



**August 2016**

## **MCCARTHY QUARRY**

# **Environmental Compliance Approval Quarterly Monitoring Report (May to August)**

**Submitted to:**

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**REPORT**



**Report Number: 1407634**

**Distribution:**

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### 1.0 INTRODUCTION

Golder Associates Ltd. (Golder) was retained by QBJR/Coco Aggregates Inc. (Coco) to prepare a quarterly compliance report for the McCarthy Quarry located in the Township of Ramara, County of Simcoe (Figure 1). The Environmental Compliance Approval (ECA) No. 4731-987KM8 issued on October 15, 2013 requires this task. A copy of the ECA No. 4731-987KM8 is found in Appendix A.

The following report addresses the requirements described in Sections 7 and 8 of the ECA. Included herein are a brief background, summary and discussion of the sampling results and data collected on-site during each sampling event.

### 2.0 BACKGROUND

The McCarthy Quarry dewatering system consists of the collection of groundwater and surface water (hereafter referred to as “quarry discharge”) at the base of the quarry floor in a quarry sump which is pumped to a settling pond, at grade, to the south of the active quarry area (Figure 1). The sump is equipped with a 4-inch Grindex pump which is rated at 35 L/sec and is attached to a 4-inch (101 mm) diameter discharge line. Water is pumped from the quarry floor up the quarry face to a 4-inch (101 mm) diameter pipeline that directs the water to the 14,000 m<sup>3</sup> settling pond. The water in the settling pond is equipped with a Hickenbottom control structure that discharges the water 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 to the Talbot River, which discharges into Lake Simcoe.

The dewatering activities from the McCarthy Quarry are currently carried out under the existing ECA No. 4731-987KM8 issued on October 15, 2013. Under the current ECA Coco is permitted to pump water from the quarry sump at a rate of 4,545 L/min (76 L/sec).

### 3.0 QUARRY DISCHARGE MONITORING RESULTS

Weekly monitoring of the quarry discharge is required by the ECA at three locations, as shown on Figure 1:

- The outfall of the settling pond (labelled as McCarthy Pond);
- The culvert along Concession Road 1 at the McCarthy property (SW1) downstream of the McCarthy Pond discharge location; and,
- 260 m north of the intersection of Concession Road 1 and the Mara Eldon Boundary Road (labelled as SW2) representing upstream conditions.

Weekly quarry discharge monitoring is required per Section 7(2) for Total Suspended Solids (TSS), Oil and Grease, Phenolics (4AAP) and pH at the McCarthy Pond. Additional water quality sampling is required under Section 7(3) at a semi-annual frequency at all three locations, recognizing that, as of April 24, 2014 this monitoring was reduced from weekly sampling frequency to a semi-annual frequency following one year of quarry operation according to Section 7(7). The parameters required for semi-annual water quality monitoring at all three locations are listed in Table 3 of the ECA. Monthly acute lethality is also required at the McCarthy Pond under Section 8.

As per Section 7(8) an inline flow meter is installed in the discharge line of the sump pump in order to measure continuous flow rates. The flow rates are recorded and provided to Golder by staff at McCarthy Quarry.



The weekly quarry discharge samples (Section 7(2)) were collected by staff at the McCarthy Quarry. The semi-annual water quality samples (Section 7(3) and Section 7(7)) were collected by Golder. Both the weekly and semi-annual water quality samples were sent to Maxxam Analytics Laboratory for analysis. Additionally, the monthly lethality samples were collected by Golder and sent to AGAT Laboratories Ltd.

The weekly water quality sample was not collected from the McCarthy Pond on the weeks of May 2 to 6, 2016, May 9 to 13, 2016 and June 27 to July 1, 2016.

### 4.0 QUARRY DISCHARGE MONITORING RESULTS

Results of the weekly quarry discharge monitoring are presented in Table 1; the monthly averages for the quarry discharge monitoring are presented in Table 2; the semi-annual surface water sampling results are presented in Table 3 and the acute lethality results are presented in Table 4. All laboratory certificates of analysis for the May to August 2016 monitoring period are included in Appendix B.

The TSS, pH, Oil and Grease and Phenol (4AAP) concentrations were all below the daily and monthly concentration limits of the ECA. The quarry discharge between May and August, 2016 was found to be non-lethal to rainbow trout and *Daphnia magna* (Table 4).

The rate and volume of discharge from the quarry is measured on site by an inline flow meter in the discharge line from the quarry sump. The pump records are provided by McCarthy Quarry staff. The pump records for May to August, 2016 are found in Table 6. The discharge rate between May and August, 2016 was below the permitted rate of 4,545 L/min (76 L/sec).

### 5.0 SUMMARY AND RECOMMENDATIONS

- All samples met the daily concentration limits of the ECA No. 4731-987KM8.
- The pH of the quarry discharge was maintained between 6.0 and 9.5
- The quarry discharge was non-lethal to rainbow trout and *Daphnia magna* at all times. Zero rainbow trout and zero *Daphnia* died during lethality testing during the past quarter.



## Report Signature Page

**GOLDER ASSOCIATES LTD.**

Jamie Bonany, M.A.Sc.  
Project Scientist

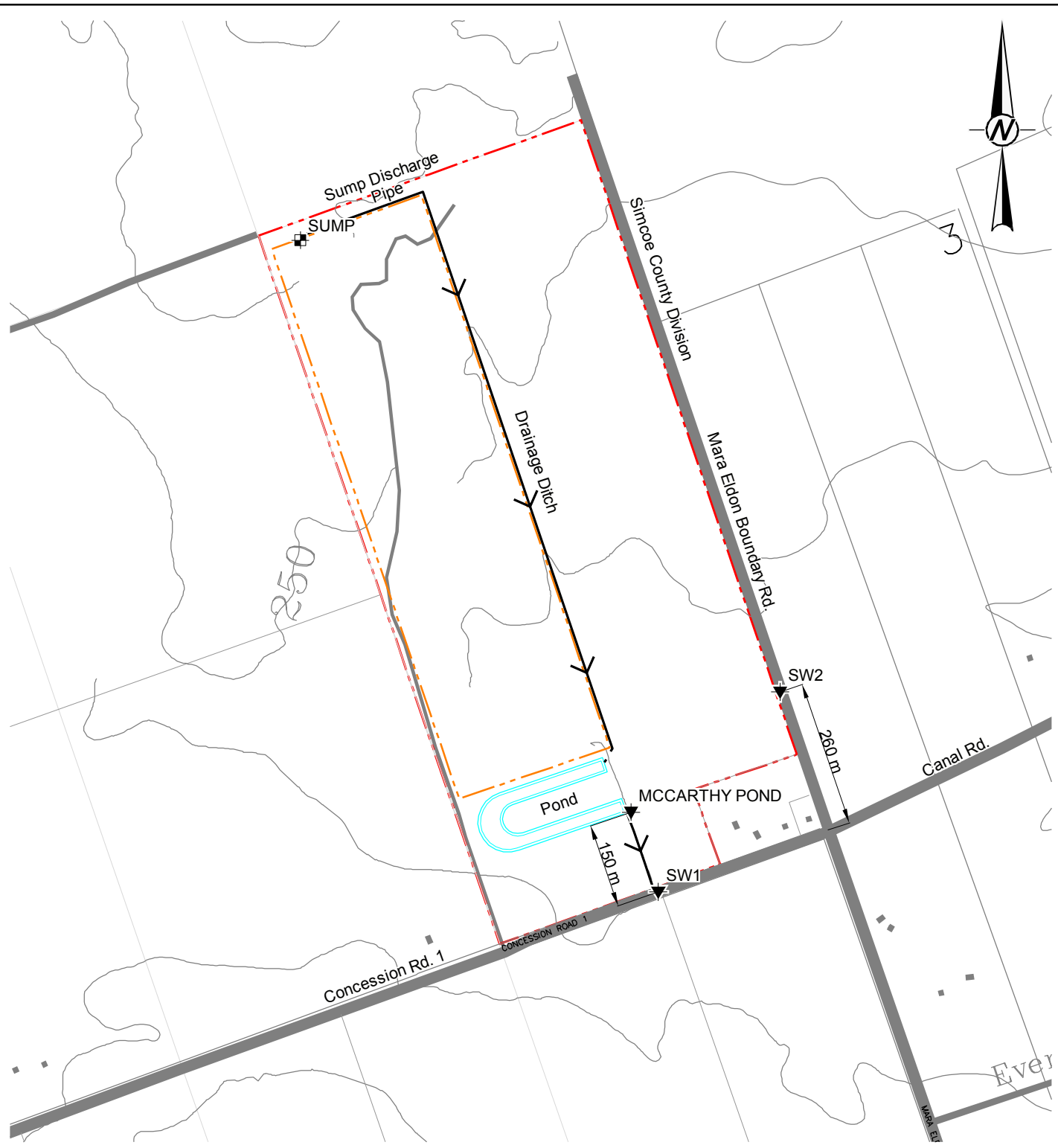
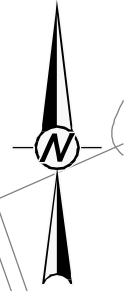
John Easton, M.Sc., P.Geo.  
Associate Senior Hydrogeologist

JEB/JAE/plc





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# FIGURE

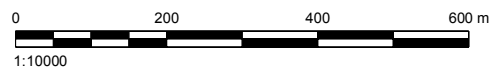


**LEGEND**

	Approximate Property Boundary
	Approximate Licenced Boundary
	5 m Contour Line
	Surface Water Sampling Location

**REFERENCES AND NOTES**

1. Projection UTM NAD83 Zone 17
2. Mapping based on ESRI Geography Network OBM Features and Bing Orthophotos



CLIENT  
COCO / QBJR AGGREGATES INC.

PROJECT  
STAN MCCARTHY QUARRY

TITLE  
**LOCATION MAP**

CONSULTANT	YYYY-MM-DD	2014-09-02
	PREPARED	STB
	DESIGN	
	REVIEW	
	APPROVED	



PROJECT No. 14-07634	SCALE AS SHOWN	Rev. AB	Figure 1
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANS/A 25 mm



# **TABLES**

**Table 1: McCarthy Pond Weekly Water Quality Results (May to August 2016)**

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO <sup>1</sup>	Daily Concentration Limit <sup>2</sup>	McCarthy Quarry									
					Pond									
Date					19-May-16	26-May-16	2-Jun-16	9-Jun-16	16-Jun-16	23-Jun-16	7-Jul-16	14-Jul-16	21-Jul-16	28-Jul-16
pH	pH	n/a		6.0-9.5	8.09	8.72	9.04	8.82	9.07	8.79	8.55	8.39	8.80	8.66
Total Suspended Solids	mg/L	1		30	<10	4	6	4	6	8	7	7	8	7
Total Oil and Grease	mg/L	0.5	Note 3	30	2.8	1.4	<0.5	0.8	<0.5	0.5	<0.5	<0.5	<0.5	2.0
Phenols (4AAP)	mg/L	<0.0010		0.04	<0.001	<0.001	<0.001	<0.001	<0.001	0.0014	<0.001	<0.001	<0.001	<0.001

**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 Permit to Take Waters 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 August 2016)**

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO <sup>1</sup>	Monthly Concentration Limit <sup>2</sup>	McCarthy Quarry		
					Pond		
Date					May	June	July
Total Suspended Solids	mg/L	1		15	7.0	6.0	7.3
Total Oil and Grease	mg/L	0.5	Note 3	15	2.1	0.6	0.9
Phenols (4AAP)	mg/L	<0.0010		0.02	<0.001	0.001	<0.001

**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 Permit to Take Waters 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 (May 2016)**

Sample ID Date	Unit	Reportable Detection Limit (RDL)	PWQO <sup>1</sup>	Interim PWQO <sup>2</sup>	PTTW Effluent Limits	McCarthy Quarry		
						Pond 30-May-16	SW1 30-May-16	SW2 30-May-16
<b>Field Measured Parameters</b>								
Conductivity	mS/cm					1217	1187	838
pH		n/a	6.5-8.5		6.0-9.5	9.35	8.47	7.82
Temperature	°C	n/a				26.8	27.8	26.5
<b>Calculated Parameters</b>								
Anion Sum	me/L	N/A				9.92	10.2	8.47
Cation Sum	me/L	N/A				11.6	10.9	9.58
Hardness (CaCO <sub>3</sub> )	mg/L	1.0				210	240	450
<b>Inorganics</b>								
Total Ammonia-N	mg/L	0.050				0.069	0.093	0.056
Conductivity	umho/cm	1.0				1100	1100	750
Total Dissolved Solids	mg/L	10				628	604	444
Fluoride (F <sup>-</sup> )	mg/L	0.10				0.67	0.63	0.11
Total Kjeldahl Nitrogen (TKN)	mg/L	0.10				0.64	0.67	0.7
Dissolved Organic Carbon	mg/L	0.20				5.8	7	13
pH		N/A	6.5-8.5		6.0-9.5	8.68	8.03	7.91
Phenols-4AAP	mg/L	0.0010			0.04	<0.0010	<0.0010	<0.0010
Total Phosphorus	mg/L	0.002		0.02 <sup>5b</sup>		0.019	0.043	0.12
Total Suspended Solids	mg/L	10			30	14	30	13
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	1				200	170	13
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	1				90	130	390
Dissolved Chloride (Cl)	mg/L	1				140	140	17
Nitrite (N)	mg/L	0.010				0.051	0.038	<0.010
Nitrate (N)	mg/L	0.10				1.01	0.77	<0.10
<b>Petroleum Hydrocarbons</b>								
Total Oil & Grease	mg/L	0.50	Note 3			<0.50	<0.50	<0.50
<b>Metals</b>								
Total Aluminum (Al)	ug/L	5		15-75 <sup>5a</sup>		150	380	22
Total Antimony (Sb)	ug/L	0.5		20		<0.50	<0.50	<0.50
Total Arsenic (As)	ug/L	1	100	5		<1.0	<1.0	<1.0
Total Barium (Ba)	ug/L	2				19	36	58
Total Beryllium (Be)	ug/L	0.5	11-1100 <sup>5c</sup>			<0.50	<0.50	<0.50
Total Boron (B)	ug/L	10		200		610	520	51
Total Cadmium (Cd)	ug/L	0.1	0.2	0.1-0.5 <sup>5d</sup>		<0.10	<0.10	<0.10
Dissolved Calcium (Ca)	ug/L	200				34	51	150
Total Calcium (Ca)	ug/L	200				31000	51000	130000
Total Chromium (Cr)	ug/L	5	1-89 <sup>5e</sup>			<5.0	<5.0	<5.0
Total Cobalt (Co)	ug/L	0.5	0.9			<0.50	<0.50	<0.50
Total Copper (Cu)	ug/L	1	5	1-5 <sup>5f</sup>		1.1	1.4	<1.0
Total Iron (Fe)	ug/L	100	300			160	520	860
Total Lead (Pb)	ug/L	0.5	5-25 <sup>5g</sup>	1-5 <sup>5h</sup>		<0.50	<0.50	<0.50
Dissolved Magnesium (Mg)	ug/L	50				30	27	18
Total Magnesium (Mg)	ug/L	50				28000	25000	18000
Total Manganese (Mn)	ug/L	2		40		19	170	230
Total Molybdenum (Mo)	ug/L	0.5	25			3.1	2.7	<0.50
Total Nickel (Ni)	ug/L	1				1.3	1.7	1.5
Dissolved Potassium (K)	ug/L	200				12	10	4
Total Potassium (K)	ug/L	200				10000	8800	3100
Total Selenium (Se)	ug/L	2	100			<2.0	<2.0	<2.0
Total Silicon (Si)	ug/L	50				590	1400	8600
Total Silver (Ag)	ug/L	0.1	0.1			<0.10	<0.10	<0.10
Dissolved Sodium (Na)	ug/L	100				160	130	13
Total Sodium (Na)	ug/L	100				140000	120000	12000
Total Strontium (Sr)	ug/L	1				1800	1600	400
Total Thallium (Tl)	ug/L	0.05		0.3		<0.050	<0.050	<0.050
Total Titanium (Ti)	ug/L	5				6.6	19	<5.0
Total Vanadium (V)	ug/L	0.5		6		0.56	1.6	0.68
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); shaded cells and italics denote Interim PWQO exceedance; some PWQOs are dependent on other water quality parameters hence the range in guideline values, refer to PWQO 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 "&lt;" denote concentrations that are below the laboratory Reportable Detection Limit (RDL).</p>								
<p><i>5a. Aluminum (Interim):</i></p> <p>- At pH 4.5 to 5.5 the Interim PWQO is 15 ug/L based on inorganic monomeric aluminum measured in clay-free samples.</p> <p>- At pH &gt;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.</p> <p>- At pH &gt;6.5 to 9.0, the Interim PWQO is 75 ug/L based on total aluminum measured in clay-free samples.</p> <p>- 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><i>5b. Phosphorus (Interim):</i></p> <p>- Current scientific evidence is insufficient to develop a firm Objective at this time.</p> <p>- Accordingly, the following phosphorus concentrations should be considered as general guidelines which should be supplemented by site-specific studies:</p> <p>(a) To avoid nuisance concentrations of algae in lakes, average total phosphorus concentrations for the ice-free period should not exceed 20 ug/L;</p> <p>(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;</p> <p>(c) Excessive plant growth in rivers and streams should be eliminated at a total phosphorus concentration below 30 ug/L.</p>		
<p><i>5c. Beryllium:</i> If Hardness &lt;75 mg/L (CaCO<sub>3</sub>), use 11 ug/L If Hardness &gt;75 mg/L (CaCO<sub>3</sub>), use 1100 ug/L</p>								
<p><i>5d. Cadmium (Interim):</i> If Hardness 0-100 mg/L (CaCO<sub>3</sub>), then use 0.1 ug/L If Hardness &gt;100 mg/L (CaCO<sub>3</sub>), then use 0.5 ug/L</p>								
<p><i>5e. Chromium:</i> 1 ug/L for hexavalent chromium (Cr VI) 8.9 ug/L for trivalent chromium (Cr III)</p>								
<p><i>5f. Copper (Interim):</i> If Hardness as CaCO<sub>3</sub> (mg/L) is 0 - 20, then use 1 ug/L If Hardness as CaCO<sub>3</sub> (mg/L) is &gt;20, then use 5 ug/L</p>								
<p><i>5g. Lead:</i> If Alkalinity as CaCO<sub>3</sub> (mg/L) is &lt; 20, use 5 ug/L If Alkalinity as CaCO<sub>3</sub> (mg/L) is 20 to 40, use 10 ug/L If Alkalinity as CaCO<sub>3</sub> (mg/L) is 40 to 80, use 20 ug/L If Alkalinity as CaCO<sub>3</sub> (mg/L) is &gt; 80, use 25 ug/L</p>								
<p><i>5h. Lead (Interim):</i> If Hardness as CaCO<sub>3</sub> (mg/L) is &lt; 30, then use 1 ug/L If Hardness as CaCO<sub>3</sub> (mg/L) is 30 to 80, then use 3 ug/L If Hardness as CaCO<sub>3</sub> (mg/L) is &gt; 80, then use 5 ug/L</p>								

**Table 4: Lethality Monitoring at McCarthy Pond**

	Unit	Mortality Limit	McCarthy Quarry		
Sample ID			Pond		
Date			30-May-16	28-Jun-16	27-Jul-16
Daphnia Magna	% Mortality Rate*	<50%	0	0	0
Rainbow Trout	% Mortality Rate*	<50%	0	0	0

\* Test results represent acute lethality (100% effluent) of toxicants to Daphnia Magna and Rainbow Trout

Table 5: 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)
<b>ECA Permitted Rate</b>					<b>6,550,000</b>	<b>76</b>	<b>4,545</b>
1-May-16	NO PUMP		0	0	-	-	-
2-May-16	7AM	3PM	28800	480	1,008,000	35	2,100
3-May-16	7AM	3PM	28800	480	1,008,000	35	2,100
4-May-16	7AM	3PM	28800	480	1,008,000	35	2,100
5-May-16	NO PUMP		0	0	-	-	-
6-May-16	NO PUMP		0	0	-	-	-
7-May-16	NO PUMP		0	0	-	-	-
8-May-16	NO PUMP		0	0	-	-	-
9-May-16	NO PUMP		0	0	-	-	-
10-May-16	NO PUMP		0	0	-	-	-
11-May-16	NO PUMP		0	0	-	-	-
12-May-16	NO PUMP		0	0	-	-	-
13-May-16	NO PUMP		0	0	-	-	-
14-May-16	NO PUMP		0	0	-	-	-
15-May-16	NO PUMP		0	0	-	-	-
16-May-16	7AM	5PM	36000	600	1,260,000	35	2,100
17-May-16	7AM	2PM	25200	420	882,000	35	2,100
18-May-16	7AM	3PM	28800	480	1,008,000	35	2,100
19-May-16	7AM	1PM	21600	360	756,000	35	2,100
20-May-16	7AM	1PM	21600	360	756,000	35	2,100
21-May-16	NO PUMP		0	0	-	-	-
22-May-16	NO PUMP		0	0	-	-	-
23-May-16	NO PUMP		0	0	-	-	-
24-May-16	7AM	3PM	28800	480	1,008,000	35	2,100
25-May-16	7AM	1PM	21600	360	756,000	35	2,100
26-May-16	7AM	12PM	18000	300	630,000	35	2,100
27-May-16	7AM	2PM	25200	420	882,000	35	2,100
28-May-16	NO PUMP		0	0	-	-	-
29-May-16	NO PUMP		0	0	-	-	-
30-May-16	NO PUMP		0	0	-	-	-
31-May-16	NO PUMP		0	0	-	-	-
1-Jun-16	NO PUMP		0	0	-	-	-
2-Jun-16	NO PUMP		0	0	-	-	-
3-Jun-16	NO PUMP		0	0	-	-	-
4-Jun-16	NO PUMP		0	0	-	-	-
5-Jun-16	NO PUMP		0	0	-	-	-
6-Jun-16	7AM	1PM	21600	360	756,000	35	2,100
7-Jun-16	NO PUMP		0	0	-	-	-

Table 5: 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)
<b>ECA Permitted Rate</b>					<b>6,550,000</b>	<b>76</b>	<b>4,545</b>
8-Jun-16	NO PUMP		0	0	-	-	-
9-Jun-16	NO PUMP		0	0	-	-	-
10-Jun-16	NO PUMP		0	0	-	-	-
11-Jun-16	NO PUMP		0	0	-	-	-
12-Jun-16	NO PUMP		0	0	-	-	-
13-Jun-16	NO PUMP		0	0	-	-	-
14-Jun-16	NO PUMP		0	0	-	-	-
15-Jun-16	NO PUMP		0	0	-	-	-
16-Jun-16	NO PUMP		0	0	-	-	-
17-Jun-16	NO PUMP		0	0	-	-	-
18-Jun-16	NO PUMP		0	0	-	-	-
19-Jun-16	NO PUMP		0	0	-	-	-
20-Jun-16	NO PUMP		0	0	-	-	-
21-Jun-16	NO PUMP		0	0	-	-	-
22-Jun-16	NO PUMP		0	0	-	-	-
23-Jun-16	NO PUMP		0	0	-	-	-
24-Jun-16	NO PUMP		0	0	-	-	-
25-Jun-16	NO PUMP		0	0	-	-	-
26-Jun-16	NO PUMP		0	0	-	-	-
27-Jun-16	7AM	12PM	18000	300	630,000	35	2,100
28-Jun-16	7AM	12PM	18000	300	630,000	35	2,100
29-Jun-16	NO PUMP		0	0	-	-	-
30-Jun-16	NO PUMP		0	0	-	-	-
1-Jul-16	NO PUMP		0	0	-	-	-
2-Jul-16	NO PUMP		0	0	-	-	-
3-Jul-16	NO PUMP		0	0	-	-	-
4-Jul-16	7AM	12PM	18000	300	630,000	35	2,100
5-Jul-16	NO PUMP		0	0	-	-	-
6-Jul-16	NO PUMP		0	0	-	-	-
7-Jul-16	NO PUMP		0	0	-	-	-
8-Jul-16	NO PUMP		0	0	-	-	-
9-Jul-16	7AM	1PM	21600	360	756,000	35	2,100
10-Jul-16	NO PUMP		0	0	-	-	-
11-Jul-16	NO PUMP		0	0	-	-	-
12-Jul-16	NO PUMP		0	0	-	-	-
13-Jul-16	NO PUMP		0	0	-	-	-
14-Jul-16	NO PUMP		0	0	-	-	-

Table 5: 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)
<b>ECA Permitted Rate</b>					<b>6,550,000</b>	<b>76</b>	<b>4,545</b>
15-Jul-16	NO PUMP		0	0	-	-	-
16-Jul-16	NO PUMP		0	0	-	-	-
17-Jul-16	NO PUMP		0	0	-	-	-
18-Jul-16	7AM	12PM	18000	300	630,000	35	2,100
19-Jul-16	NO PUMP		0	0	-	-	-
20-Jul-16	NO PUMP		0	0	-	-	-
21-Jul-16	NO PUMP		0	0	-	-	-
22-Jul-16	NO PUMP		0	0	-	-	-
23-Jul-16	NO PUMP		0	0	-	-	-
24-Jul-16	NO PUMP		0	0	-	-	-
25-Jul-16	NO PUMP		0	0	-	-	-
26-Jul-16	NO PUMP		0	0	-	-	-
27-Jul-16	NO PUMP		0	0	-	-	-
28-Jul-16	NO PUMP		0	0	-	-	-
29-Jul-16	NO PUMP		0	0	-	-	-
30-Jul-16	NO PUMP		0	0	-	-	-
31-Jul-16	NO PUMP		0	0	-	-	-



# APPENDIX A

Environmental Compliance Approval No. 4731-987KM8



- AKossi  
- GA

Ministry of the Environment  
Ministère de l'Environnement

**AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL**

NUMBER 4731-987KM8

Issue Date: October 15, 2013

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

Site Location: McCarthy Quarry  
Lot 1, Concession 1, Original Township of Mara  
Lot 1, Concession 1  
Ramara Township, 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:*

a sewage works for the collection, transmission, treatment and disposal of quarry water effluent from an aggregate 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;
- 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:*

**"Approval"** means this entire document and 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 Barrie District Office of the Ministry;

"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 its successors and assignees;

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

"Quarterly" means all or part of a period of three consecutive months beginning on the first day of January, April, July or October;

"Semi-annually" means all or part of a period of six months beginning on the first day of January or July;

"Weekly" means a period of seven days, starting on Sunday and ending on Saturday; and

"Works" means the sewage works described in the Owner's application, this *Approval* and in the supporting documentation referred to herein, to the extent approved by this *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) Except as otherwise provided by these Conditions, the *Owner* shall design, build, install, operate and maintain the *Works* in accordance with the description given in this *Approval*, the application for approval of the *Works* and the submitted supporting documents and plans and specifications as listed in this *Approval*.

(2) Where there is a conflict between a provision of any submitted document referred to in this *Approval* and the Conditions of this *Approval*, the Conditions in this *Approval* shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.

2. CHANGE OF OWNER

(1) The *Owner* shall notify the *District Manager* and the *Director* , in writing, of any of the following changes within seven (7) days of the change occurring:

(a) change of *Owner* or operating authority, or both;

(b) change of address of *Owner* or operating authority or address of new owner or operating authority;

(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 *Partnerships Registration Act* ;

(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 most current "Initial Notice or Notice of Change" (Form 1, 2 or 3 of O. Reg. 189, R.R.O. 1980, as amended from time to time), filed under the *Corporations Informations Act* 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 certificate, 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 will refer to this Approval's number.

3. CHANGES IN PROCESSES OR PROCESS MATERIALS

The *Owner* shall give written notice to the *District Manager* of any plans to change the processes or process materials in the *Owner's* enterprise serviced by the *Works* where the change may significantly alter the quantity or quality of the influent to or effluent from the *Works* , and no such changes shall be made unless with the written concurrence or approval of the *District Manager* .

4. OPERATIONS MANUAL

(1) The *Owner* shall prepare an operations manual prior to the commencement of operation of the sewage *Works* , that includes, but not necessarily 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 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 potential spill, bypasses and any other abnormal situations and for notifying the *District Manager* ; and

(e) complaint procedures for receiving and responding to public complaints.

(2) The *Owner* shall maintain the operations manual up to date through revisions undertaken from time to time and retain a copy at the location of the sewage works. Upon request, the *Owner* shall make the manual available for inspection and copying by Ministry personnel.

(3) A copy of the operations manual required by subsection (1) shall be provided to the *Director* no later than **three (3) months** prior to the commencement of operation of the sewage works.

#### 5. EFFLUENT LIMITS

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

<b>Effluent Parameter</b>	<b>Daily Concentration Limit (mg/L)</b>	<b>Monthly Average Concentration Limit (mg/L)</b>
Column 1	Column 2	Column 3
Total Suspended Solids	30	15
Oil and Grease	30	15
Phenolics (4AAP)	0.04	0.02

(2) pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times.

(3) The *Owner* shall ensure that the quarry water effluent shall be non-lethal to rainbow trout and *Daphnia magna* at all times.

(4) For the purposes of determining compliance with and enforcing subsection (1), exceedance of a daily concentration is deemed to have occurred when any daily single grab sample, analyzed for a parameter named in Column 1 of Table 1, is greater than the corresponding daily concentration set in Column 2 of Table 1.

(5) For the purposes of determining compliance with and enforcing subsection (1), exceedance of a monthly average concentration is deemed to have occurred when the arithmetic mean concentration of all samples taken in a calendar month, analyzed for a parameter named in Column 1 of Table 1, is greater than the corresponding monthly average concentration set in Column 3 of Table 1.

(6) Non-compliance with respect to pH is deemed to have occurred when any single measurement is outside of the indicated range.

(7) For the purposes of determining compliance with and enforcing subsection (3), the effluent is deemed to be non-lethal if the test results, required pursuant to Condition 8, show mortality for no more than 50 percent of either test organism in each sample of undiluted effluent.

6. EFFLUENT - VISUAL OBSERVATIONS

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.

7. EFFLUENT MONITORING AND RECORDING

The *Owner* shall, upon commencement of operation of the sewage works, carry out the following sampling from the final effluent control point ( i.e. the outfall of the settling pond which is approximately 150 metres north of Concession 1) at the commencement of effluent discharge and for the duration of the discharge period, as follows:

(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:

<b>Effluent Parameter</b>	<b>Frequency</b>	<b>Sample Type</b>
Total Suspended Solids	Weekly	Grab
Oil and Grease	Weekly	Grab
Phenolics (4AAP)	Weekly	Grab

(3) The *Owner* shall collect effluent samples at the following locations and analyze for the parameters listed in Table 3 at a frequency of once per week:

- (a) Outfall of settling pond approximately 150 metres north of Concession 1 (i.e. end of pipe discharge);
- (b) Box culvert on Eldon-Ramara Townline approximately 260 metres north of intersection of Ramara Concession 1 and Eldon-Ramara Townline (i.e. upgradient of end of pipe discharge);

- (c) 80 centimetre CSP located at Concession 1 Road on McCarthy property (i.e. downgradient of end of pipe discharge).

Table 3 - Effluent and Surface Water Monitoring	
Frequency	Weekly
Sample Type	Grab
Parameters	Total Suspended Solids, Copper, Lead, Nickel, Zinc, Arsenic, Oil and Grease, Phenolics (4AAP), Hardness (as CaCO <sub>3</sub> ), Alkalinity(as CaCO <sub>3</sub> ), 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

- (4) There shall be at least **four days** between successive sampling.
- (5) 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;
  - (b) the publication "Standard Methods for the Examination of Water and Wastewater" (17th edition) as amended from time to time by more recently published editions; and,
  - (c) in respect of any parameters not mentioned in (a) and (b), the written approval of the *District Manager*, shall be obtained prior to sampling.
- (6) The measurement frequencies specified in subsection (2) in respect of any parameter are minimum requirements which may, **after 48 months** of monitoring in accordance with this Condition, be modified by the *District Manager* in writing from time to time.
- (7) The measurement frequencies specified in subsection (3) in respect of any parameter shall be changed to semi-annually after one year of quarry operation.
- (8) A continuous flow measuring device shall be installed and maintained to measure the flowrate of the effluent from the sewage works, with an accuracy to within plus or minus 15 per cent of the actual flowrate for the entire design range of the flow measuring device and the *Owner* shall measure, record and calculate the flowrate for each effluent stream on each day of sampling.
- (9) The *Owner* shall retain for a minimum of **three (3) years** from the date of their creation, all records

and information related to or resulting from the monitoring activities required by this *Approval* .

8. LETHALITY MONITORING

(1) The *Owner* shall perform rainbow trout acute lethality test and *Daphnia magna* acute lethality test at least once a month on the quarry water effluent according to procedures published in Environment Canada publications entitled "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", dated July 1990 and "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* ", dated July 1990 and as updated from time to time.

(2) The acute lethality tests shall be carried out on a grab sample as a single concentration test using 100 per cent quarry water effluent.

(3) A minimum of two samples shall be tested for either test animal per each discharge period.

9. RECEIVER INSPECTION

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.

10. REPORTING

(1) One week prior to the start up of the operation of the *Works* , the *Owner* shall notify the *District Manager* (in writing) of the pending start up date.

(2) The *Owner* shall report to the *District Manager* or designate, any exceedance of any parameter specified in Condition 5 orally, forthwith, and in writing within seven (7) days of the exceedance.

(3) In addition to the obligations under Part X of the *Environmental Protection Act* , the *Owner* shall, within 10 working days of the occurrence of any spill, bypass or loss of any product, by product, intermediate product, oils, solvents, 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.

(4) The *Owner* shall submit quarterly reports of the information obtained under Conditions 7 and 8 within 30 days of the end of each quarter.

(5) The *Owner* shall prepare and submit a performance report to the *District Manager* on an annual basis within sixty (60) days following the end of the period being reported upon. The first such report shall cover the first annual period following the commencement of operation of the *Works* and subsequent reports shall be submitted to cover successive annual periods following thereafter. 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 5, 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; and
- (e) a summary of the calibration and maintenance carried out on all effluent monitoring equipment.

### Schedule A

#### Environmental Compliance Approval (ECA) supporting documents:

1. Application for Approval of Industrial Sewage Works submitted by Thomas S. McCarthy dated July 21, 2001 and revised January 25, 2002;
2. McCarthy Property - Certificate of Approval Application prepared by Dixon Hydrogeology Limited dated July 2001;
3. Revised Permit to Take Water - McCarthy Property prepared by Dixon Hydrogeology Limited dated April 11, 2002;
4. Letter and attachments dated January 25, 2002 from John Easton of Dixon Hydrogeology Limited to Mohamed Dhalla of the Ministry of the Environment;
5. Letter and attachments dated April 1, 2002 from Dave Hulme of Dave T. Hulme Enterprises Inc. to Stefanos Habtom of the Ministry of the Environment;
6. Letter dated April 10, 2002 from John Easton of Dixon Hydrogeology Limited to Stefanos Habtom of the Ministry of the Environment;
7. Environmental Review Amended Tribunal Decision: 02-214/02-217 and 03-188/03-189, dated May 25, 2006 - Trent Talbot River Property Owners Association, Marchand Lamarre and Jodi McIntosh v. Director, Ministry of the Environment; and
8. Notification of Change of Address/Ownership dated June 29, 2012, MOE Reference Number 3620-8VQPTZ acknowledging change in company address/ownership from Thomas S. McCarty, Rural Route No.1 Brechin, Ontario, L0K 1B0 to QBJR Aggregates Inc., 949 Wilson Ave., Toronto, Ontario, M3K 1G.

1. 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;
2. 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:*

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. 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  
2 St. Clair Avenue West, Floor 12A  
Toronto, Ontario  
M4V 1L5

\* 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) 314-4506 or [www.ert.gov.on.ca](http://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 15th day of October, 2013



Edgardo Tovilla  
Director  
appointed for the purposes of Part II.1 of the  
*Environmental Protection Act*



# APPENDIX B

## Water Quality Results

Your Project #: 1407634  
 Site#: MCCARTHY  
 Your C.O.C. #: 554700-01-01

**Attention:Dawn Hoyle/Jamie Bonany**

Golder Associates Ltd  
 121 Commerce Park Drive  
 Unit L  
 Barrie, ON  
 L4N 8X1

**Report Date: 2016/05/27**  
 Report #: R4005575  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B6A2871**  
**Received: 2016/05/20, 09:40**

Sample Matrix: Water  
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Total Oil and Grease	1	2016/05/26	2016/05/26	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/05/24	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/05/25	CAM SOP-00444	OMOE E3179 m
Total Suspended Solids	1	N/A	2016/05/24	CAM SOP-00428	SM 22 2540D m

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.

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.  
 Ema Gitej, Senior Project Manager  
 Email: EGitej@maxxam.ca  
 Phone# (905)817-5829

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

**RESULTS OF ANALYSES OF WATER**

Maxxam ID		CJX882	CJX882		
Sampling Date		2016/05/19 12:30	2016/05/19 12:30		
COC Number		554700-01-01	554700-01-01		
	<b>UNITS</b>	<b>POND</b>	<b>POND Lab-Dup</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Inorganics</b>					
pH	pH	8.09			4509330
Phenols-4AAP	mg/L	ND		0.0010	4508442
Total Suspended Solids	mg/L	ND	ND	10	4508443
<b>Petroleum Hydrocarbons</b>					
Total Oil & Grease	mg/L	2.8		0.50	4512239
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected					

**GENERAL COMMENTS**

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

Package 1	16.3°C
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**Results relate only to the items tested.**

### QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4508442	Phenols-4AAP	2016/05/25	95	80 - 120	95	85 - 115	ND, RDL=0.0010	mg/L	2.8	20		
4508443	Total Suspended Solids	2016/05/24					ND, RDL=10	mg/L	NC	25	99	85 - 115
4509330	pH	2016/05/24			102	98 - 103			0.95	N/A		
4512239	Total Oil & Grease	2016/05/26			99	85 - 115	ND, RDL=0.50	mg/L	0.51	25		

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 (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 (one or both samples < 5x RDL).

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



---

Brad Newman, Scientific Specialist

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

**IMMEDIATE TEST**  
**Maxxam**  
 A Division of Golder Associates Ltd.

Maxxam Analytics International Corporation o/a Maxxam Analytics  
 6740 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-Free (800) 563-6266 Fax: (905) 817-5777 www.maxxam.ca

**CHAIN OF CUSTODY RECORD**

<b>INVOICE TO:</b>		<b>REPORT TO:</b>		<b>PROJECT INFORMATION:</b>		<b>Laboratory Use Only:</b>	
Company Name: #12323 Golder Associates Ltd		Company Name: _____		Quotation #: B52596		Maxxam Job #: _____	
Attention: Central Accounting		Attention: Dawn Hoyle		P.O. #: 1407634		Bottle Order #: _____	
Address: 121 Commerce Park Drive Unit L Barrie ON L4N 8X1		Address: _____		Project: _____		COC #: _____	
Tel: (705) 722-4492 Fax: (705) 722-3786		Tel: _____ Fax: _____		Project Name: MCCARTHY		Project Manager: _____	
Email: AccountsPayable_Maxxam@golder.com, Patricia_Cha		Email: Dawn_Hoyle@golder.com		Site #: _____		Ema Gitej	
				Sampled By: <b>Daryl Landry</b>		C#554700-01-01	

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY					ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: Please provide advance notice for rush projects		
Regulation 153 (2011)			Other Regulations		Special Instructions										Regular (Standard) TAT: <i>(will be applied if Rush TAT is not specified)</i>		
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw											Standard TAT = 5-7 Working days for most tests.		
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw											Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.		
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality: _____											Job Specific Rush TAT (if applies to entire submission)		
<input type="checkbox"/> Table _____			<input type="checkbox"/> PWQO												Date Required: _____ Time Required: _____		
Include Criteria on Certificate of Analysis (Y/N)?															Rush Confirmation Number: _____ (call lab for #)		
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr-VI	Total Suspended Solids	Total Oil and Grease	Phenols (4AAP)	pH							# of Bottles	Comments
554700	POND	May 19	12:30	SW	N/A	✓	✓	✓	✓	✓							

20-May-16 09:40  
 Ema Gitej  
  
 B6A2871  
 RGN ENV-904

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
<i>Teresa Cronk</i>		16/05/19	12:30	<i>MUSRAT MAJ</i>		20/05/20	09:40		Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
<i>Teresa Cronk</i>		16/05/19								16/17/16	Present	✓	✗
											Intact	✓	✗

\* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam Yellow: Client

*nbica*  
 20/05/20

Your Project #: 1407634  
 Site Location: MCCARTHY  
 Your C.O.C. #: 558436-01-01

**Attention:Dawn Hoyle/Jamie Bonany**

Golder Associates Ltd  
 121 Commerce Park Drive  
 Unit L  
 Barrie, ON  
 L4N 8X1

**Report Date: 2016/06/01**  
 Report #: R4012196  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B6A7284**  
**Received: 2016/05/27, 10:50**

Sample Matrix: Water  
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/05/31	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/05/31	2016/05/31	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/05/31	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/06/01	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/05/31	2016/05/31	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/05/31	CAM SOP-00428	SM 22 2540D m

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

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Antonella Brasil, Senior Project Manager

Email: ABrasil@maxxam.ca

Phone# (905)817-5817

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

**RESULTS OF ANALYSES OF WATER**

<b>Maxxam ID</b>		CKU860		
<b>Sampling Date</b>		2016/05/26 13:00		
<b>COC Number</b>		558436-01-01		
	<b>UNITS</b>	<b>POND</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Calculated Parameters</b>				
Total Animal/Vegetable Oil and Grease	mg/L	1.4	0.50	4514417
<b>Inorganics</b>				
pH	pH	8.72		4518074
Phenols-4AAP	mg/L	ND	0.0010	4516302
Total Suspended Solids	mg/L	4	1	4516997
<b>Petroleum Hydrocarbons</b>				
Total Oil & Grease	mg/L	1.4	0.50	4518229
Total Oil & Grease Mineral/Synthetic	mg/L	ND	0.50	4518236
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				
ND = Not detected				

**GENERAL COMMENTS**

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

Package 1	21.0°C
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**Results relate only to the items tested.**

### QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4516302	Phenols-4AAP	2016/06/01	96	80 - 120	97	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4516997	Total Suspended Solids	2016/05/31					ND,RDL=1	mg/L	NC	25	97	85 - 115
4518074	pH	2016/05/31			102	98 - 103			1.4	N/A		
4518229	Total Oil & Grease	2016/05/31			101	85 - 115	ND, RDL=0.50	mg/L	1.8	25		
4518236	Total Oil & Grease Mineral/Synthetic	2016/05/31			91	85 - 115	ND, RDL=0.50	mg/L	4.9	25		

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 (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 (one or both samples < 5x RDL).

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

*Cristina Carriere*

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Cristina Carriere, Scientific Services

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**IMMEDIATE TEST**

Maxxam Analytics International Corporation o/a Maxxam Analytics  
 6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-Free: (800) 563-6256 Fax: (905) 817-5777 www.maxxam.ca

**CHAIN OF CUSTODY RECORD**

<b>INVOICE TO:</b>		<b>REPORT TO:</b>		<b>PROJECT INFORMATION:</b>		<b>Laboratory Use Only:</b>	
Company Name: #26238 Coco Paving Inc	Company Name: #17930 Golder Associates Ltd	Quotation #: B47292	Maxxam Job #:	Bottle Order #:	558436		
Attention: Teresa Cronk	Attention: Dawn Hoyle/Jamie Bonany	P.O. #: 1407634	COC #:	Project Manager:	Rachael Watt		
Address: 949 Wilson Ave	Address: 121 Commerce Park Drive Unit L	Project Name: MCCARTHY	C4558436-01-01				
Tel: (416) 633-9670	Tel: (705) 722-4492	Site #: Daryl Landry					
Email: TCronk@cocogroup.com	Email: Dawn_Hoyle@golder.com; Jamie_Bonany@golder.com	Sampled By:					

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY					ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: Please provide advance notice for rush projects						
Regulation 153 (2011)		Other Regulations		Special Instructions	Field Filtered (please circle) Metals / Hg / Cr / VI	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (GAAP)	pH	PH											
<input type="checkbox"/> Table 1	<input type="checkbox"/> Ras/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw																	
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw																	
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agr/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality																	
<input type="checkbox"/> Table			<input type="checkbox"/> PWDO																		
<input type="checkbox"/> Other																					
Include Criteria on Certificate of Analysis (Y/N)?																					
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix																	
558436	POND	May 26/16	100pm	SW	N/A	✓	✓	✓	✓	✓											
	POND																				
	POND																				
	POND																				

**Regular (Standard) TAT:**  
 (will be applied if Rush TAT is not specified).  
 Standard TAT = 5-7 Working days for most tests.  
 Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

**Job Specific Rush TAT (if applies to entire submission)**  
 Date Required: \_\_\_\_\_ Time Required: \_\_\_\_\_  
 Rush Confirmation Number: \_\_\_\_\_ (call lab for #)

# of Bottles: \_\_\_\_\_  
 Comments: \_\_\_\_\_

27-May-16 10:50  
 Rachael Watt  
  
 B6A7284  
 HGR ENV-757

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# Jars used and not submitted	Laboratory Use Only				
Teresa Cronk		16/05/26	200pm	Rachael Watt	16/05/27	10:50		Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
Teresa Cronk		16/05/26							NO ICE 21/21/21	Present	✓	
										Intact	✓	

\* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam Yellow: Client

Your Project #: 1407634  
 Site#: 1407634  
 Site Location: MCCARTHY  
 Your C.O.C. #: 558436-02-01

**Attention: Dawn Hoyle/Jamie Bonany**

Golder Associates Ltd  
 121 Commerce Park Drive  
 Unit L  
 Barrie, ON  
 L4N 8X1

**Report Date: 2016/06/08**  
 Report #: R4020308  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B6B2991**  
**Received: 2016/06/03, 10:50**

Sample Matrix: Water  
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/06/08	CAM SOP-00326	EPA1664B m, SM5520B m
Total Oil and Grease	1	2016/06/07	2016/06/08	CAM SOP-00326	EPA1664B m, SM5520A m
pH	1	N/A	2016/06/04	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/06/06	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/06/07	2016/06/08	CAM SOP-00326	EPA1664B m, SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/06/06	CAM SOP-00428	SM 22 2540D m

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

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Antonella Brasil, Senior Project Manager

Email: ABrasil@maxxam.ca

Phone# (905)817-5817

=====

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**RESULTS OF ANALYSES OF WATER**

<b>Maxxam ID</b>		CLW207		CLW207	
<b>Sampling Date</b>		2016/06/02 13:00		2016/06/02 13:00	
<b>COC Number</b>		558436-02-01		558436-02-01	
	<b>UNITS</b>	<b>POND</b>	<b>RDL</b>	<b>POND Lab-Dup</b>	<b>QC Batch</b>
<b>Calculated Parameters</b>					
Total Animal/Vegetable Oil and Grease	mg/L	ND	0.50		4524398
<b>Inorganics</b>					
pH	pH	9.04		9.05	4526201
Phenols-4AAP	mg/L	ND	0.0010		4525631
Total Suspended Solids	mg/L	6	1		4525675
<b>Petroleum Hydrocarbons</b>					
Total Oil & Grease	mg/L	ND	0.50		4528119
Total Oil & Grease Mineral/Synthetic	mg/L	ND	0.50		4528120
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected					

**GENERAL COMMENTS**

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

Package 1	7.0°C
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**Results relate only to the items tested.**

### QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4525631	Phenols-4AAP	2016/06/06	97	80 - 120	96	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4525675	Total Suspended Solids	2016/06/06					ND,RDL=1	mg/L	7.0	25	98	85 - 115
4526201	pH	2016/06/04			102	98 - 103			0.071	N/A		
4528119	Total Oil & Grease	2016/06/08			97	85 - 115	ND, RDL=0.50	mg/L	1.5	25		
4528120	Total Oil & Grease Mineral/Synthetic	2016/06/08			93	85 - 115	ND, RDL=0.50	mg/L	2.7	25		

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 (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 (one or both samples < 5x RDL).

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).


---

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

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CHAIN OF CUSTODY RECORD

Page of

<b>INVOICE TO:</b> Company Name: #26238 Coco Paving Inc Attention: Teresa Cronk Address: 949 Wilson Ave Toronto ON M3K 1G2 Tel: (416) 633-9670 Fax: Email: TCronk@cocogroup.com		<b>REPORT TO:</b> Company Name: #17930 Golder Associates Ltd Attention: Dawn Hoyle/Jamie Bonany Address: 121 Commerce Park Drive Unit L Barrie ON L4N 8X1 Tel: (705) 722-4492 Fax: Email: Dawn_Hoyle@golder.com; Jamie_Bonany@golder.com		<b>PROJECT INFORMATION:</b> Quotation #: B47292 P.O. #: Project: 1407634 Project Name: MCCARTHY Site #: <u>R031002E</u> Sampled By:		<b>Laboratory Use Only:</b> Maxxam Job #: Bottle Order #: 558436 COC #: Project Manager: Rachael Watt C#558436-02-01	
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MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

<b>Regulation 153 (2011)</b> <input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC <input type="checkbox"/> Table		<b>Other Regulations</b> <input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> MISA <input type="checkbox"/> Municipality <input type="checkbox"/> PWOO <input type="checkbox"/> Other		<b>Special Instructions</b>		<b>Turnaround Time (TAT) Required:</b> Please provide advance notice for rush projects Regular (Standard) TAT: <input type="checkbox"/> (will be applied if Rush TAT is not specified). Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) Date Required: Time Required: <input type="checkbox"/> Rush Confirmation Number: (call lab for B)	
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Include Criteria on Certificate of Analysis (Y/N)?						Field Filtered (please circle) Metals /Hg /Cr /VI	Low Level Total Suspended Solids	Oil & Grease - AWWMT	Phenols (404P)	pH	PH	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)	# of Bottles	Comments
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix										
1	558436	POWD	JUNE 2/16	1:00 PM	SW	W/A	✓	✓	✓	✓	✓			
2														
3														
4														
5														
6														
7														
8														
9														
10														

03-Jun-16 10:50  
 Rachael Watt  
 B6B299J  
 GK1 ENV-709

<b>RELINQUISHED BY: (Signature/Print)</b> Jodi Pascoe Jodi Pascoe		<b>Date: (YY/MM/DD)</b> 16/06/16		<b>Time</b> 1:00 PM		<b>RECEIVED BY: (Signature/Print)</b> MUCRAI		<b>Date: (YY/MM/DD)</b> 20/6/16		<b>Time</b> 10:50		<b># jars used and not submitted</b>		<b>Laboratory Use Only</b> Time Sensitive: <input type="checkbox"/> Temperature (°C) on Receipt: 7/7/7 Custody Seal: Present <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>			
-------------------------------------------------------------------------	--	-------------------------------------	--	------------------------	--	-------------------------------------------------	--	------------------------------------	--	----------------------	--	--------------------------------------	--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--	--

\* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam Yellow: Client

Your Project #: 1407634  
 Site#: 1407634  
 Site Location: MCCARTHY  
 Your C.O.C. #: 561479-03-01

**Attention:Dawn Hoyle/Jamie Bonany**

Golder Associates Ltd  
 121 Commerce Park Drive  
 Unit L  
 Barrie, ON  
 L4N 8X1

**Report Date: 2016/06/17**  
 Report #: R4032769  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B6B9138**  
**Received: 2016/06/10, 10:29**

Sample Matrix: Water  
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/06/14	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/06/14	2016/06/14	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/06/12	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/06/15	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/06/14	2016/06/14	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/06/15	CAM SOP-00428	SM 22 2540D m

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

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ema Gitej, Senior Project Manager  
 Email: EGitej@maxxam.ca  
 Phone# (905)817-5829

=====

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**RESULTS OF ANALYSES OF WATER**

Maxxam ID		CMY575	CMY575		
Sampling Date		2016/06/09 13:00	2016/06/09 13:00		
COC Number		561479-03-01	561479-03-01		
	UNITS	POND	POND Lab-Dup	RDL	QC Batch
<b>Calculated Parameters</b>					
Total Animal/Vegetable Oil and Grease	mg/L	0.80		0.50	4533952
<b>Inorganics</b>					
pH	pH	8.82			4535961
Phenols-4AAP	mg/L	ND	ND	0.0010	4535661
Total Suspended Solids	mg/L	4	4	1	4535615
<b>Petroleum Hydrocarbons</b>					
Total Oil & Grease	mg/L	0.80		0.50	4537757
Total Oil & Grease Mineral/Synthetic	mg/L	ND		0.50	4537758
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected					

**GENERAL COMMENTS**

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

Package 1	3.0°C
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**Results relate only to the items tested.**

### QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4535615	Total Suspended Solids	2016/06/15					ND,RDL=1	mg/L	NC	25	99	85 - 115
4535661	Phenols-4AAP	2016/06/15	103	80 - 120	101	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4535961	pH	2016/06/12			102	98 - 103			1.4	N/A		
4537757	Total Oil & Grease	2016/06/14			96	85 - 115	ND, RDL=0.50	mg/L	1.3	25		
4537758	Total Oil & Grease Mineral/Synthetic	2016/06/14			92	85 - 115	ND, RDL=0.50	mg/L	2.7	25		

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 (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 (one or both samples < 5x RDL).

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

---

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

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Your Project #: 1407634  
 Site#: 1407634  
 Site Location: MCCARTHY  
 Your C.O.C. #: 558436-03-01

**Attention:Dawn Hoyle/Jamie Bonany**

Golder Associates Ltd  
 121 Commerce Park Drive  
 Unit L  
 Barrie, ON  
 L4N 8X1

**Report Date: 2016/06/22**  
 Report #: R4037699  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B6C5231**  
**Received: 2016/06/17, 09:42**

Sample Matrix: Water  
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/06/21	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/06/21	2016/06/21	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/06/20	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/06/21	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/06/21	2016/06/21	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/06/21	CAM SOP-00428	SM 22 2540D m

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

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Antonella Brasil, Senior Project Manager

Email: ABrasil@maxxam.ca

Phone# (905)817-5817

=====

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**RESULTS OF ANALYSES OF WATER**

<b>Maxxam ID</b>		COE030		
<b>Sampling Date</b>		2016/06/15 13:00		
<b>COC Number</b>		558436-03-01		
	<b>UNITS</b>	<b>558436 POND</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Calculated Parameters</b>				
Total Animal/Vegetable Oil and Grease	mg/L	ND	0.50	4543735
<b>Inorganics</b>				
pH	pH	9.07		4546660
Phenols-4AAP	mg/L	ND	0.0010	4546124
Total Suspended Solids	mg/L	6	1	4546751
<b>Petroleum Hydrocarbons</b>				
Total Oil & Grease	mg/L	ND	0.50	4547611
Total Oil & Grease Mineral/Synthetic	mg/L	ND	0.50	4547614
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected				

**GENERAL COMMENTS**

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

Package 1	20.0°C
-----------	--------

Sample received with temp >10 C and analyses conducted with client's consent.

**Results relate only to the items tested.**

### QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4546124	Phenols-4AAP	2016/06/21	97	80 - 120	95	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4546660	pH	2016/06/20			101	98 - 103			0.58	N/A		
4546751	Total Suspended Solids	2016/06/21					ND,RDL=1	mg/L	NC	25	100	85 - 115
4547611	Total Oil & Grease	2016/06/21			101	85 - 115	ND, RDL=0.50	mg/L	3.3	25		
4547614	Total Oil & Grease Mineral/Synthetic	2016/06/21			98	85 - 115	ND, RDL=0.50	mg/L	4.2	25		

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 (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 (one or both samples < 5x RDL).

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

---

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

---

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Maxxam Analytics International Corporation o/a Maxxam Analytics  
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-Free (800) 563-6266 Fax: (905) 817-5777 www.maxxam.ca

17-Jun-16 09:42

**INVOICE TO:**  
 Company Name: #26238 Coco Paving Inc  
 Attention: Teresa Cronk  
 Address: 949 Wilson Ave  
 Toronto ON M3K 1G2  
 Tel: (416) 633-9670  
 Email: TCronk@cocogroup.com

**REPORT TO:**  
 Company Name: #17930 Golder Associates Ltd  
 Attention: Dawn Hoyle/Jamie Bonany  
 Address: 121 Commerce Park Drive Unit L  
 Barrie ON L4N 8X1  
 Tel: (705) 722-4492  
 Email: Dawn\_Hoyle@golder.com; Jamie\_Bonany@golder.com

**PROJECT INFORMATION:**  
 Quotation #: B47292  
 P O #: \_\_\_\_\_  
 Project: 1407634  
 Project Name: \_\_\_\_\_  
 Site #: MCCARTHY  
 Sampled By: *Daryl Landry*

Rachael Watt  
 Page of \_\_\_\_\_  
 Bottle Order #: \_\_\_\_\_  
 558436  
 Project Manager: Rachael Watt  
 JFU ENV-999  
 CQC #: \_\_\_\_\_  
 Barcode: 558436-03-01

**MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY**

**Regulation 153 (2011)**  
 Table 1  Res/Park  Medium/Fine  
 Table 2  Ind/Comm  Coarse  
 Table 3  Agri/Other  For RSC  
 Table \_\_\_\_\_

**Other Regulations**  
 CCME  Sanitary Sewer Bylaw  
 Reg 558  Storm Sewer Bylaw  
 MISA Municipality: \_\_\_\_\_  
 PWOO  
 Other: \_\_\_\_\_

**Special Instructions**

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Field Filled (please circle): Metals / Hg / Cr / VI	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (HAAP)	pH	PH
N/A	✓	✓	✓	✓	✓

**Turnaround Time (TAT) Required:**  
 Please provide advance notice for rush projects

**Regular (Standard) TAT:**  
 (will be applied if Rush TAT is not specified)  
 Standard TAT = 5-7 Working days for most tests.  
 Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

**Job Specific Rush TAT (if applies to entire submission)**  
 Date Required: \_\_\_\_\_ Time Required: \_\_\_\_\_  
 Rush Confirmation Number: \_\_\_\_\_ (call lab for #)

# of Bottles: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**Include Criteria on Certificate of Analysis (Y/N)?**

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix
558436	POND	June 15/16	1000pm	SW

* RELINQUISHED BY: (Signature/Print) <i>Teresa Cronk</i>		Date: (YY/MM/DD) 06/15/16	Time 3:00pm	RECEIVED BY: (Signature/Print) <i>Ashley Bilkawa</i>		Date: (YY/MM/DD) 20/06/16	Time 09:42	# jars used and not submitted	Laboratory Use Only				
<i>Teresa Cronk</i>		06/15/16	3:00pm	<i>Ashley Bilkawa</i>		20/06/16	09:42		Time Sensitive	Temperature (°C) on Receipt 20/20/20	Custody Seal	Yes	No
											Present	✓	
											Intact		

IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam Yellow: Client

*ice packed.*

Maxxam Analytics International Corporation o/a Maxxam Analytics

*No ice*

Your Project #: 1407634  
 Site#: 1407634  
 Site Location: MCCARTHY  
 Your C.O.C. #: 561479-04-01

**Attention: Dawn Hoyle/Jamie Bonany**

Golder Associates Ltd  
 121 Commerce Park Drive  
 Unit L  
 Barrie, ON  
 L4N 8X1

**Report Date: 2016/06/29**  
 Report #: R4046868  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B6D0807**  
**Received: 2016/06/24, 09:57**

Sample Matrix: Water  
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/06/28	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/06/27	2016/06/27	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/06/27	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/06/29	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/06/27	2016/06/27	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/06/28	CAM SOP-00428	SM 22 2540D m

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

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Antonella Brasil, Senior Project Manager

Email: ABrasil@maxxam.ca

Phone# (905)817-5817

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

**RESULTS OF ANALYSES OF WATER**

<b>Maxxam ID</b>			CPE914		
<b>Sampling Date</b>			2016/06/23 12:00		
<b>COC Number</b>			561479-04-01		
	<b>UNITS</b>	<b>Criteria</b>	<b>561479- POND</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Calculated Parameters</b>					
Total Animal/Vegetable Oil and Grease	mg/L	-	ND	0.50	4553966
<b>Inorganics</b>					
pH	pH	<b>6.5:8.5</b>	<b>8.79</b>		4556121
Phenols-4AAP	mg/L	<b>0.001</b>	<b>0.0014</b>	0.0010	4555027
Total Suspended Solids	mg/L	-	8	1	4556220
<b>Petroleum Hydrocarbons</b>					
Total Oil & Grease	mg/L	-	ND	0.50	4556339
Total Oil & Grease Mineral/Synthetic	mg/L	<b>0.5</b>	ND	0.50	4556345
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected					

### GENERAL COMMENTS

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

Package 1	19.0°C
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Sample received with temp > 10 C and analyses conducted with client's consent.

**Results relate only to the items tested.**

### QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4555027	Phenols-4AAP	2016/06/29	96	80 - 120	94	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4556121	pH	2016/06/27			102	98 - 103			1.0	N/A		
4556220	Total Suspended Solids	2016/06/28					ND,RDL=1	mg/L	NC	25	99	85 - 115
4556339	Total Oil & Grease	2016/06/27			96	85 - 115	ND, RDL=0.50	mg/L	2.9	25		
4556345	Total Oil & Grease Mineral/Synthetic	2016/06/27			94	85 - 115	ND, RDL=0.50	mg/L	2.2	25		

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 (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 (one or both samples < 5x RDL).

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).


---

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

---

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

<b>INVOICE TO:</b> Company Name: #26238 Coco Paving Inc Attention: Teresa Cronk Address: 949 Wilson Ave Toronto ON M3K 1G2 Tel: (416) 633-9670 Fax: _____ Email: TCronk@cocogroup.com		<b>REPORT TO:</b> Company Name: _____ Attention: Dawn Hoyle/Jamie Bonary Address: _____ Tel: _____ Fax: _____ Email: Dawn_Hoyle@golder.com; Jamie_Bonary@golder.com		<b>PROJECT INFORMATION:</b> Quotation #: B47292 P.O. #: _____ Project: 1407634 - McCarthy Project Name: _____ Site #: McCarthy Sampled By: DARRYL LADRY		<b>Laboratory Use Only:</b> Maxxam Job #: _____ Bottle Order #: _____ COC #: _____ Project Manager: Antonella Brasil C#561479-04-01	
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MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY						ANALYSIS REQUESTED (PLEASE BE SPECIFIC)						Turnaround Time (TAT) Required			
Regulation 153 (2011)			Other Regulations			Special Instructions			Field Filtered (please circle): Metals / Hg / Cr VI	Oil & Grease - AVAMT	Low Level Total Suspended Solids	Phenols (AAP)	pH	Please provide advance notice for rush projects	
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw											
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw										<b>Job Specific Rush TAT (if applies to entire submission)</b> Date Required: _____ Time Required: _____ Rush Confirmation Number: _____ (call lab for #)	<input type="checkbox"/>
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input checked="" type="checkbox"/> PWQO (SW)	Municipality _____											
<input type="checkbox"/> Table _____			<input type="checkbox"/> Other _____												
Include Criteria on Certificate of Analysis (Y/N)?												# of Bottles	Comments		
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix											
1 561479	POND	JUNE 23 2016	12:00 PM	SW	-	X	X	X	X					5	
2															
3															
4															
5															
6															
7															
8															
9															
10															

24-Jun-16 09:57  
 Antonella Brasil  
  
 B6D0807  
 CP ENV-1177

* RELINQUISHED BY: (Signature/Print) Daryl Ladry		Date: (YY/MM/DD) 16/06/23	Time 12:00 PM	RECEIVED BY: (Signature/Print) Rajmeet Kaur	Date: (YY/MM/DD) 2016/06/24	Time 09:57	# jars used and not submitted	Laboratory Use Only			
							Time Sensitive	Temperature (°C) on Receipt 19/19/19	Custody Seal	Yes	No
								Intact	/	/	

\* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam Yellow: Client

no ice

Your Project #: 1407634  
 Site#: 1407634  
 Site Location: MCCARTHY  
 Your C.O.C. #: 567523-01-01

**Attention:Dawn Hoyle/Jamie Bonany**

Golder Associates Ltd  
 121 Commerce Park Drive  
 Unit L  
 Barrie, ON  
 L4N 8X1

**Report Date: 2016/07/15**  
 Report #: R4066797  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B6E2225**

**Received: 2016/07/11, 11:30**

Sample Matrix: Water  
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/07/15	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/07/14	2016/07/15	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/07/12	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/07/13	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/07/14	2016/07/15	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/07/12	CAM SOP-00428	SM 22 2540D m

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

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Antonella Brasil, Senior Project Manager

Email: ABrasil@maxxam.ca

Phone# (905)817-5817

=====  
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**RESULTS OF ANALYSES OF WATER**

<b>Maxxam ID</b>		CRH991	CRH991		
<b>Sampling Date</b>		2016/07/07 13:00	2016/07/07 13:00		
<b>COC Number</b>		567523-01-01	567523-01-01		
	<b>UNITS</b>	<b>567523 POND</b>	<b>567523 POND Lab-Dup</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Calculated Parameters</b>					
Total Animal/Vegetable Oil and Grease	mg/L	ND		0.50	4572726
<b>Inorganics</b>					
pH	pH	8.55			4574741
Phenols-4AAP	mg/L	ND		0.0010	4575026
Total Suspended Solids	mg/L	7	7	1	4574682
<b>Petroleum Hydrocarbons</b>					
Total Oil & Grease	mg/L	ND		0.50	4578798
Total Oil & Grease Mineral/Synthetic	mg/L	ND		0.50	4578801
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected					

**GENERAL COMMENTS**

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

Package 1	22.3°C
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**Results relate only to the items tested.**

**QUALITY ASSURANCE REPORT**

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4574682	Total Suspended Solids	2016/07/12					ND,RDL=1	mg/L	5.6	25	99	85 - 115
4574741	pH	2016/07/12			101	98 - 103			1.6	N/A		
4575026	Phenols-4AAP	2016/07/13	106	80 - 120	104	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4578798	Total Oil & Grease	2016/07/15			98	85 - 115	ND, RDL=0.50	mg/L	0.76	25		
4578801	Total Oil & Grease Mineral/Synthetic	2016/07/15			95	85 - 115	ND, RDL=0.50	mg/L	3.1	25		

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 (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 (one or both samples < 5x RDL).

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

---

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

---

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**IMMEDIATE TEST**



Maxxam Analytics International Corporation o/a Maxxam Analytics  
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-Free: (800) 563-6266 Fax: (905) 817-5777 www.maxxam.ca

**CHAIN OF CUSTODY RECORD**

<b>INVOICE TO:</b>		<b>REPORT TO:</b>		<b>PROJECT INFORMATION:</b>		<b>Laboratory Use Only:</b>	
Company Name: #26238 Coco Paving Inc	Attention: Teresa Cronk	Company Name: #17930 Golder Associates Ltd	Attention: Dawn Hoyle/Jamie Bonany	Quotation #: B47292	P.O. #:	Maxxam Job #:	Bottle Order #:
Address: 949 Wilson Ave		Address: 121 Commerce Park Drive Unit L		Project: 1407634		COC #:	Project Manager:
Tel: (416) 633-9670	Fax:	Tel: (705) 722-4492	Fax:	Project Name: MCCARTHY	Site #:		
Email: TCronk@cocogroup.com		Email: Dawn_Hoyle@golder.com, Jamie_Bonany@golder.com		Sampled By: <u>Rob Todd</u>			Antonella Brasil

**MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY**

<b>Regulation 153 (2011)</b>		<b>Other Regulations</b>		<b>Special Instructions</b>
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality: _____
<input type="checkbox"/> Table _____			<input type="checkbox"/> PWQO	
			<input type="checkbox"/> Other _____	

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)					
Field Filtered (please circle) Metals / Hg / Cr / V	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (4AAP)	pH	
✓	✓	✓	✓	✓	

**Turnaround Time (TAT) Required:**  
Please provide advance notice for rush projects

**Regular (Standard) TAT:**  
(will be applied if Rush TAT is not specified)  
Standard TAT = 5-7 Working days for most tests.  
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

**Job Specific Rush TAT (if applies to entire submission)**  
Date Required: \_\_\_\_\_ Time Required: \_\_\_\_\_  
Rush Confirmation Number: \_\_\_\_\_ (call lab for #)

# of Bottles: \_\_\_\_\_  
Comments: \_\_\_\_\_

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle) Metals / Hg / Cr / V	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (4AAP)	pH								
1 567523	POND	July 7th	1:00 PM	Slw	✓	✓	✓	✓	✓								
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

11-Jul-16 11:30  
Antonella Brasil  
B6E2225  
ASR/PP ENV-606

<b>* RELINQUISHED BY: (Signature/Print)</b>		<b>Date: (YY/MM/DD)</b>	<b>Time</b>	<b>RECEIVED BY: (Signature/Print)</b>		<b>Date: (YY/MM/DD)</b>	<b>Time</b>	<b># Jars used and not submitted</b>	<b>Laboratory Use Only</b>	
<u>Jodi Pascoe</u> <u>Jodi Pascoe</u>		@16/07/16		<u>Shruti</u> SHRUTI PATIL		2016/07/11	7:11:30		Time Sensitive	Temperature (°C) on Receipt: 23/22/22
		16/07/16							Time Sensitive	Temperature (°C) on Receipt: 23/22/22

\* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam Yellow: Client

No.ice

Your Project #: 1407634  
 Site#: MCCARTHY  
 Your C.O.C. #: 567521-01-01

**Attention:Dawn Hoyle/Jamie Bonany**

Golder Associates Ltd  
 121 Commerce Park Drive  
 Unit L  
 Barrie, ON  
 L4N 8X1

**Report Date: 2016/07/22**  
 Report #: R4077395  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B6E8653**  
**Received: 2016/07/18, 11:30**

Sample Matrix: Water  
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/07/21	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/07/20	2016/07/21	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/07/19	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/07/20	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/07/20	2016/07/21	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/07/19	CAM SOP-00428	SM 22 2540D m

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

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ema Gitej, Senior Project Manager  
 Email: EGitej@maxxam.ca  
 Phone# (905)817-5829

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

**RESULTS OF ANALYSES OF WATER**

Maxxam ID		CSK190	CSK190		
Sampling Date		2016/07/14 12:30	2016/07/14 12:30		
COC Number		567521-01-01	567521-01-01		
	UNITS	POND	POND Lab-Dup	RDL	QC Batch
<b>Calculated Parameters</b>					
Total Animal/Vegetable Oil and Grease	mg/L	ND		0.50	4582790
<b>Inorganics</b>					
pH	pH	8.39			4584764
Phenols-4AAP	mg/L	ND		0.0010	4584622
Total Suspended Solids	mg/L	7	8	1	4585127
<b>Petroleum Hydrocarbons</b>					
Total Oil & Grease	mg/L	ND		0.50	4587570
Total Oil & Grease Mineral/Synthetic	mg/L	ND		0.50	4587571
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected					

**GENERAL COMMENTS**

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

Package 1	23.0°C
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**Results relate only to the items tested.**

**QUALITY ASSURANCE REPORT**

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4584622	Phenols-4AAP	2016/07/20	101	80 - 120	101	85 - 115	ND, RDL=0.0010	mg/L	5.4	20		
4584764	pH	2016/07/19			102	98 - 103			0.41	N/A		
4585127	Total Suspended Solids	2016/07/19					ND,RDL=1	mg/L	13	25	100	85 - 115
4587570	Total Oil & Grease	2016/07/21	NC	75 - 125	101	85 - 115	ND, RDL=0.50	mg/L	NC	25		
4587571	Total Oil & Grease Mineral/Synthetic	2016/07/21			95	85 - 115	ND, RDL=0.50	mg/L	0.52	25		

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

**VALIDATION SIGNATURE PAGE**

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

*Cristina Carriere*

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Cristina Carriere, Scientific Services

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

**IMMEDIATE TEST**



Maxxam Analytics International Corporation o/a Maxxam Analytics  
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-Free: (800) 563-6266 Fax: (905) 817-5777 www.maxxam.ca

**CHAIN OF CUSTODY RECORD**

<b>INVOICE TO:</b>		<b>REPORT TO:</b>		<b>PROJECT INFORMATION:</b>		<b>Laboratory Use Only:</b>	
Company Name: #26238 Coco Paving Inc	Attention: Teresa Cronk	Company Name: #17930 Golder Associates Ltd	Attention: Dawn Hoyle/Jamie Bonany	Quotation #: B47292	Maxxam Job #:	Bottle Order #:	
Address: 949 Wilson Ave	Address: 121 Commerce Park Drive Unit L	Address: 121 Commerce Park Drive Unit L	Address: Barrie ON L4N 8X1	P O #: 1407634			
Tel: (416) 633-9670	Tel: (705) 722-4492	Tel: (705) 722-4492	Tel: (705) 722-4492	Project Name: MCCARTHY	COC #:	Project Manager: Ema Gitej	
Email: TCronk@cocogroup.com	Email: Dawn_Hoyle@golder.com, Jamie_Bonany@golder.com	Email: Dawn_Hoyle@golder.com, Jamie_Bonany@golder.com	Email: Dawn_Hoyle@golder.com, Jamie_Bonany@golder.com	Site #: DARRYL LAUDRY			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY					ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: Please provide advance notice for rush projects			
Regulation 153 (2011)			Other Regulations			Special Instructions										Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.		
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw											Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: _____ Rush Confirmation Number: _____ (call lab for #)			
<input type="checkbox"/> Table 2	<input type="checkbox"/> Injal/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw														
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality _____														
<input type="checkbox"/> Table _____			<input type="checkbox"/> PWQO	<input type="checkbox"/> Other _____														
Include Criteria on Certificate of Analysis (Y/N)?					Field Filtered (please circle) Metals / Hg / Cr / V I	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (AAP)	pH									
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix													# of Bottles	Comments
567521	POND	JULY 14 <sup>th</sup>	12:30 Pm	Slw	✓	✓	✓	✓	✓									
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

18-Jul-16 11:30  
Ema Gitej  
B6E8653  
HGR ENV-962

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
Jodi Pascoe		16/07/14	12:30 Am	DARRYL LAUDRY		2-16/07/14	11:30		Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
		16/07/14	12:30 Am							23/23/23	Present	✓	
											Intact		

\* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam Yellow: Client

No ice

Your Project #: 1407634  
 Site#: 1407634  
 Site Location: MCCARTHY  
 Your C.O.C. #: 567522-01-01

**Attention:Dawn Hoyle/Jamie Bonany**

Golder Associates Ltd  
 121 Commerce Park Drive  
 Unit L  
 Barrie, ON  
 L4N 8X1

**Report Date: 2016/07/29**  
 Report #: R4086153  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B6F4846**

**Received: 2016/07/25, 10:42**

Sample Matrix: Water  
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/07/28	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/07/28	2016/07/28	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/07/26	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/07/28	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/07/28	2016/07/28	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/07/26	CAM SOP-00428	SM 22 2540D m

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

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Antonella Brasil, Senior Project Manager

Email: ABrasil@maxxam.ca

Phone# (905)817-5817

=====

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**RESULTS OF ANALYSES OF WATER**

Maxxam ID		CTM496	CTM496		
Sampling Date		2016/07/21 13:00	2016/07/21 13:00		
COC Number		567522-01-01	567522-01-01		
	UNITS	POND	POND Lab-Dup	RDL	QC Batch
<b>Calculated Parameters</b>					
Total Animal/Vegetable Oil and Grease	mg/L	ND		0.50	4592650
<b>Inorganics</b>					
pH	pH	8.80			4594208
Phenols-4AAP	mg/L	ND		0.0010	4594014
Total Suspended Solids	mg/L	8	9	1	4594336
<b>Petroleum Hydrocarbons</b>					
Total Oil & Grease	mg/L	ND		0.50	4598071
Total Oil & Grease Mineral/Synthetic	mg/L	ND		0.50	4598074
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected					

**GENERAL COMMENTS**

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

Package 1	23.7°C
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Sample received with temp >10 C and analyses conducted with client's consent.

**Results relate only to the items tested.**

### QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4594014	Phenols-4AAP	2016/07/28	96	80 - 120	97	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4594208	pH	2016/07/26			102	98 - 103			0.15	N/A		
4594336	Total Suspended Solids	2016/07/26					ND,RDL=1	mg/L	7.2	25	96	85 - 115
4598071	Total Oil & Grease	2016/07/28			98	85 - 115	ND, RDL=0.50	mg/L	5.0	25		
4598074	Total Oil & Grease Mineral/Synthetic	2016/07/28			95	85 - 115	ND, RDL=0.50	mg/L	3.2	25		

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 (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 (one or both samples < 5x RDL).

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).


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Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

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<b>INVOICE TO:</b>		<b>REPORT TO:</b>		<b>PROJECT INFORMATION:</b>		<b>Laboratory Use Only:</b>	
Company Name: #26238 Coco Paving Inc	Company Name: #17930 Golder Associates Ltd	Quotation #: B47292	Maxxam Job #:	Bottle Order #:	567522		
Attention: Teresa Cronk	Attention: Dawn Hoyle/Jamie Bonany	P.O. #:	1407634		COC #:		
Address: 949 Wilson Ave	Address: 121 Commerce Park Drive Unit L	Project:	MCCARTHY		Project Manager: Antonella Brasil		
Address: Toronto ON M3K 1G2	Address: Barrie ON L4N 8X1	Project Name:	MCCARTHY		Antonella Brasil		
Tel: (416) 633-9670	Tel: (705) 722-4492	Site #:	PCB TOILE		C#567522-01-01		
Fax:	Fax:	Sampled By:					
Email: TCronk@cocogroup.com	Email: Dawn_Hoyle@golder.com, Jamie_Bonany@golder.com						

**MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY**

<b>Regulation 153 (2011)</b>		<b>Other Regulations</b>		<b>Special Instructions</b>
<input type="checkbox"/> Table 1	<input type="checkbox"/> Resi/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agru/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality _____
<input type="checkbox"/> Table _____			<input type="checkbox"/> PIWQO	
			<input type="checkbox"/> Other _____	

**ANALYSIS REQUESTED (PLEASE BE SPECIFIC)**

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr / V	Low Level Total Suspended Solids	Oil & Grease - A/V/M/T	Phenols (dAAP)	PH
1 567522	POND	JULY 21ST	1:00 PM	Slw	✓	✓	✓	✓	✓
2									
3									
4									
5									
6									
7									
8									
9									
10									

**Turnaround Time (TAT) Required:**  
Please provide advance notice for rush projects

**Regular (Standard) TAT:**  
(will be applied if Rush TAT is not specified)  
Standard TAT = 5-7 Working days for most tests.  
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

**Job Specific Rush TAT (if applies to entire submission)**  
Date Required: \_\_\_\_\_ Time Required: \_\_\_\_\_  
Rush Confirmation Number: \_\_\_\_\_ (call lab for #)

# of Bottles: \_\_\_\_\_ Comments: \_\_\_\_\_

25-Jul-16 10:42  
Antonella Brasil  
B6F4846  
GK1 ENV-766

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
Jamie Bonany	16/07/21	1:00 PM	Khushkaran Kaur	2016/07/25	10:42		Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
Jamie Bonany	16/07/21	1:00 PM	Khushkaran Kaur					23/24/24	Present	✓	
									Intact		✓

\* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam Yellow: Client

Melted ice

Your Project #: 1407634  
 Site#: MCCARTHY  
 Site Location: MCCARTHY  
 Your C.O.C. #: 558436-04-01

**Attention: Dawn Hoyle/Jamie Bonany**

Golder Associates Ltd  
 121 Commerce Park Drive  
 Unit L  
 Barrie, ON  
 L4N 8X1

**Report Date: 2016/08/08**  
 Report #: R4098319  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B6G1072**  
**Received: 2016/08/02, 12:05**

Sample Matrix: Water  
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/08/05	CAM SOP-00326	EPA1664B m, SM5520B m
Total Oil and Grease	1	2016/08/05	2016/08/05	CAM SOP-00326	EPA1664B m, SM5520A m
pH	1	N/A	2016/08/04	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/08/05	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/08/05	2016/08/05	CAM SOP-00326	EPA1664B m, SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/08/04	CAM SOP-00428	SM 22 2540D m

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

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Antonella Brasil, Senior Project Manager

Email: ABrasil@maxxam.ca

Phone# (905)817-5817

=====

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**RESULTS OF ANALYSES OF WATER**

<b>Maxxam ID</b>		CUS055		
<b>Sampling Date</b>		2016/07/28 11:45		
<b>COC Number</b>		558436-04-01		
	<b>UNITS</b>	<b>571437 POND</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Calculated Parameters</b>				
Total Animal/Vegetable Oil and Grease	mg/L	2.0	0.50	4602142
<b>Inorganics</b>				
pH	pH	8.66		4605159
Phenols-4AAP	mg/L	ND	0.0010	4604547
Total Suspended Solids	mg/L	7	1	4605722
<b>Petroleum Hydrocarbons</b>				
Total Oil & Grease	mg/L	2.0	0.50	4607982
Total Oil & Grease Mineral/Synthetic	mg/L	ND	0.50	4607996
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected				

**GENERAL COMMENTS**

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

Package 1	23.3°C
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**Results relate only to the items tested.**

### QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4604547	Phenols-4AAP	2016/08/05	95	80 - 120	99	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4605159	pH	2016/08/04			102	98 - 103			0.36	N/A		
4605722	Total Suspended Solids	2016/08/04					ND,RDL=1	mg/L	NC	25	97	85 - 115
4607982	Total Oil & Grease	2016/08/05			98	85 - 115	ND, RDL=0.50	mg/L	2.8	25		
4607996	Total Oil & Grease Mineral/Synthetic	2016/08/05			97	85 - 115	ND, RDL=0.50	mg/L	2.6	25		

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 (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 (one or both samples < 5x RDL).

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Brad Newman, Scientific Specialist

---

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Maxxam Analytics International Corporation o/a Maxxam Analytics  
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-Free: (800) 563-6266 Fax: (905) 817-5777 www.maxxam.ca

CHAIN OF CUSTODY RECORD

Page of

<b>INVOICE TO:</b> Company Name: #26238 Coco Paving Inc Attention: Teresa Cronk Address: 949 Wilson Ave, Toronto ON M3K 1G2 Tel: (416) 633-9670 Email: TCronk@cocogroup.com		<b>REPORT TO:</b> Company Name: #17930 Golder Associates Ltd Attention: Dawn Hoyle/Jamie Bonany Address: 121 Commerce Park Drive Unit L, Barrie ON L4N 8X1 Tel: (705) 722-4492 Email: Dawn_Hoyle@golder.com; Jamie_Bonany@golder.com		<b>PROJECT INFORMATION:</b> Quotation #: B47292 P.O. #: Project: 1407634 Project Name: MCCARTHY Site #: Sampled By: <u>ROB SCODE</u>		<b>Laboratory Use Only:</b> Maxxam Job #: Bottle Order #: COC #: Project Manager: Rachael Watt C#558436-04-01	
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MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY						ANALYSIS REQUESTED (PLEASE BE SPECIFIC)					Turnaround Time (TAT) Required: Please provide advance notice for rush projects	
Regulation 153 (2011)		Other Regulations		Special Instructions		Field Filtered (please circle) Metals / Hg / Cr / V /	Low Level Total Suspended Solids	Oil & Grease - A/V/I/M/T	Phenols (AAP)	pH	Regular (Standard) TAT: <small>(will be applied if Rush TAT is not specified). Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are &gt; 5 days - contact your Project Manager for details.</small>	
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw							Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: _____ Rush Confirmation Number: _____ (call lab for #)	
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw		# of Bottles						Comments
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality _____								
<input type="checkbox"/> Table			<input type="checkbox"/> PWGO									
Include Criteria on Certificate of Analysis (Y/N)?												
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix								
1 571437	PODD	July 28	11:45 AM	Slw	✓	✓	✓	✓	✓			
2												
3												
4												
5												
6												
7												
8												
9												
10												

02-Aug-16 12:05  
Rachael Watt  
B6G1072  
RK6 ENV-1095

* RELINQUISHED BY: (Signature/Print) Jodi Pascoe		Date: (YY/MM/DD) 16/07/28	Time 11:45 AM	RECEIVED BY: (Signature/Print) Rajmeet Kaur		Date: (YY/MM/DD) 2016/08/02	Time 12:05	# jars used and not submitted	Laboratory Use Only			
Jodi Pascoe		16/07/28	11:45 AM					Time Sensitive	Temperature (°C) on Receipt 24/23/23	Custody Seal Present	Yes	No
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.												

Maxxam Analytics International Corporation o/a Maxxam Analytics

melted ice

Your Project #: 1407634  
 Site Location: MCCARTHY  
 Your C.O.C. #: 561769-01-01

**Attention:Dawn Hoyle**

Golder Associates Ltd  
 121 Commerce Park Drive  
 Unit L  
 Barrie, ON  
 L4N 8X1

**Report Date: 2016/06/09**  
 Report #: R4020648  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B6A9952**

**Received: 2016/05/31, 11:00**

Sample Matrix: Water  
 # Samples Received: 3

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Alkalinity	2	N/A	2016/06/04	CAM SOP-00448	SM 22 2320 B m
Alkalinity	1	N/A	2016/06/07	CAM SOP-00448	SM 22 2320 B m
Carbonate, Bicarbonate and Hydroxide	2	N/A	2016/06/06	CAM SOP-00102	APHA 4500-CO2 D
Carbonate, Bicarbonate and Hydroxide	1	N/A	2016/06/07	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	2	N/A	2016/06/06	CAM SOP-00463	EPA 325.2 m
Chloride by Automated Colourimetry	1	N/A	2016/06/07	CAM SOP-00463	EPA 325.2 m
Conductivity	2	N/A	2016/06/04	CAM SOP-00414	SM 22 2510 m
Conductivity	1	N/A	2016/06/07	CAM SOP-00414	SM 22 2510 m
Dissolved Organic Carbon (DOC) (1)	3	N/A	2016/06/03	CAM SOP-00446	SM 22 5310 B m
Fluoride	2	2016/06/04	2016/06/04	CAM SOP-00449	SM 22 4500-F C m
Fluoride	1	2016/06/06	2016/06/07	CAM SOP-00449	SM 22 4500-F C m
Hardness (calculated as CaCO3)	2	N/A	2016/06/06	CAM SOP 00102/00408/00447	SM 2340 B
Hardness (calculated as CaCO3)	1	N/A	2016/06/07	CAM SOP 00102/00408/00447	SM 2340 B
Lab Filtered Metals Analysis by ICP	2	2016/06/03	2016/06/06	CAM SOP-00408	EPA 6010C m
Lab Filtered Metals Analysis by ICP	1	2016/06/03	2016/06/07	CAM SOP-00408	EPA 6010C m
Total Metals Analysis by ICPMS	3	N/A	2016/06/06	CAM SOP-00447	EPA 6020A m
Ion Balance (% Difference)	2	N/A	2016/06/06		
Ion Balance (% Difference)	1	N/A	2016/06/07		
Anion and Cation Sum	2	N/A	2016/06/06		
Anion and Cation Sum	1	N/A	2016/06/07		
Total Ammonia-N	3	N/A	2016/06/06	CAM SOP-00441	EPA GS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (2)	3	N/A	2016/06/06	CAM SOP-00440	SM 22 4500-NO3I/NO2B
Total Oil and Grease	3	2016/06/02	2016/06/02	CAM SOP-00326	EPA1664B m,SM5520A m
pH	2	N/A	2016/06/04	CAM SOP-00413	SM 4500H+ B m
pH	1	N/A	2016/06/07	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	2	N/A	2016/06/02	CAM SOP-00444	OMOE E3179 m
Phenols (4AAP)	1	N/A	2016/06/03	CAM SOP-00444	OMOE E3179 m
Sat. pH and Langelier Index (@ 20C)	2	N/A	2016/06/06		

Your Project #: 1407634  
 Site Location: MCCARTHY  
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**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B6A9952**

**Received: 2016/05/31, 11:00**

Sample Matrix: Water  
 # Samples Received: 3

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Sat. pH and Langelier Index (@ 20C)	1	N/A	2016/06/07		
Sat. pH and Langelier Index (@ 4C)	2	N/A	2016/06/06		
Sat. pH and Langelier Index (@ 4C)	1	N/A	2016/06/07		
Sulphate by Automated Colourimetry	2	N/A	2016/06/06	CAM SOP-00464	EPA 375.4 m
Sulphate by Automated Colourimetry	1	N/A	2016/06/07	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids	3	N/A	2016/06/03	CAM SOP-00428	SM 22 2540C m
Total Kjeldahl Nitrogen in Water	2	2016/06/02	2016/06/03	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2016/06/02	2016/06/06	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	3	2016/06/02	2016/06/03	CAM SOP-00407	SM 22 4500 P B H m
Low Level Total Suspended Solids	3	N/A	2016/06/02	CAM SOP-00428	SM 22 2540D m

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.

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ema Gitej, Senior Project Manager

Email: EGitej@maxxam.ca

Phone# (905)817-5829

=====  
 Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

### RESULTS OF ANALYSES OF WATER

Maxxam ID			CLH627	CLH627			CLH628		
Sampling Date			2016/05/30 14:30	2016/05/30 14:30			2016/05/30 16:00		
COC Number			561769-01-01	561769-01-01			561769-01-01		
	UNITS	Criteria	POND	POND Lab-Dup	RDL	QC Batch	SW1	RDL	QC Batch
<b>Calculated Parameters</b>									
Anion Sum	me/L	-	9.92		N/A	4518634	10.2	N/A	4518634
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	86		1.0	4518630	130	1.0	4518630
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	3.9		1.0	4518630	1.3	1.0	4518630
Cation Sum	me/L	-	11.6		N/A	4518634	10.9	N/A	4518634
Hardness (CaCO3)	mg/L	-	210		1.0	4518632	240	1.0	4518632
Ion Balance (% Difference)	%	-	7.65		N/A	4518633	3.52	N/A	4518633
Langelier Index (@ 20C)	N/A	-	0.682			4518628	0.356		4518628
Langelier Index (@ 4C)	N/A	-	0.435			4518629	0.108		4518629
Saturation pH (@ 20C)	N/A	-	8.00			4518628	7.67		4518628
Saturation pH (@ 4C)	N/A	-	8.25			4518629	7.92		4518629
<b>Inorganics</b>									
Total Ammonia-N	mg/L	-	0.069		0.050	4523746	0.093	0.050	4523746
Conductivity	umho/cm	-	1100		1.0	4525967	1100	1.0	4527288
Total Dissolved Solids	mg/L	-	628		10	4521252	604	10	4521252
Fluoride (F-)	mg/L	-	0.67		0.10	4525971	0.63	0.10	4527283
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.64		0.10	4523641	0.67	0.10	4523641
Dissolved Organic Carbon	mg/L	-	5.8		0.20	4522589	7.0	0.20	4522589
pH	pH	<b>6.5:8.5</b>	<b>8.68</b>			4525973	8.03		4527287
Phenols-4AAP	mg/L	<b>0.001</b>	<0.0010		0.0010	4522270	<0.0010	0.0010	4522903
Total Phosphorus	mg/L	<b>0.01</b>	<b>0.019</b>	<b>0.017</b>	0.004	4522837	<b>0.043</b>	0.004	4522837
Total Suspended Solids	mg/L	-	14		1	4521261	30	1	4521261
Dissolved Sulphate (SO4)	mg/L	-	200		1.0	4525679	170	1.0	4528006
Alkalinity (Total as CaCO3)	mg/L	-	90		1.0	4525977	130	1.0	4527282
Dissolved Chloride (Cl)	mg/L	-	140		2.0	4525677	140	1.0	4527999
Nitrite (N)	mg/L	-	0.051		0.010	4525672	0.038	0.010	4527392
Nitrate (N)	mg/L	-	1.01		0.10	4525672	0.77	0.10	4527392
<b>Petroleum Hydrocarbons</b>									
Total Oil & Grease	mg/L	-	<0.50		0.50	4522853	<0.50	0.50	4522853
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									

**RESULTS OF ANALYSES OF WATER**

Maxxam ID			CLH628			CLH629	CLH629		
Sampling Date			2016/05/30 16:00			2016/05/30 12:15	2016/05/30 12:15		
COC Number			561769-01-01			561769-01-01	561769-01-01		
	UNITS	Criteria	SW1 Lab-Dup	RDL	QC Batch	SW2	SW2 Lab-Dup	RDL	QC Batch
<b>Calculated Parameters</b>									
Anion Sum	me/L	-		N/A	4518634	8.47		N/A	4518634
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-		1.0	4518630	380		1.0	4518630
Carb. Alkalinity (calc. as CaCO3)	mg/L	-		1.0	4518630	2.9		1.0	4518630
Cation Sum	me/L	-		N/A	4518634	9.58		N/A	4518634
Hardness (CaCO3)	mg/L	-		1.0	4518632	450		1.0	4518632
Ion Balance (% Difference)	%	-		N/A	4518633	6.16		N/A	4518633
Langelier Index (@ 20C)	N/A	-			4518628	1.21			4518628
Langelier Index (@ 4C)	N/A	-			4518629	0.962			4518629
Saturation pH (@ 20C)	N/A	-			4518628	6.70			4518628
Saturation pH (@ 4C)	N/A	-			4518629	6.95			4518629
<b>Inorganics</b>									
Total Ammonia-N	mg/L	-		0.050	4523746	0.056		0.050	4523746
Conductivity	umho/cm	-	1100	1.0	4527288	750	750	1.0	4525967
Total Dissolved Solids	mg/L	-		10	4521252	444		10	4521252
Fluoride (F-)	mg/L	-	0.62	0.10	4527283	0.11	0.10	0.10	4525971
Total Kjeldahl Nitrogen (TKN)	mg/L	-		0.10	4523641	0.70		0.10	4523641
Dissolved Organic Carbon	mg/L	-		0.20	4522589	13		0.20	4522589
pH	pH	<b>6.5:8.5</b>	8.03		4527287	7.91	7.88		4525973
Phenols-4AAP	mg/L	<b>0.001</b>		0.0010	4522903	<0.0010		0.0010	4522270
Total Phosphorus	mg/L	<b>0.01</b>		0.004	4522837	<b>0.12</b>		0.008	4522837
Total Suspended Solids	mg/L	-		1	4521261	13		1	4521261
Dissolved Sulphate (SO4)	mg/L	-		1.0	4528006	13		1.0	4526028
Alkalinity (Total as CaCO3)	mg/L	-	130	1.0	4527282	390	390	1.0	4525977
Dissolved Chloride (Cl)	mg/L	-		1.0	4527999	17		1.0	4526019
Nitrite (N)	mg/L	-	0.038	0.010	4527392	<0.010		0.010	4525672
Nitrate (N)	mg/L	-	0.76	0.10	4527392	<0.10		0.10	4525672
<b>Petroleum Hydrocarbons</b>									
Total Oil & Grease	mg/L	-		0.50	4522853	<0.50		0.50	4522853
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)**

<b>Maxxam ID</b>			CLH627		CLH628	CLH628		CLH629		
<b>Sampling Date</b>			2016/05/30 14:30		2016/05/30 16:00	2016/05/30 16:00		2016/05/30 12:15		
<b>COC Number</b>			561769-01-01		561769-01-01	561769-01-01		561769-01-01		
	<b>UNITS</b>	<b>Criteria</b>	<b>POND</b>	<b>QC Batch</b>	<b>SW1</b>	<b>SW1 Lab-Dup</b>	<b>QC Batch</b>	<b>SW2</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Metals</b>										
Dissolved Calcium (Ca)	mg/L	-	34	4524885	51	52	4527863	150	0.05	4524885
Dissolved Magnesium (Mg)	mg/L	-	30	4524885	27	28	4527863	18	0.05	4524885
Dissolved Potassium (K)	mg/L	-	12	4524885	10	10	4527863	4	1	4524885
Dissolved Sodium (Na)	mg/L	-	160	4524885	130	140	4527863	13	0.5	4524885
Total Aluminum (Al)	ug/L	-	150	4525683	380		4525683	22	5.0	4525683
Total Antimony (Sb)	ug/L	<b>20</b>	<0.50	4525683	<0.50		4525683	<0.50	0.50	4525683
Total Arsenic (As)	ug/L	<b>100</b>	<1.0	4525683	<1.0		4525683	<1.0	1.0	4525683
Total Barium (Ba)	ug/L	-	19	4525683	36		4525683	58	2.0	4525683
Total Beryllium (Be)	ug/L	<b>11</b>	<0.50	4525683	<0.50		4525683	<0.50	0.50	4525683
Total Boron (B)	ug/L	<b>200</b>	<b>610</b>	4525683	<b>520</b>		4525683	51	10	4525683
Total Cadmium (Cd)	ug/L	<b>0.2</b>	<0.10	4525683	<0.10		4525683	<0.10	0.10	4525683
Total Calcium (Ca)	ug/L	-	31000	4525683	51000		4525683	130000	200	4525683
Total Chromium (Cr)	ug/L	-	<5.0	4525683	<5.0		4525683	<5.0	5.0	4525683
Total Cobalt (Co)	ug/L	<b>0.9</b>	<0.50	4525683	<0.50		4525683	<0.50	0.50	4525683
Total Copper (Cu)	ug/L	<b>5</b>	1.1	4525683	1.4		4525683	<1.0	1.0	4525683
Total Iron (Fe)	ug/L	<b>300</b>	160	4525683	<b>520</b>		4525683	<b>860</b>	100	4525683
Total Lead (Pb)	ug/L	<b>5</b>	<0.50	4525683	<0.50		4525683	<0.50	0.50	4525683
Total Magnesium (Mg)	ug/L	-	28000	4525683	25000		4525683	18000	50	4525683
Total Manganese (Mn)	ug/L	-	19	4525683	170		4525683	230	2.0	4525683
Total Molybdenum (Mo)	ug/L	<b>40</b>	3.1	4525683	2.7		4525683	<0.50	0.50	4525683
Total Nickel (Ni)	ug/L	<b>25</b>	1.3	4525683	1.7		4525683	1.5	1.0	4525683
Total Potassium (K)	ug/L	-	10000	4525683	8800		4525683	3100	200	4525683
Total Selenium (Se)	ug/L	<b>100</b>	<2.0	4525683	<2.0		4525683	<2.0	2.0	4525683
Total Silicon (Si)	ug/L	-	590	4525683	1400		4525683	8600	50	4525683
Total Silver (Ag)	ug/L	<b>0.1</b>	<0.10	4525683	<0.10		4525683	<0.10	0.10	4525683
Total Sodium (Na)	ug/L	-	140000	4525683	120000		4525683	12000	100	4525683
Total Strontium (Sr)	ug/L	-	1800	4525683	1600		4525683	400	1.0	4525683
Total Thallium (Tl)	ug/L	<b>0.3</b>	<0.050	4525683	<0.050		4525683	<0.050	0.050	4525683
Total Titanium (Ti)	ug/L	-	6.6	4525683	19		4525683	<5.0	5.0	4525683
Total Vanadium (V)	ug/L	<b>6</b>	0.56	4525683	1.6		4525683	0.68	0.50	4525683
Total Zinc (Zn)	ug/L	<b>30</b>	<5.0	4525683	<5.0		4525683	<5.0	5.0	4525683

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

### TEST SUMMARY

**Maxxam ID:** CLH627  
**Sample ID:** POND  
**Matrix:** Water

**Collected:** 2016/05/30  
**Shipped:**  
**Received:** 2016/05/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	4525977	N/A	2016/06/04	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	4518630	N/A	2016/06/06	Automated Statchk
Chloride by Automated Colourimetry	KONE	4525677	N/A	2016/06/06	Deonarine Ramnarine
Conductivity	AT	4525967	N/A	2016/06/04	Yogesh Patel
Dissolved Organic Carbon (DOC)	TOCV/NDIR	4522589	N/A	2016/06/03	Anastasia Hamanov
Fluoride	ISE	4525971	2016/06/04	2016/06/04	Yogesh Patel
Hardness (calculated as CaCO3)		4518632	N/A	2016/06/06	Automated Statchk
Lab Filtered Metals Analysis by ICP	ICP	4524885	2016/06/03	2016/06/06	Azita Fazaeli
Total Metals Analysis by ICPMS	ICP/MS	4525683	N/A	2016/06/06	Arefa Dabhad
Ion Balance (% Difference)	CALC	4518633	N/A	2016/06/06	Automated Statchk
Anion and Cation Sum	CALC	4518634	N/A	2016/06/06	Automated Statchk
Total Ammonia-N	LACH/NH4	4523746	N/A	2016/06/06	Charles Opoku-Ware
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	4525672	N/A	2016/06/06	Chandra Nandlal
Total Oil and Grease	BAL	4522853	2016/06/02	2016/06/02	Amjad Mir
pH	AT	4525973	N/A	2016/06/04	Yogesh Patel
Phenols (4AAP)	TECH/PHEN	4522270	N/A	2016/06/02	Faye Sabet
Sat. pH and Langelier Index (@ 20C)	CALC	4518628	N/A	2016/06/06	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	4518629	N/A	2016/06/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	4525679	N/A	2016/06/06	Deonarine Ramnarine
Total Dissolved Solids	BAL	4521252	N/A	2016/06/03	Fang Wang
Total Kjeldahl Nitrogen in Water	SKAL	4523641	2016/06/02	2016/06/03	Amarinder Sawhney
Total Phosphorus (Colourimetric)	LACH/P	4522837	2016/06/02	2016/06/03	Sarabjit Raina
Low Level Total Suspended Solids	BAL	4521261	N/A	2016/06/02	Gurpreet Kaur

**Maxxam ID:** CLH627 Dup  
**Sample ID:** POND  
**Matrix:** Water

**Collected:** 2016/05/30  
**Shipped:**  
**Received:** 2016/05/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Phosphorus (Colourimetric)	LACH/P	4522837	2016/06/02	2016/06/03	Sarabjit Raina

**Maxxam ID:** CLH628  
**Sample ID:** SW1  
**Matrix:** Water

**Collected:** 2016/05/30  
**Shipped:**  
**Received:** 2016/05/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	4527282	N/A	2016/06/07	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	4518630	N/A	2016/06/07	Automated Statchk
Chloride by Automated Colourimetry	KONE	4527999	N/A	2016/06/07	Deonarine Ramnarine
Conductivity	AT	4527288	N/A	2016/06/07	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	4522589	N/A	2016/06/03	Anastasia Hamanov
Fluoride	ISE	4527283	2016/06/06	2016/06/07	Surinder Rai
Hardness (calculated as CaCO3)		4518632	N/A	2016/06/07	Automated Statchk
Lab Filtered Metals Analysis by ICP	ICP	4527863	2016/06/03	2016/06/07	Azita Fazaeli

### TEST SUMMARY

**Maxxam ID:** CLH628  
**Sample ID:** SW1  
**Matrix:** Water

**Collected:** 2016/05/30  
**Shipped:**  
**Received:** 2016/05/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Metals Analysis by ICPMS	ICP/MS	4525683	N/A	2016/06/06	Arefa Dabhad
Ion Balance (% Difference)	CALC	4518633	N/A	2016/06/07	Automated Statchk
Anion and Cation Sum	CALC	4518634	N/A	2016/06/07	Automated Statchk
Total Ammonia-N	LACH/NH4	4523746	N/A	2016/06/06	Charles Opoku-Ware
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	4527392	N/A	2016/06/06	Chandra Nandlal
Total Oil and Grease	BAL	4522853	2016/06/02	2016/06/02	Amjad Mir
pH	AT	4527287	N/A	2016/06/07	Surinder Rai
Phenols (4AAP)	TECH/PHEN	4522903	N/A	2016/06/03	Faye Sabet
Sat. pH and Langelier Index (@ 20C)	CALC	4518628	N/A	2016/06/07	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	4518629	N/A	2016/06/07	Automated Statchk
Sulphate by Automated Colourimetry	KONE	4528006	N/A	2016/06/07	Alina Dobreanu
Total Dissolved Solids	BAL	4521252	N/A	2016/06/03	Fang Wang
Total Kjeldahl Nitrogen in Water	SKAL	4523641	2016/06/02	2016/06/03	Amarinder Sawhney
Total Phosphorus (Colourimetric)	LACH/P	4522837	2016/06/02	2016/06/03	Sarabjit Raina
Low Level Total Suspended Solids	BAL	4521261	N/A	2016/06/02	Gurpreet Kaur

**Maxxam ID:** CLH628 Dup  
**Sample ID:** SW1  
**Matrix:** Water

**Collected:** 2016/05/30  
**Shipped:**  
**Received:** 2016/05/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	4527282	N/A	2016/06/07	Surinder Rai
Conductivity	AT	4527288	N/A	2016/06/07	Surinder Rai
Fluoride	ISE	4527283	2016/06/06	2016/06/07	Surinder Rai
Lab Filtered Metals Analysis by ICP	ICP	4527863	2016/06/06	2016/06/07	Azita Fazaeli
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	4527392	N/A	2016/06/06	Chandra Nandlal
pH	AT	4527287	N/A	2016/06/07	Surinder Rai

**Maxxam ID:** CLH629  
**Sample ID:** SW2  
**Matrix:** Water

**Collected:** 2016/05/30  
**Shipped:**  
**Received:** 2016/05/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	4525977	N/A	2016/06/04	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	4518630	N/A	2016/06/06	Automated Statchk
Chloride by Automated Colourimetry	KONE	4526019	N/A	2016/06/06	Deonarine Ramnarine
Conductivity	AT	4525967	N/A	2016/06/04	Yogesh Patel
Dissolved Organic Carbon (DOC)	TOCV/NDIR	4522589	N/A	2016/06/03	Anastasia Hamanov
Fluoride	ISE	4525971	2016/06/04	2016/06/04	Yogesh Patel
Hardness (calculated as CaCO3)		4518632	N/A	2016/06/06	Automated Statchk
Lab Filtered Metals Analysis by ICP	ICP	4524885	2016/06/03	2016/06/06	Azita Fazaeli
Total Metals Analysis by ICPMS	ICP/MS	4525683	N/A	2016/06/06	Arefa Dabhad
Ion Balance (% Difference)	CALC	4518633	N/A	2016/06/06	Automated Statchk
Anion and Cation Sum	CALC	4518634	N/A	2016/06/06	Automated Statchk

### TEST SUMMARY

**Maxxam ID:** CLH629  
**Sample ID:** SW2  
**Matrix:** Water

**Collected:** 2016/05/30  
**Shipped:**  
**Received:** 2016/05/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Ammonia-N	LACH/NH4	4523746	N/A	2016/06/06	Charles Opoku-Ware
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	4525672	N/A	2016/06/06	Chandra Nandlal
Total Oil and Grease	BAL	4522853	2016/06/02	2016/06/02	Amjad Mir
pH	AT	4525973	N/A	2016/06/04	Yogesh Patel
Phenols (4AAP)	TECH/PHEN	4522270	N/A	2016/06/02	Faye Sabet
Sat. pH and Langelier Index (@ 20C)	CALC	4518628	N/A	2016/06/06	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	4518629	N/A	2016/06/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	4526028	N/A	2016/06/06	Alina Dobreanu
Total Dissolved Solids	BAL	4521252	N/A	2016/06/03	Fang Wang
Total Kjeldahl Nitrogen in Water	SKAL	4523641	2016/06/02	2016/06/06	Amarinder Sawhney
Total Phosphorus (Colourimetric)	LACH/P	4522837	2016/06/02	2016/06/03	Sarabjit Raina
Low Level Total Suspended Solids	BAL	4521261	N/A	2016/06/02	Gurpreet Kaur

**Maxxam ID:** CLH629 Dup  
**Sample ID:** SW2  
**Matrix:** Water

**Collected:** 2016/05/30  
**Shipped:**  
**Received:** 2016/05/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	4525977	N/A	2016/06/04	Yogesh Patel
Conductivity	AT	4525967	N/A	2016/06/04	Yogesh Patel
Fluoride	ISE	4525971	2016/06/04	2016/06/04	Yogesh Patel
pH	AT	4525973	N/A	2016/06/04	Yogesh Patel

### GENERAL COMMENTS

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

Package 1	8.0°C
Package 2	8.3°C
Package 3	6.0°C

**Results relate only to the items tested.**

**QUALITY ASSURANCE REPORT**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4521252	FW	QC Standard	Total Dissolved Solids	2016/06/03		97	%	90 - 110
4521252	FW	Method Blank	Total Dissolved Solids	2016/06/03	<10		mg/L	
4521252	FW	RPD	Total Dissolved Solids	2016/06/03	NC		%	25
4521261	GKR	QC Standard	Total Suspended Solids	2016/06/02		101	%	85 - 115
4521261	GKR	Method Blank	Total Suspended Solids	2016/06/02	<1		mg/L	
4521261	GKR	RPD	Total Suspended Solids	2016/06/02	NC		%	25
4522270	FFS	Matrix Spike	Phenols-4AAP	2016/06/02		NC	%	80 - 120
4522270	FFS	Spiked Blank	Phenols-4AAP	2016/06/02		101	%	85 - 115
4522270	FFS	Method Blank	Phenols-4AAP	2016/06/02	<0.0010		mg/L	
4522270	FFS	RPD	Phenols-4AAP	2016/06/02	2.7		%	20
4522589	AHA	Matrix Spike	Dissolved Organic Carbon	2016/06/02		92	%	80 - 120
4522589	AHA	Spiked Blank	Dissolved Organic Carbon	2016/06/02		94	%	80 - 120
4522589	AHA	Method Blank	Dissolved Organic Carbon	2016/06/02	<0.20		mg/L	
4522589	AHA	RPD	Dissolved Organic Carbon	2016/06/02	NC		%	20
4522837	SNR	Matrix Spike [CLH627-04]	Total Phosphorus	2016/06/03		99	%	80 - 120
4522837	SNR	QC Standard	Total Phosphorus	2016/06/03		104	%	80 - 120
4522837	SNR	Spiked Blank	Total Phosphorus	2016/06/03		97	%	80 - 120
4522837	SNR	Method Blank	Total Phosphorus	2016/06/03	<0.004		mg/L	
4522837	SNR	RPD [CLH627-04]	Total Phosphorus	2016/06/03	NC		%	20
4522853	AMJ	Spiked Blank	Total Oil & Grease	2016/06/02		98	%	85 - 115
4522853	AMJ	RPD	Total Oil & Grease	2016/06/02	2.5		%	25
4522853	AMJ	Method Blank	Total Oil & Grease	2016/06/02	<0.50		mg/L	
4522903	FFS	Matrix Spike	Phenols-4AAP	2016/06/03		97	%	80 - 120
4522903	FFS	Spiked Blank	Phenols-4AAP	2016/06/03		98	%	85 - 115
4522903	FFS	Method Blank	Phenols-4AAP	2016/06/03	<0.0010		mg/L	
4522903	FFS	RPD	Phenols-4AAP	2016/06/03	NC		%	20
4523641	AAY	Matrix Spike	Total Kjeldahl Nitrogen (TKN)	2016/06/03		100	%	80 - 120
4523641	AAY	QC Standard	Total Kjeldahl Nitrogen (TKN)	2016/06/03		100	%	80 - 120
4523641	AAY	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2016/06/03		100	%	80 - 120
4523641	AAY	Method Blank	Total Kjeldahl Nitrogen (TKN)	2016/06/03	<0.10		mg/L	
4523641	AAY	RPD	Total Kjeldahl Nitrogen (TKN)	2016/06/03	NC		%	20
4523746	COP	Matrix Spike	Total Ammonia-N	2016/06/06		89	%	80 - 120
4523746	COP	Spiked Blank	Total Ammonia-N	2016/06/06		98	%	85 - 115
4523746	COP	Method Blank	Total Ammonia-N	2016/06/06	<0.050		mg/L	
4523746	COP	RPD	Total Ammonia-N	2016/06/06	NC		%	20
4524885	AFZ	Matrix Spike	Dissolved Calcium (Ca)	2016/06/06		108	%	80 - 120
			Dissolved Magnesium (Mg)	2016/06/06		101	%	80 - 120
			Dissolved Potassium (K)	2016/06/06		109	%	80 - 120
			Dissolved Sodium (Na)	2016/06/06		110	%	80 - 120
4524885	AFZ	Spiked Blank	Dissolved Calcium (Ca)	2016/06/06		102	%	80 - 120
			Dissolved Magnesium (Mg)	2016/06/06		93	%	80 - 120
			Dissolved Potassium (K)	2016/06/06		102	%	80 - 120
			Dissolved Sodium (Na)	2016/06/06		103	%	80 - 120
4524885	AFZ	Method Blank	Dissolved Calcium (Ca)	2016/06/06	<0.05		mg/L	
			Dissolved Magnesium (Mg)	2016/06/06	<0.05		mg/L	
			Dissolved Potassium (K)	2016/06/06	<1		mg/L	
			Dissolved Sodium (Na)	2016/06/06	<0.5		mg/L	
4524885	AFZ	RPD	Dissolved Calcium (Ca)	2016/06/06	2.6		%	25
			Dissolved Magnesium (Mg)	2016/06/06	0.50		%	25
			Dissolved Potassium (K)	2016/06/06	NC		%	25
			Dissolved Sodium (Na)	2016/06/06	NC		%	25
4525672	C_N	Matrix Spike	Nitrite (N)	2016/06/06		109	%	80 - 120

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4525672	C_N	Spiked Blank	Nitrate (N)	2016/06/06		93	%	80 - 120
			Nitrite (N)	2016/06/06		109	%	80 - 120
			Nitrate (N)	2016/06/06		98	%	80 - 120
4525672	C_N	Method Blank	Nitrite (N)	2016/06/06	<0.010		mg/L	
			Nitrate (N)	2016/06/06	<0.10		mg/L	
4525672	C_N	RPD	Nitrite (N)	2016/06/06	NC		%	25
			Nitrate (N)	2016/06/06	NC		%	25
			Dissolved Chloride (Cl)	2016/06/06		106	%	80 - 120
4525677	DRM	Spiked Blank	Dissolved Chloride (Cl)	2016/06/06		101	%	80 - 120
4525677	DRM	Method Blank	Dissolved Chloride (Cl)	2016/06/06	<1.0		mg/L	
4525677	DRM	RPD	Dissolved Chloride (Cl)	2016/06/06	NC		%	20
4525679	DRM	Matrix Spike	Dissolved Sulphate (SO4)	2016/06/06		119	%	75 - 125
4525679	DRM	Spiked Blank	Dissolved Sulphate (SO4)	2016/06/06		102	%	80 - 120
4525679	DRM	Method Blank	Dissolved Sulphate (SO4)	2016/06/06	<1.0		mg/L	
4525679	DRM	RPD	Dissolved Sulphate (SO4)	2016/06/06	NC		%	20
4525683	ADA	Matrix Spike	Total Aluminum (Al)	2016/06/06		NC	%	80 - 120
			Total Antimony (Sb)	2016/06/06		101	%	80 - 120
			Total Arsenic (As)	2016/06/06		101	%	80 - 120
			Total Barium (Ba)	2016/06/06		102	%	80 - 120
			Total Beryllium (Be)	2016/06/06		95	%	80 - 120
			Total Boron (B)	2016/06/06		87	%	80 - 120
			Total Cadmium (Cd)	2016/06/06		100	%	80 - 120
			Total Calcium (Ca)	2016/06/06		NC	%	80 - 120
			Total Chromium (Cr)	2016/06/06		99	%	80 - 120
			Total Cobalt (Co)	2016/06/06		101	%	80 - 120
			Total Copper (Cu)	2016/06/06		100	%	80 - 120
			Total Iron (Fe)	2016/06/06		99	%	80 - 120
			Total Lead (Pb)	2016/06/06		97	%	80 - 120
			Total Magnesium (Mg)	2016/06/06		99	%	80 - 120
			Total Manganese (Mn)	2016/06/06		100	%	80 - 120
			Total Molybdenum (Mo)	2016/06/06		101	%	80 - 120
			Total Nickel (Ni)	2016/06/06		100	%	80 - 120
			Total Potassium (K)	2016/06/06		99	%	80 - 120
			Total Selenium (Se)	2016/06/06		103	%	80 - 120
			Total Silicon (Si)	2016/06/06		98	%	80 - 120
			Total Silver (Ag)	2016/06/06		100	%	80 - 120
			Total Sodium (Na)	2016/06/06		NC	%	80 - 120
			Total Strontium (Sr)	2016/06/06		NC	%	80 - 120
			Total Thallium (Tl)	2016/06/06		100	%	80 - 120
			Total Titanium (Ti)	2016/06/06		99	%	80 - 120
			Total Vanadium (V)	2016/06/06		98	%	80 - 120
			Total Zinc (Zn)	2016/06/06		102	%	80 - 120
4525683	ADA	Spiked Blank	Total Aluminum (Al)	2016/06/06		105	%	80 - 120
			Total Antimony (Sb)	2016/06/06		102	%	80 - 120
			Total Arsenic (As)	2016/06/06		104	%	80 - 120
			Total Barium (Ba)	2016/06/06		104	%	80 - 120
			Total Beryllium (Be)	2016/06/06		96	%	80 - 120
			Total Boron (B)	2016/06/06		91	%	80 - 120
			Total Cadmium (Cd)	2016/06/06		102	%	80 - 120
			Total Calcium (Ca)	2016/06/06		104	%	80 - 120
			Total Chromium (Cr)	2016/06/06		103	%	80 - 120
Total Cobalt (Co)	2016/06/06		107	%	80 - 120			

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Copper (Cu)	2016/06/06		101	%	80 - 120
			Total Iron (Fe)	2016/06/06		103	%	80 - 120
			Total Lead (Pb)	2016/06/06		100	%	80 - 120
			Total Magnesium (Mg)	2016/06/06		103	%	80 - 120
			Total Manganese (Mn)	2016/06/06		104	%	80 - 120
			Total Molybdenum (Mo)	2016/06/06		102	%	80 - 120
			Total Nickel (Ni)	2016/06/06		105	%	80 - 120
			Total Potassium (K)	2016/06/06		102	%	80 - 120
			Total Selenium (Se)	2016/06/06		109	%	80 - 120
			Total Silicon (Si)	2016/06/06		101	%	80 - 120
			Total Silver (Ag)	2016/06/06		103	%	80 - 120
			Total Sodium (Na)	2016/06/06		105	%	80 - 120
			Total Strontium (Sr)	2016/06/06		100	%	80 - 120
			Total Thallium (Tl)	2016/06/06		105	%	80 - 120
			Total Titanium (Ti)	2016/06/06		101	%	80 - 120
			Total Vanadium (V)	2016/06/06		101	%	80 - 120
			Total Zinc (Zn)	2016/06/06		107	%	80 - 120
4525683	ADA	Method Blank	Total Aluminum (Al)	2016/06/06	<5.0		ug/L	
			Total Antimony (Sb)	2016/06/06	<0.50		ug/L	
			Total Arsenic (As)	2016/06/06	<1.0		ug/L	
			Total Barium (Ba)	2016/06/06	<2.0		ug/L	
			Total Beryllium (Be)	2016/06/06	<0.50		ug/L	
			Total Boron (B)	2016/06/06	<10		ug/L	
			Total Cadmium (Cd)	2016/06/06	<0.10		ug/L	
			Total Calcium (Ca)	2016/06/06	<200		ug/L	
			Total Chromium (Cr)	2016/06/06	<5.0		ug/L	
			Total Cobalt (Co)	2016/06/06	<0.50		ug/L	
			Total Copper (Cu)	2016/06/06	<1.0		ug/L	
			Total Iron (Fe)	2016/06/06	<100		ug/L	
			Total Lead (Pb)	2016/06/06	<0.50		ug/L	
			Total Magnesium (Mg)	2016/06/06	<50		ug/L	
			Total Manganese (Mn)	2016/06/06	<2.0		ug/L	
			Total Molybdenum (Mo)	2016/06/06	<0.50		ug/L	
			Total Nickel (Ni)	2016/06/06	<1.0		ug/L	
			Total Potassium (K)	2016/06/06	<200		ug/L	
			Total Selenium (Se)	2016/06/06	<2.0		ug/L	
			Total Silicon (Si)	2016/06/06	<50		ug/L	
			Total Silver (Ag)	2016/06/06	<0.10		ug/L	
			Total Sodium (Na)	2016/06/06	<100		ug/L	
			Total Strontium (Sr)	2016/06/06	<1.0		ug/L	
			Total Thallium (Tl)	2016/06/06	<0.050		ug/L	
			Total Titanium (Ti)	2016/06/06	<5.0		ug/L	
			Total Vanadium (V)	2016/06/06	<0.50		ug/L	
			Total Zinc (Zn)	2016/06/06	15, RDL=5.0		ug/L	
4525683	ADA	RPD	Total Aluminum (Al)	2016/06/06	1.6		%	20
			Total Antimony (Sb)	2016/06/06	NC		%	20
			Total Arsenic (As)	2016/06/06	NC		%	20
			Total Barium (Ba)	2016/06/06	2.4		%	20
			Total Beryllium (Be)	2016/06/06	NC		%	20
			Total Boron (B)	2016/06/06	1.3		%	20
			Total Cadmium (Cd)	2016/06/06	NC		%	20

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Calcium (Ca)	2016/06/06	4.1		%	20
			Total Chromium (Cr)	2016/06/06	NC		%	20
			Total Cobalt (Co)	2016/06/06	NC		%	20
			Total Copper (Cu)	2016/06/06	NC		%	20
			Total Lead (Pb)	2016/06/06	NC		%	20
			Total Magnesium (Mg)	2016/06/06	1.0		%	20
			Total Manganese (Mn)	2016/06/06	3.5		%	20
			Total Molybdenum (Mo)	2016/06/06	1.7		%	20
			Total Nickel (Ni)	2016/06/06	4.7		%	20
			Total Potassium (K)	2016/06/06	2.2		%	20
			Total Selenium (Se)	2016/06/06	NC		%	20
			Total Silicon (Si)	2016/06/06	0.53		%	20
			Total Silver (Ag)	2016/06/06	NC		%	20
			Total Sodium (Na)	2016/06/06	2.8		%	20
			Total Strontium (Sr)	2016/06/06	2.3		%	20
			Total Thallium (Tl)	2016/06/06	NC		%	20
			Total Titanium (Ti)	2016/06/06	NC		%	20
			Total Vanadium (V)	2016/06/06	NC		%	20
4525967	YPA	Spiked Blank	Conductivity	2016/06/04		100	%	85 - 115
4525967	YPA	Method Blank	Conductivity	2016/06/04	<1.0		umho/c	
4525967	YPA	RPD [CLH629-02]	Conductivity	2016/06/04	0.13		%	25
4525971	YPA	Matrix Spike [CLH629-02]	Fluoride (F-)	2016/06/04		102	%	80 - 120
4525971	YPA	Spiked Blank	Fluoride (F-)	2016/06/04		105	%	80 - 120
4525971	YPA	Method Blank	Fluoride (F-)	2016/06/04	<0.10		mg/L	
4525971	YPA	RPD [CLH629-02]	Fluoride (F-)	2016/06/04	NC		%	20
4525973	YPA	Spiked Blank	pH	2016/06/04		102	%	98 - 103
4525973	YPA	RPD [CLH629-02]	pH	2016/06/04	0.39		%	N/A
4525977	YPA	Spiked Blank	Alkalinity (Total as CaCO3)	2016/06/04		97	%	85 - 115
4525977	YPA	Method Blank	Alkalinity (Total as CaCO3)	2016/06/04	<1.0		mg/L	
4525977	YPA	RPD [CLH629-02]	Alkalinity (Total as CaCO3)	2016/06/04	1.0		%	25
4526019	DRM	Matrix Spike	Dissolved Chloride (Cl)	2016/06/06		NC	%	80 - 120
4526019	DRM	Spiked Blank	Dissolved Chloride (Cl)	2016/06/06		101	%	80 - 120
4526019	DRM	Method Blank	Dissolved Chloride (Cl)	2016/06/06	<1.0		mg/L	
4526019	DRM	RPD	Dissolved Chloride (Cl)	2016/06/06	1.5		%	20
4526028	ADB	Matrix Spike	Dissolved Sulphate (SO4)	2016/06/06		119	%	75 - 125
4526028	ADB	Spiked Blank	Dissolved Sulphate (SO4)	2016/06/06		103	%	80 - 120
4526028	ADB	Method Blank	Dissolved Sulphate (SO4)	2016/06/06	<1.0		mg/L	
4526028	ADB	RPD	Dissolved Sulphate (SO4)	2016/06/06	NC		%	20
4527282	SAU	Spiked Blank	Alkalinity (Total as CaCO3)	2016/06/07		97	%	85 - 115
4527282	SAU	Method Blank	Alkalinity (Total as CaCO3)	2016/06/07	<1.0		mg/L	
4527282	SAU	RPD [CLH628-02]	Alkalinity (Total as CaCO3)	2016/06/07	0.60		%	25
4527283	SAU	Matrix Spike [CLH628-02]	Fluoride (F-)	2016/06/07		107	%	80 - 120
4527283	SAU	Spiked Blank	Fluoride (F-)	2016/06/07		103	%	80 - 120
4527283	SAU	Method Blank	Fluoride (F-)	2016/06/07	<0.10		mg/L	
4527283	SAU	RPD [CLH628-02]	Fluoride (F-)	2016/06/07	0.46		%	20
4527287	SAU	Spiked Blank	pH	2016/06/07		102	%	98 - 103
4527287	SAU	RPD [CLH628-02]	pH	2016/06/07	0.0025		%	N/A
4527288	SAU	Spiked Blank	Conductivity	2016/06/07		101	%	85 - 115
4527288	SAU	Method Blank	Conductivity	2016/06/07	<1.0		umho/c	
4527288	SAU	RPD [CLH628-02]	Conductivity	2016/06/07	0.59		%	25
4527392	C_N	Matrix Spike [CLH628-02]	Nitrite (N)	2016/06/06		107	%	80 - 120
			Nitrate (N)	2016/06/06		84	%	80 - 120

### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4527392	C_N	Spiked Blank	Nitrite (N)	2016/06/06		111	%	80 - 120
			Nitrate (N)	2016/06/06		97	%	80 - 120
4527392	C_N	Method Blank	Nitrite (N)	2016/06/06	<0.010		mg/L	
			Nitrate (N)	2016/06/06	<0.10		mg/L	
4527392	C_N	RPD [CLH628-02]	Nitrite (N)	2016/06/06	NC		%	25
			Nitrate (N)	2016/06/06	1.5		%	25
4527863	AFZ	Matrix Spike [CLH628-02]	Dissolved Calcium (Ca)	2016/06/07		NC	%	80 - 120
			Dissolved Magnesium (Mg)	2016/06/07		NC	%	80 - 120
			Dissolved Potassium (K)	2016/06/07		NC	%	80 - 120
			Dissolved Sodium (Na)	2016/06/07		NC	%	80 - 120
4527863	AFZ	Spiked Blank	Dissolved Calcium (Ca)	2016/06/07		99	%	80 - 120
			Dissolved Magnesium (Mg)	2016/06/07		96	%	80 - 120
			Dissolved Potassium (K)	2016/06/07		97	%	80 - 120
			Dissolved Sodium (Na)	2016/06/07		98	%	80 - 120
4527863	AFZ	Method Blank	Dissolved Calcium (Ca)	2016/06/07	<0.05		mg/L	
			Dissolved Magnesium (Mg)	2016/06/07	<0.05		mg/L	
			Dissolved Potassium (K)	2016/06/07	<1		mg/L	
			Dissolved Sodium (Na)	2016/06/07	<0.5		mg/L	
4527863	AFZ	RPD [CLH628-02]	Dissolved Calcium (Ca)	2016/06/07	1.8		%	25
			Dissolved Magnesium (Mg)	2016/06/07	1.5		%	25
			Dissolved Potassium (K)	2016/06/07	3.0		%	25
			Dissolved Sodium (Na)	2016/06/07	1.6		%	25
4527999	DRM	Matrix Spike	Dissolved Chloride (Cl)	2016/06/07		NC	%	80 - 120
4527999	DRM	Spiked Blank	Dissolved Chloride (Cl)	2016/06/07		104	%	80 - 120
4527999	DRM	Method Blank	Dissolved Chloride (Cl)	2016/06/07	<1.0		mg/L	
4527999	DRM	RPD	Dissolved Chloride (Cl)	2016/06/07	0.44		%	20
4528006	ADB	Matrix Spike	Dissolved Sulphate (SO4)	2016/06/07		NC	%	75 - 125
4528006	ADB	Spiked Blank	Dissolved Sulphate (SO4)	2016/06/07		102	%	80 - 120
4528006	ADB	Method Blank	Dissolved Sulphate (SO4)	2016/06/07	<1.0		mg/L	
4528006	ADB	RPD	Dissolved Sulphate (SO4)	2016/06/07	2.2		%	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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).


---

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

**Exceedence Summary Table – Prov. Water Quality Obj.  
Result Exceedences**

Sample ID	Maxxam ID	Parameter	Criteria	Result	DL	Units
POND	CLH627-06	Total Boron (B)	200	610	10	ug/L
POND	CLH627-04-Lab Dup	Total Phosphorus	0.01	0.017	0.004	mg/L
POND	CLH627-04	Total Phosphorus	0.01	0.019	0.004	mg/L
SW1	CLH628-06	Total Boron (B)	200	520	10	ug/L
SW1	CLH628-06	Total Iron (Fe)	300	520	100	ug/L
SW1	CLH628-04	Total Phosphorus	0.01	0.043	0.004	mg/L
SW2	CLH629-06	Total Iron (Fe)	300	860	100	ug/L
SW2	CLH629-04	Total Phosphorus	0.01	0.12	0.008	mg/L

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

CLIENT NAME: GOLDER ASSOCIATES LTD.  
121 COMMERCE PARK DRIVE, UNIT L  
BARRIE, ON L4N8X1  
(705) 722-4492

ATTENTION TO: Ryan Abrams

PROJECT: 1407634

AGAT WORK ORDER: 16T110278

ECOTOX ANALYSIS REVIEWED BY: Virginie Bérubé, biologiste

DATE REPORTED: Aug 09, 2016

PAGES (INCLUDING COVER): 6

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 16T110278

PROJECT: 1407634

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Ryan Abrams

SAMPLING SITE:

SAMPLED BY:

### Daphnia Lethality (D. magna) UC-48h

DATE RECEIVED: 2016-06-29

DATE REPORTED: 2016-08-09

SAMPLE DESCRIPTION: Pond B

SAMPLE TYPE: Water

DATE SAMPLED: 6/28/2016

Parameter	Unit	G / S	RDL	7672308
-----------	------	-------	-----	---------

Mortality 100% v/v      % mortality-48h      0

Conclusion      NON LETHAL

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

7672308 Refer to the annex for analysis details.

Conclusion legend:

Non lethal: mortality: 10% or less

Acceptable: mortality: between 10% and 50%

Acute lethality: mortality: more than 50%

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 16T110278

PROJECT: 1407634

5835 COOPERS AVENUE  
 MISSISSAUGA, ONTARIO  
 CANADA L4Z 1Y2  
 TEL (905)712-5100  
 FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Ryan Abrams

SAMPLING SITE:

SAMPLED BY:

### Rainbow Trout Lethality (O. mykiss) UC-96h

DATE RECEIVED: 2016-06-29

DATE REPORTED: 2016-08-09

SAMPLE DESCRIPTION: Pond A

SAMPLE TYPE: Water

DATE SAMPLED: 6/28/2016

Parameter	Unit	G / S	RDL	7672307
-----------	------	-------	-----	---------

Mortality 100% v/v	% mortality-96h			0
--------------------	-----------------	--	--	---

Conclusion	NON LETHAL			
------------	------------	--	--	--

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

7672307 Refer to the annex for analysis details.

Conclusion legend:

Non lethal: mortality: 10% or less

Acceptable: mortality: between 10% and 50%

Acute lethality: mortality: more than 50%

Certified By:





## Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 16T110278

PROJECT: 1407634

ATTENTION TO: Ryan Abrams

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
ECOTOX Analysis			
Mortality 100% v/v			NA
Conclusion			
Mortality 100% v/v	ECO-152-20000F	SPE1/RM/13	



# AGAT

## Laboratories

1 Phase

5835 Coopers Avenue  
Mississauga, Ontario L4Z 1Y2  
Ph: 905.712.5100 Fax: 905.712.5122  
web@atlabs.com

### Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

#### Report Information:

Company: Gelder Associates LTD  
Contact: Ryan Abrams  
Address: 121 Commerce Park Drive Unit L  
Phone: 905-722-4492 Fax: 905-722-3786  
Reports to be sent to:  
1. Email: Ryan-Abrams@gelder.com  
2. Email: Sammie-Bonany@gelder.com

#### Project Information:

Project: 1407634  
Site Location: Hickathay - Coca  
Sampled By: RPA  
AGAT Quote #: 60738 PO: \_\_\_\_\_  
Please note: If quotation number is not provided, client will be billed full price for analysis

#### Invoice Information:

Company: Gelder Associates  
Contact: Ruth Chappik  
Address: 121 Commerce Park Dr Unit L Bank  
Email: Patricia-Chappik@gelder.com  
Bill To Same: Yes  No

#### Regulatory Requirements:

(Please check all applicable boxes)  
 Regulation 153/04  
 Sewer Use  
 Table Indicate One  
 Ind/Com  
 Res/Park  
 Agriculture  
 Storm  
 Soil Texture (check one)  
 Coarse  
 Fine  
 Regulation 558  
 CCME  
 Prov. Water Quality Objectives (PWQO)  
 Other  
Indicate One

Is this submission for a Record of Site Condition?  
 Yes  No

Report Guideline on Certificate of Analysis  
 Yes  No

#### Sample Matrix Legend

- B Biota
- GW Ground Water
- O Oil
- P Paint
- S Soil
- SD Sediment
- SW Surface Water

Field Filtered - Metals, Hg, CrVI  
(Please Circle)

#### Comments/Special Instructions

Y / N

Metals and Inorganics  
Metal Scan  
Hydride Forming Metals  
Client Custom Metals  
ORPs:  B-HWS  Cl  CN  Cr<sup>6+</sup>  EC  FOC  NO<sub>2</sub>/NO<sub>3</sub>  Total N  Hg  pH  SAR  
Nutrients:  TP  NH<sub>3</sub>  TKN  NO<sub>2</sub>  NO<sub>3</sub>  NO<sub>2</sub>  NO<sub>3</sub>/NO<sub>2</sub>  
Volatiles:  VOC  BTEX  THM

(Check Applicable)

CCME Fractions 1 to 4  
ABNs  
PAHs  
Chlorophenols  
PCBs  
Organochlorine Pesticides  
TCLP Metals/Inorganics  
Sewer Use

X Rainbow to Daphnia SingleC

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/Special Instructions	Y / N
<u>Pend</u>	<u>28-June</u>	<u>3:00PM</u>	<u>1</u>	<u>SW</u>		

Samples Requisitioned By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
<u>Ryan Abrams</u>	<u>28-June</u>	<u>6:10PM</u>	<u>Sammie</u>	<u>16/6/15</u>	<u>10:16</u>

Samples Requisitioned By (Print Name and Sign): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Samples Received By (Print Name and Sign): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Page 1 of 1  
No: T 026180

#### Laboratory Use Only

Work Order #: 16T110278

Cooler Quantity: 1 pallet

Arrival Temperatures: 87.84 F

Custody Seal Intact:  Yes  No  N/A

#### Turnaround Time (TAT) Required:

Regular TAT  5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

3 Business Days  2 Business Days  1 Business Day

OR Date Required (Rush Surcharges May Apply): \_\_\_\_\_

Please provide prior notification for rush TAT

\*TAT is exclusive of weekends and statutory holidays



# AGAT

## Laboratories

Sim Stn 00

5835 Coopers Avenue  
Mississauga, Ontario L4Z 1Y2  
Ph: 905.712.5100 Fax: 905.712.5122  
web@ath.agatlabs.com

### Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

#### Report Information:

Company: Gelder Associates LTD  
Contact: Ryan Abrams  
Address: 121 Commerce Park Drive Unit L  
Phone: 705-722-4492 Fax: 705-722-3786  
Reports to be sent to:  
1. Email: Ryan.Abrams@gelder.com  
2. Email: Suzanne.Benamy@gelder.com

#### Project Information:

Project: 1403634  
Site Location: HecCarthy (Loto)  
Sampled By: RPA  
AGAT Quote #: 60738 PO: \_\_\_\_\_  
Please note: If quotation number is not provided, client will be billed full price for analysis

#### Invoice Information:

Company: Gelder Associates  
Contact: Pathy Chapple  
Address: 121 Commerce Park Drive Unit L Barrie  
Email: Patricia.Chapple@gelder.com

Bill To Same: Yes  No

#### Regulatory Requirements:

(Please check all applicable boxes)  
 Regulation 153/04  
 Sewer Use  
 Regulation 558  
 Table Indicate One  
 Ind/Com  
 Res/Park  
 Agriculture  
 Storm  
 Soil Texture (Check One)  
 Coarse  
 Fine  
 Region Indicate One  
 CCME  
 Prox. Water Quality Objectives (PWQO)  
 Other Indicate One

Is this submission for a Record of Site Condition?  
 Yes  No

Report Guideline on Certificate of Analysis  
 Yes  No

#### Sample Matrix Legend

B Biota  
GW Ground Water  
O Oil  
P Paint  
S Soil  
SD Sediment  
SW Surface Water

Field Filtered - Metals, Hg, CrVI  
(Please Circle)

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/Special Instructions	Y / N	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	Nutrients	Volatiles	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	
<u>pond</u>	<u>28-June</u>	<u>3:00PM</u>	<u>1</u>	<u>SW</u>																	

(Check Applicable)

x Rainbow + Daphnia Single C

#### Laboratory Use Only

Work Order #: \_\_\_\_\_  
Cooler Quantity: 1  
Arrival Temperatures: 8°C  
Custody Seal Intact:  Yes  No  N/A  
Notes: \_\_\_\_\_

#### Turnaround Time (TAT) Required:

Regular TAT  5 to 7 Business Days  
Rush TAT (Rush Surcharges Apply)  
 3 Business Days  2 Business Days  1 Business Day  
OR Date Required (Rush Surcharges May Apply): \_\_\_\_\_

Please provide prior notification for rush TAT  
\*TAT is exclusive of weekends and statutory holidays

Samples Requisitioned By (Print Name and Sign): Ryan Abrams Date: 28-June Time: \_\_\_\_\_

Samples Received By (Print Name and Sign): Sim Stn 00 Date: 10/6/14 Time: 10:14

Samples Requisitioned By (Print Name and Sign): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Samples Received By (Print Name and Sign): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Page 1 of 1

No: T 026181



CLIENT NAME: GOLDER ASSOCIATES LTD.  
121 COMMERCE PARK DRIVE, UNIT L  
BARRIE, ON L4N8X1  
(705) 722-4492

ATTENTION TO: Dawn Hoyle

PROJECT: 1407634

AGAT WORK ORDER: 16T099848

ECOTOX ANALYSIS REVIEWED BY: Virginie Bérubé, biologiste

DATE REPORTED: Jun 20, 2016

PAGES (INCLUDING COVER): 5

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 16T099848

PROJECT: 1407634

5835 COOPERS AVENUE  
 MISSISSAUGA, ONTARIO  
 CANADA L4Z 1Y2  
 TEL (905)712-5100  
 FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Dawn Hoyle

SAMPLING SITE: McCarthy (Brechin, ON)

SAMPLED BY: DEH/ RA

### Daphnia Lethality (D. magna) UC-48h

DATE RECEIVED: 2016-05-31

DATE REPORTED: 2016-06-20

SAMPLE DESCRIPTION:		POND	
SAMPLE TYPE:		Water	
DATE SAMPLED:		5/30/2016	
Parameter	Unit	G / S	RDL
Mortality 100% v/v	% mortality-48h		7594450
			0
Conclusion		NON LETHAL	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

7594450 Refer to the annex for analysis details.

Conclusion legend:

Non lethal: mortality: 10% or less

Acceptable: mortality: between 10% and 50%

Acute lethality: mortality: more than 50%

Certified By:





## Certificate of Analysis

AGAT WORK ORDER: 16T099848

PROJECT: 1407634

5835 COOPERS AVENUE  
 MISSISSAUGA, ONTARIO  
 CANADA L4Z 1Y2  
 TEL (905)712-5100  
 FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Dawn Hoyle

SAMPLING SITE: McCarthy (Brechin, ON)

SAMPLED BY: DEH/ RA

### Rainbow Trout Lethality (O. mykiss) UC-96h

DATE RECEIVED: 2016-05-31

DATE REPORTED: 2016-06-20

SAMPLE DESCRIPTION:		POND	
SAMPLE TYPE:		Water	
DATE SAMPLED:		5/30/2016	
Parameter	Unit	G / S	RDL
Mortality 100% v/v	% mortality-96h		7594450
			0
Conclusion		NON LETHAL	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

7594450 Refer to the annex for analysis details.

Conclusion legend:

Non lethal: mortality: 10% or less

Acceptable: mortality: between 10% and 50%

Acute lethality: mortality: more than 50%

Certified By:



## Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 16T099848

PROJECT: 1407634

ATTENTION TO: Dawn Hoyle

SAMPLING SITE:McCarthy (Brechin, ON)

SAMPLED BY:DEH/ RA

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
ECOTOX Analysis			
Mortality 100% v/v			NA
Conclusion			
Mortality 100% v/v	ECO-152-20000F	SPE1/RM/13	





CLIENT NAME: GOLDER ASSOCIATES LTD.  
121 COMMERCE PARK DRIVE, UNIT L  
BARRIE, ON L4N8X1  
(705) 722-4492

ATTENTION TO: Ryan Abrams

PROJECT: 1407634

AGAT WORK ORDER: 16T120717

ECOTOX ANALYSIS REVIEWED BY: Virginie Bérubé, biologiste

DATE REPORTED: Aug 05, 2016

PAGES (INCLUDING COVER): 5

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 16T120717

PROJECT: 1407634

5835 COOPERS AVENUE  
 MISSISSAUGA, ONTARIO  
 CANADA L4Z 1Y2  
 TEL (905)712-5100  
 FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: GOLDER ASSOCIATES LTD.

SAMPLING SITE:McCarthy - CoCo

ATTENTION TO: Ryan Abrams

SAMPLED BY:Ryan Abrams

### Daphnia Lethality (D. magna) UC-48h

DATE RECEIVED: 2016-07-28

DATE REPORTED: 2016-08-05

		SAMPLE DESCRIPTION:		Pond
		SAMPLE TYPE:		Water
		DATE SAMPLED:		7/27/2016
Parameter	Unit	G / S	RDL	7737199
Mortality 100% v/v	% mortality-48h			0
Acute Lethality				NO

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard  
 7737199 Refer to the annex for analysis details.  
 Conclusion legend:  
 Acute lethality: NO (mortality: 50% or less)  
 Acute lethality: YES (mortality: more than 50%)

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 16T120717

PROJECT: 1407634

5835 COOPERS AVENUE  
 MISSISSAUGA, ONTARIO  
 CANADA L4Z 1Y2  
 TEL (905)712-5100  
 FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: GOLDER ASSOCIATES LTD.

SAMPLING SITE:McCarthy - CoCo

ATTENTION TO: Ryan Abrams

SAMPLED BY:Ryan Abrams

### Rainbow Trout Lethality (O. mykiss) UC-96h

DATE RECEIVED: 2016-07-28

DATE REPORTED: 2016-08-05

SAMPLE DESCRIPTION:		Pond	
SAMPLE TYPE:		Water	
DATE SAMPLED:		7/27/2016	
Parameter	Unit	G / S	RDL
Mortality 100% v/v	% mortality-96h		7737199
			0
Acute Lethality			NO

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard  
 7737199 Refer to the annex for analysis details.  
 Conclusion legend:  
 Acute lethality: NO (mortality: 50% or less)  
 Acute lethality: YES (mortality: more than 50%)

Certified By:



## Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 16T120717

PROJECT: 1407634

ATTENTION TO: Ryan Abrams

SAMPLING SITE:McCarthy - CoCo

SAMPLED BY:Ryan Abrams

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
ECOTOX Analysis			
Mortality 100% v/v			NA
Acute Lethality			
Mortality 100% v/v	ECO-152-20000F	SPE1/RM/13	



As a global, employee-owned organisation with over 50 years of experience, Golder Associates is driven by our purpose to engineer earth's development while preserving earth's integrity. We deliver solutions that help our clients achieve their sustainable development goals by providing a wide range of independent consulting, design and construction services in our specialist areas of earth, environment and energy.

For more information, visit [golder.com](http://golder.com)

Africa	+ 27 11 254 4800
Asia	+ 86 21 6258 5522
Australasia	+ 61 3 8862 3500
Europe	+ 44 1628 851851
North America	+ 1 800 275 3281
South America	+ 56 2 2616 2000

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[www.golder.com](http://www.golder.com)

**Golder Associates Ltd.**  
**121 Commerce Park Drive, Unit L**  
**Barrie, Ontario, L4N 8X1**  
**Canada**  
**T: +1 (705) 722 4492**

