120
9403930	RTY	Method Blank	Total Kjeldahl Nitrogen (TKN)	2024/05/22	<0.10		mg/L	
9403930	RTY	RPD	Total Kjeldahl Nitrogen (TKN)	2024/05/22	5.9		%	20
9404368	MUM	Matrix Spike [ZEW772-04]	Total Phosphorus	2024/05/23		91	%	80 - 120
9404368	MUM	QC Standard	Total Phosphorus	2024/05/23		98	%	80 - 120
9404368	MUM	Spiked Blank	Total Phosphorus	2024/05/23		93	%	80 - 120
9404368	MUM	Method Blank	Total Phosphorus	2024/05/23	<0.004		mg/L	
9404368	MUM	RPD [ZEW772-04]	Total Phosphorus	2024/05/23	NC		%	20
9404877	N_R	Matrix Spike [ZEW773-02]	Dissolved Calcium (Ca)	2024/05/22		NC	%	80 - 120
			Dissolved Magnesium (Mg)	2024/05/22		109	%	80 - 120
			Dissolved Potassium (K)	2024/05/22		113	%	80 - 120
			Dissolved Sodium (Na)	2024/05/22		NC	%	80 - 120
9404877	N_R	Spiked Blank	Dissolved Calcium (Ca)	2024/05/22		104	%	80 - 120
			Dissolved Magnesium (Mg)	2024/05/22		104	%	80 - 120
			Dissolved Potassium (K)	2024/05/22		104	%	80 - 120
			Dissolved Sodium (Na)	2024/05/22		102	%	80 - 120
9404877	N_R	Method Blank	Dissolved Calcium (Ca)	2024/05/22	<200		ug/L	
			Dissolved Magnesium (Mg)	2024/05/22	<50		ug/L	
			Dissolved Potassium (K)	2024/05/22	<200		ug/L	
			Dissolved Sodium (Na)	2024/05/22	130, RDL=100 (1)		ug/L	
9404877	N_R	RPD [ZEW773-02]	Dissolved Calcium (Ca)	2024/05/22	17		%	20
			Dissolved Magnesium (Mg)	2024/05/22	12		%	20
			Dissolved Potassium (K)	2024/05/22	18		%	20
			Dissolved Sodium (Na)	2024/05/22	14		%	20
9405905	TLG	Matrix Spike	Total Arsenic (As)	2024/05/22		99	%	80 - 120
			Total Cadmium (Cd)	2024/05/22		99	%	80 - 120
			Total Calcium (Ca)	2024/05/22		NC	%	80 - 120
			Total Chromium (Cr)	2024/05/22		95	%	80 - 120
			Total Copper (Cu)	2024/05/22		100	%	80 - 120



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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9405905	TLG	Spiked Blank	Total Iron (Fe)	2024/05/22		99	%	80 - 120
			Total Lead (Pb)	2024/05/22		100	%	80 - 120
			Total Magnesium (Mg)	2024/05/22		92	%	80 - 120
			Total Manganese (Mn)	2024/05/22		95	%	80 - 120
			Total Nickel (Ni)	2024/05/22		92	%	80 - 120
			Total Potassium (K)	2024/05/22		95	%	80 - 120
			Total Sodium (Na)	2024/05/22		NC	%	80 - 120
			Total Zinc (Zn)	2024/05/22		98	%	80 - 120
			Total Arsenic (As)	2024/05/22		99	%	80 - 120
			Total Cadmium (Cd)	2024/05/22		97	%	80 - 120
			Total Calcium (Ca)	2024/05/22		100	%	80 - 120
			Total Chromium (Cr)	2024/05/22		95	%	80 - 120
			Total Copper (Cu)	2024/05/22		102	%	80 - 120
			Total Iron (Fe)	2024/05/22		100	%	80 - 120
			Total Lead (Pb)	2024/05/22		98	%	80 - 120
			9405905	TLG	Method Blank	Total Magnesium (Mg)	2024/05/22	
Total Manganese (Mn)	2024/05/22					95	%	80 - 120
Total Nickel (Ni)	2024/05/22					93	%	80 - 120
Total Potassium (K)	2024/05/22					98	%	80 - 120
Total Sodium (Na)	2024/05/22					94	%	80 - 120
Total Zinc (Zn)	2024/05/22					100	%	80 - 120
Total Arsenic (As)	2024/05/22	<1.0					ug/L	
Total Cadmium (Cd)	2024/05/22	<0.090					ug/L	
Total Calcium (Ca)	2024/05/22	<200					ug/L	
Total Chromium (Cr)	2024/05/22	<5.0					ug/L	
Total Copper (Cu)	2024/05/22	<0.90					ug/L	
Total Iron (Fe)	2024/05/22	<100					ug/L	
Total Lead (Pb)	2024/05/22	<0.50					ug/L	
Total Magnesium (Mg)	2024/05/22	<50					ug/L	
Total Manganese (Mn)	2024/05/22	<2.0					ug/L	
Total Nickel (Ni)	2024/05/22	<1.0					ug/L	
9405905	TLG	RPD	Total Potassium (K)	2024/05/22	<200		ug/L	
			Total Sodium (Na)	2024/05/22	<100		ug/L	
			Total Zinc (Zn)	2024/05/22	<5.0		ug/L	
			Total Arsenic (As)	2024/05/22	NC		%	20
			Total Cadmium (Cd)	2024/05/22	NC		%	20
			Total Calcium (Ca)	2024/05/22	2.3		%	20
			Total Chromium (Cr)	2024/05/22	NC		%	20
			Total Copper (Cu)	2024/05/22	3.7		%	20
			Total Iron (Fe)	2024/05/22	NC		%	20
			Total Lead (Pb)	2024/05/22	NC		%	20
			Total Magnesium (Mg)	2024/05/22	3.2		%	20
			Total Manganese (Mn)	2024/05/22	NC		%	20
			Total Nickel (Ni)	2024/05/22	NC		%	20
			Total Potassium (K)	2024/05/22	0.55		%	20
			Total Sodium (Na)	2024/05/22	2.5		%	20
			Total Zinc (Zn)	2024/05/22	NC		%	20
9406490	DPC	Spiked Blank	Total Suspended Solids	2024/05/24		98	%	80 - 120
9406490	DPC	Method Blank	Total Suspended Solids	2024/05/24	<10		mg/L	
9406490	DPC	RPD	Total Suspended Solids	2024/05/24	NC		%	20
9407845	MV1	Spiked Blank	Total Suspended Solids	2024/05/23		98	%	80 - 120
9407845	MV1	Method Blank	Total Suspended Solids	2024/05/23	<10		mg/L	



QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9407845	MV1	RPD	Total Suspended Solids	2024/05/23	NC		%	20
9408778	MV1	Spiked Blank	Total Dissolved Solids	2024/05/24		97	%	80 - 120
9408778	MV1	Method Blank	Total Dissolved Solids	2024/05/24	<10		mg/L	
9408778	MV1	RPD	Total Dissolved Solids	2024/05/24	3.0		%	20
9409509	DPC	Spiked Blank	Total Dissolved Solids	2024/05/24		95	%	80 - 120
9409509	DPC	Method Blank	Total Dissolved Solids	2024/05/24	<10		mg/L	
9409509	DPC	RPD	Total Dissolved Solids	2024/05/24	5.1		%	20
9409799	C_N	Matrix Spike [ZEW772-06]	Phenols-4AAP	2024/05/23		101	%	80 - 120
9409799	C_N	Spiked Blank	Phenols-4AAP	2024/05/23		103	%	80 - 120
9409799	C_N	Method Blank	Phenols-4AAP	2024/05/23	<0.0010		mg/L	
9409799	C_N	RPD [ZEW772-06]	Phenols-4AAP	2024/05/23	NC		%	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Analyte was detected in the method blank at a level marginally above the detection limit. Sample results have not been blank corrected. Those results at or near the detection limit may be biased high.



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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anastassia Hamanov, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



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Exceedance Summary Table – Prov. Water Quality Obj.

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
SW1	ZEW773-08	Total Iron (Fe)	300	340	100	ug/L
SW1	ZEW773-04	Total Phosphorus	0.01	0.012	0.004	mg/L
SW2	ZEW774-04	Total Phosphorus	0.01	0.012	0.004	mg/L
DUP3	ZEW775-08	Total Iron (Fe)	300	340	100	ug/L

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

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