



November 2016

MCCARTHY QUARRY

Environmental Compliance Approval Quarterly Monitoring Report (August to November)

Submitted to:

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Barrie ON L4N 5R7

REPORT



Report Number: 1407634

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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 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 m³ 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 EFFLUENT MONITORING RESULTS

Weekly monitoring of the effluent 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 effluent 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 effluent 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. During the October semi-annual effluent monitoring, a sample was not able to be collected from SW2 because it was dry. Additionally, the monthly lethality samples were collected by Golder and sent to AGAT Laboratories Ltd.

There was no discharge from the McCarthy Pond on the weeks of August 1 to 5, 2016 and August 8 to 12, 2016 and therefore the weekly water quality sample was not collected.

4.0 EFFLUENT MONITORING RESULTS

Results of the weekly effluent monitoring are presented in Table 1; the monthly averages for the effluent 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 August to November 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 August and November, 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 August to November, 2016 are found in Table 5. The discharge rate between August and November, 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

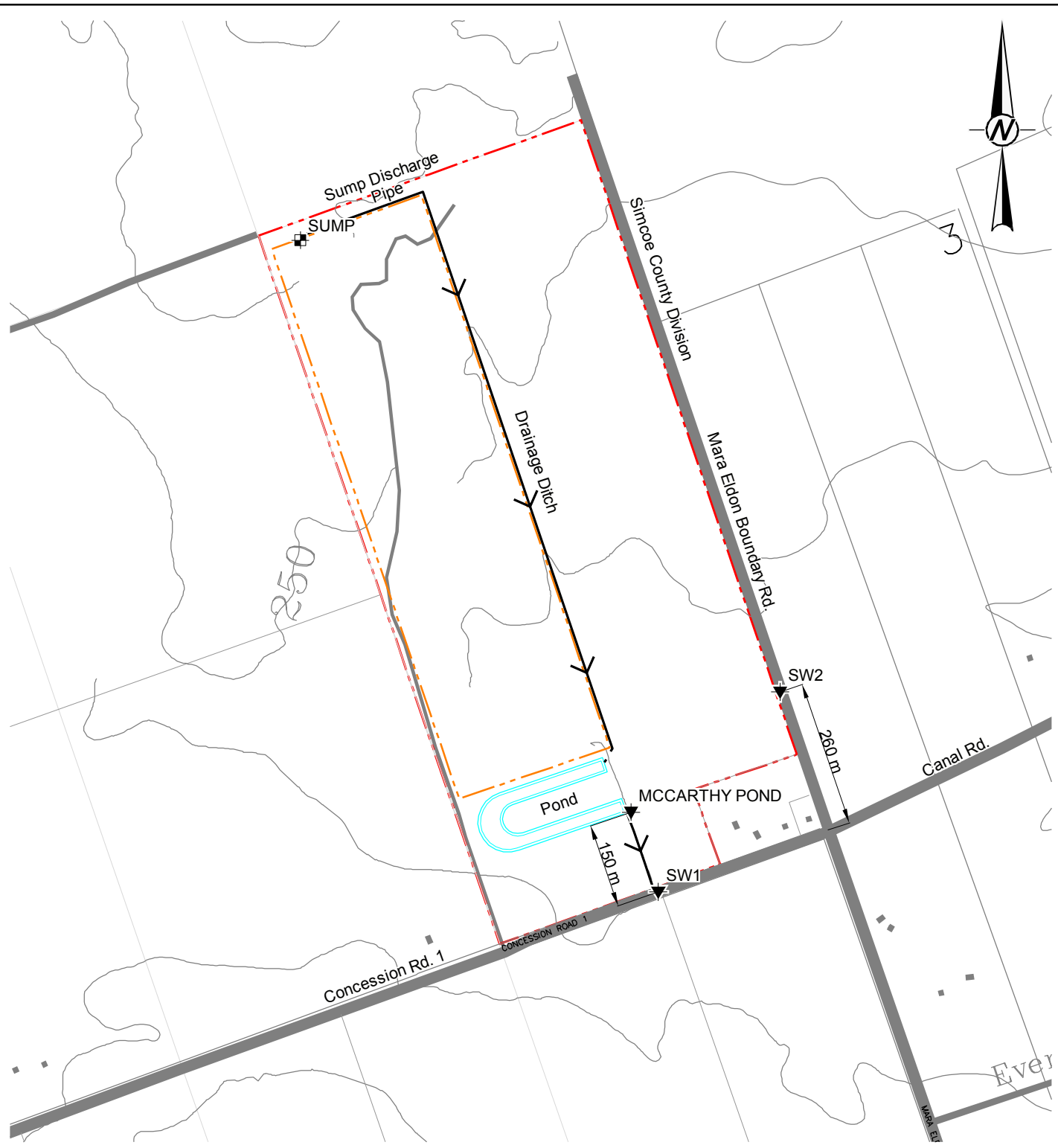
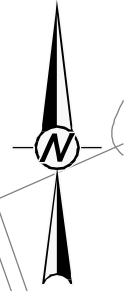
John Easton, M.Sc., P.Geo.
Associate Senior Hydrogeologist

JEB/JAE/plc

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FIGURE

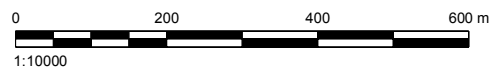


LEGEND

	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

Path: \\polder.gd\gait\barrie\CAD\Projects\2014\14-07634 (Barrie)_Coco Enviro and Hydro\0\ABA... | File Name: 1407634\SITE.dwg

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 (August to November 2016)

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Daily Concentration Limit ²	McCarthy Quarry										
					Pond										
Date					18-Aug-16	25-Aug-16	1-Sep-16	8-Sep-16	15-Sep-16	22-Sep-16	29-Sep-16	6-Oct-16	13-Oct-16	20-Oct-16	27-Oct-16
pH	pH	n/a		6.0-9.5	8.43	8.67	8.63	8.58	8.77	8.74	8.58	8.42	8.47	8.34	8.12
Total Suspended Solids	mg/L	1		30	15	9	10	11	10	10	7	7	4	8	6
Total Oil and Grease	mg/L	0.5	Note 3	30	1.6	1.2	1.8	0.8	<0.5	1.1	<0.5	1.7	<0.5	0.9	3.3
Phenols (4AAP)	mg/L	<0.0010		0.04	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<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 (August to November 2016)

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Monthly Concentration Limit ²	McCarthy Quarry		
					Pond		
Date					August	September	October
Total Suspended Solids	mg/L	1		15	8.55	8.66	8.34
Total Oil and Grease	mg/L	0.5	Note 3	15	1.4	0.9	1.6
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 (October 2016)

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Interim PWQO ²	PTTW Effluent Limits	McCarthy Quarry	
						Pond	SW1
Date						25-Oct-16	25-Oct-16
Field Measured Parameters							
Conductivity	mS/cm					2956	2350
pH	pH	n/a	6.5-8.5		6.0-9.5	8.31	8.71
Temperature	°C	n/a				5.5	8.1
Calculated Parameters							
Anion Sum	me/L	N/A				22.9	22.7
Cation Sum	me/L	N/A				23.7	23.8
Hardness (CaCO3)	mg/L	1.0				460	460
Inorganics							
Total Ammonia-N	mg/L	0.050				0.35	0.34
Conductivity	µS/cm	1.0				2430	2420
Total Dissolved Solids	mg/L	10				1460	1520
Fluoride (F-)	mg/L	0.10				0.90	0.85
Total Kjeldahl Nitrogen (TKN)	mg/L	0.10				0.73	0.60
Dissolved Organic Carbon	mg/L	0.20				6.4	6.3
pH	pH	N/A	6.5-8.5		6.0-9.5	7.98	7.86
Phenols-4AAP	mg/L	0.0010			0.04	<0.0010	<0.0010
Total Phosphorus	mg/L	0.020		0.02 ^{5b}		0.025	<0.02
Total Suspended Solids	mg/L	10			30	11	13
Dissolved Sulphate (SO4)	mg/L	1				390	390
Alkalinity (Total as CaCO3)	mg/L	1.0				88	87
Dissolved Chloride (Cl)	mg/L	1				460	450
Nitrite (N)	mg/L	0.010				0.107	0.103
Nitrate (N)	mg/L	0.10				1.71	1.61
Petroleum Hydrocarbons							
Total Oil & Grease	mg/L	0.50	Note 3		30	0.9	0.7
Metals							
Total Arsenic (As)	ug/L	1	100	5		<1.0	<1.0
Total Cadmium (Cd)	ug/L	0.1	0.2	0.1-0.5 ^{5d}		<0.10	<0.10
Total Calcium (Ca)	ug/L	200				84000	85000
Total Chromium (Cr)	ug/L	5	1-89 ^{5e}			<5.0	<5.0
Total Copper (Cu)	ug/L	1	5	1-5 ^{5f}		<1.0	<1.0
Total Iron (Fe)	ug/L	100	300			<100	<100
Total Lead (Pb)	ug/L	0.5	5-25 ^{5g}	1-5 ^{5h}		<0.50	<0.50
Total Magnesium (Mg)	ug/L	50				57000	58000
Total Manganese (Mn)	ug/L	2				3.2	6.8
Total Nickel (Ni)	ug/L	1	25			<1.0	1.0
Total Potassium (K)	ug/L	200				18000	18000
Total Sodium (Na)	ug/L	100				310000	310000
Total Zinc (Zn)	ug/L	5	30	20		<5.0	<5.0
<p>1. Provincial Water Quality Objectives (PWQO); shaded cells denote PWQO exceedance; some PWQOs are dependent on other water quality parameters hence the range in guideline values, refer to PWQO notes.</p> <p>2. Interim Provincial Water Quality Objectives (Interim PWQO); <i>shaded cells and italics denote Interim PWQO exceedance</i>; some PWQOs are dependent on other water quality parameters hence the range in guideline values, refer to PQWO notes.</p> <p>3. The PWQO for Oil and Grease indicates that oil or petrochemicals should not be present in concentrations that: can be detected as a visible film, sheen or discolouration on the surface, can be detected by odour, can cause tainting of edible organisms, can form detectable deposits on shorelines and bottom sediments.</p> <p>4. Results that are preceded by "<" denote concentrations that are below the laboratory Reportable Detection Limit (RDL).</p>							
<p><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 >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 >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 <75 mg/L (CaCO3), use 11 ug/L If Hardness >75 mg/L (CaCO3), use 1100 ug/L</p>							
<p><i>5d. Cadmium (Interim):</i> If Hardness 0-100 mg/L (CaCO3), then use 0.1 ug/L If Hardness >100 mg/L (CaCO3), then use 0.5 ug/L</p>							
<p><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 CaCO3 (mg/L) is 0 - 20, then use 1 ug/L If Hardness as CaCO3 (mg/L) is >20, then use 5 ug/L</p>							
<p><i>5g. Lead:</i> If Alkalinity as CaCO3 (mg/L) is < 20, use 5 ug/L If Alkalinity as CaCO3 (mg/L) is 20 to 40, use 10 ug/L If Alkalinity as CaCO3 (mg/L) is 40 to 80, use 20 ug/L If Alkalinity as CaCO3 (mg/L) is > 80, use 25 ug/L</p>							
<p><i>5h. Lead (Interim):</i> If Hardness as CaCO3 (mg/L) is < 30, then use 1 ug/L If Hardness as CaCO3 (mg/L) is 30 to 80, then use 3 ug/L If Hardness as CaCO3 (mg/L) is > 80, then use 5 ug/L</p>							

Table 4: Lethality Monitoring at McCarthy Pond

	Unit	Mortality Limit	McCarthy Quarry		
Sample ID			Pond		
Date			18-Aug-16	28-Sep-16	25-Oct-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)
ECA Permitted Rate					6,550,000	76	4,545
1-Aug-16	NO PUMP		0	0	-	-	-
2-Aug-16	NO PUMP		0	0	-	-	-
3-Aug-16	NO PUMP		0	0	-	-	-
4-Aug-16	NO PUMP		0	0	-	-	-
5-Aug-16	NO PUMP		0	0	-	-	-
6-Aug-16	7AM	1PM	21,600	360	756,000	35	2,100
7-Aug-16	NO PUMP		0	0	-	-	-
8-Aug-16	7AM	1PM	21,600	360	756,000	35	2,100
9-Aug-16	NO PUMP		0	0	-	-	-
10-Aug-16	NO PUMP		0	0	-	-	-
11-Aug-16	NO PUMP		0	0	-	-	-
12-Aug-16	7AM	12PM	18,000	300	630,000	35	2,100
13-Aug-16	NO PUMP		0	0	-	-	-
14-Aug-16	NO PUMP		0	0	-	-	-
15-Aug-16	NO PUMP		0	0	-	-	-
16-Aug-16	NO PUMP		0	0	-	-	-
17-Aug-16	NO PUMP		0	0	-	-	-
18-Aug-16	NO PUMP		0	0	-	-	-
19-Aug-16	NO PUMP		0	0	-	-	-
20-Aug-16	NO PUMP		0	0	-	-	-
21-Aug-16	NO PUMP		0	0	-	-	-
22-Aug-16	NO PUMP		0	0	-	-	-
23-Aug-16	NO PUMP		0	0	-	-	-
24-Aug-16	NO PUMP		0	0	-	-	-
25-Aug-16	NO PUMP		0	0	-	-	-
26-Aug-16	NO PUMP		0	0	-	-	-
27-Aug-16	NO PUMP		0	0	-	-	-
28-Aug-16	NO PUMP		0	0	-	-	-
29-Aug-16	NO PUMP		0	0	-	-	-
30-Aug-16	NO PUMP		0	0	-	-	-
31-Aug-16	NO PUMP		0	0	-	-	-
1-Sep-16	NO PUMP		0	0	-	-	-
2-Sep-16	NO PUMP		0	0	-	-	-
3-Sep-16	NO PUMP		0	0	-	-	-
4-Sep-16	NO PUMP		0	0	-	-	-
5-Sep-16	NO PUMP		0	0	-	-	-
6-Sep-16	NO PUMP		0	0	-	-	-
7-Sep-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)
ECA Permitted Rate					6,550,000	76	4,545
8-Sep-16	NO PUMP		0	0	-	-	-
9-Sep-16	NO PUMP		0	0	-	-	-
10-Sep-16	NO PUMP		0	0	-	-	-
11-Sep-16	NO PUMP		0	0	-	-	-
12-Sep-16	NO PUMP		0	0	-	-	-
13-Sep-16	NO PUMP		0	0	-	-	-
14-Sep-16	NO PUMP		0	0	-	-	-
15-Sep-16	NO PUMP		0	0	-	-	-
16-Sep-16	NO PUMP		0	0	-	-	-
17-Sep-16	NO PUMP		0	0	-	-	-
18-Sep-16	NO PUMP		0	0	-	-	-
19-Sep-16	NO PUMP		0	0	-	-	-
20-Sep-16	NO PUMP		0	0	-	-	-
21-Sep-16	NO PUMP		0	0	-	-	-
22-Sep-16	NO PUMP		0	0	-	-	-
23-Sep-16	NO PUMP		0	0	-	-	-
24-Sep-16	NO PUMP		0	0	-	-	-
25-Sep-16	NO PUMP		0	0	-	-	-
26-Sep-16	NO PUMP		0	0	-	-	-
27-Sep-16	NO PUMP		0	0	-	-	-
28-Sep-16	NO PUMP		0	0	-	-	-
29-Sep-16	NO PUMP		0	0	-	-	-
30-Sep-16	NO PUMP		0	0	-	-	-
1-Oct-16	NO PUMP		0	0	-	-	-
2-Oct-16	NO PUMP		0	0	-	-	-
3-Oct-16	NO PUMP		0	0	-	-	-
4-Oct-16	NO PUMP		0	0	-	-	-
5-Oct-16	12PM	3PM	10,800	180	378,000	35	2,100
6-Oct-16	6AM	9:30AM	12,600	210	441,000	35	2,100
7-Oct-16	NO PUMP		0	0	-	-	-
8-Oct-16	NO PUMP		0	0	-	-	-
9-Oct-16	NO PUMP		0	0	-	-	-
10-Oct-16	NO PUMP		0	0	-	-	-
11-Oct-16	NO PUMP		0	0	-	-	-
12-Oct-16	11:15AM	3:15PM	14,400	240	504,000	35	2,100
13-Oct-16	11:30AM	4PM	16,200	270	567,000	35	2,100
14-Oct-16	7AM	11AM	14,400	240	504,000	35	2,100

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)
ECA Permitted Rate					6,550,000	76	4,545
15-Oct-16	NO PUMP		0	0	-	-	-
16-Oct-16	NO PUMP		0	0	-	-	-
17-Oct-16	8AM	3PM	25,200	420	882,000	35	2,100
18-Oct-16	6AM	1PM	25,200	420	882,000	35	2,100
19-Oct-16	NO PUMP		0	0	-	-	-
20-Oct-16	6AM	1PM	25,200	420	882,000	35	2,100
21-Oct-16	NO PUMP		0	0	-	-	-
22-Oct-16	7AM	1PM	21,600	360	756,000	35	2,100
23-Oct-16	NO PUMP		0	0	-	-	-
24-Oct-16	NO PUMP		0	0	-	-	-
25-Oct-16	6AM	3PM	32,400	540	1,134,000	35	2,100
26-Oct-16	NO PUMP		0	0	-	-	-
27-Oct-16	6AM	12PM	21,600	360	756,000	35	2,100
28-Oct-16	NO PUMP		0	0	-	-	-
29-Oct-16	NO PUMP		0	0	-	-	-
30-Oct-16	NO PUMP		0	0	-	-	-
31-Oct-16	6AM	10:30AM	16,200	270	567,000	35	2,100



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* .

Effluent Parameter	Daily Concentration Limit (mg/L)	Monthly Average Concentration Limit (mg/L)
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:

Effluent Parameter	Frequency	Sample Type
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 ₃), Alkalinity(as CaCO ₃), Conductivity, pH, Fluoride, Chloride, Nitrate (N), Nitrite (N), Sulphate, Calcium, Magnesium, Sodium, Potassium, Ammonia (N), Dissolved Organic Carbon, Iron, Total Kjeldahl Nitrogen, Phosphorus (Total), Cadmium, Chromium, Manganese, Anion (Sum), Cation (Sum) and Total Dissolved Solids

- (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

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#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 567524-01-01

Attention:Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/08/24
 Report #: R4129585
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6H6108
Received: 2016/08/19, 08:50

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/08/24	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/08/24	2016/08/24	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/08/24	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/08/22	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/08/24	2016/08/24	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/08/22	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

Maxxam ID		CXL217	CXL217		
Sampling Date		2016/08/18 11:30	2016/08/18 11:30		
COC Number		567524-01-01	567524-01-01		
	UNITS	POND	POND Lab-Dup	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	1.6		0.50	4626710
Inorganics					
pH	pH	8.43	8.47		4631064
Phenols-4AAP	mg/L	ND	ND	0.0010	4628868
Total Suspended Solids	mg/L	15	15	1	4629796
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	1.6		0.50	4632385
Total Oil & Grease Mineral/Synthetic	mg/L	ND		0.50	4632386
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	22.0°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
4628868	Phenols-4AAP	2016/08/22	102	80 - 120	101	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4629796	Total Suspended Solids	2016/08/22					ND,RDL=1	mg/L	2.7	25	97	85 - 115
4631064	pH	2016/08/24			102	98 - 103			0.42	N/A		
4632385	Total Oil & Grease	2016/08/24			94	85 - 115	ND, RDL=0.50	mg/L	2.1	25		
4632386	Total Oil & Grease Mineral/Synthetic	2016/08/24			94	85 - 115	ND, RDL=0.50	mg/L	1.6	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

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
IMMEDIATE TEST

Maxxam Analytics International Corporation o/a Maxxam Analytics
 5740 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

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #26238 Coco Paving Inc	Company Name: #17930 Golder Associates Ltd	Quotation #: B47292	Maxxam Job #:	Bottle Order #:	567524		
Attention: Teresa Cronk	Attention: Dawn Hoyle/Jamie Bonany	P.O. #:	COC #:	Project Manager:	Antonella Brasil		
Address: 949 Wilson Ave	Address: 121 Commerce Park Drive Unit L	Project: 1407634	COC #:		Antonella Brasil		
Tel: (416) 633-9670	Tel: (705) 722-4492	Project Name: MCCARTHY	COC #:		Antonella Brasil		
Email: TCronk@cocogroup.com	Email: Dawn_Hoyle@golder.com; Jamie_Bonany@golder.com	Site #:	COC #:		Antonella Brasil		
		Sampled By: DARYL LAUDRY	COC #:		Antonella Brasil		

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	Low Level Total Suspended Solids	Oil & Greases - AV/MT	Phenols (MAAP)	pH												
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CGME	<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	Other _____																			
Include Criteria on Certificate of Analysis (Y/N)?																							
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix																			
1 567524	POND	AUG. 15th	11:30 AM	slw	✓	✓	✓	✓	✓														
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Regular (Standard) TAT:
 (will be applied if Rush TAT is not specified)
 Standard TAT = 5-7 Working days for most tests

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

of Bottles: _____
 Comments: _____

19-Aug-16 08:50
 Antonella Brasil
 B6H6108
 KP7 ENV-959

* 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		16/08/18	11:30 AM	Tanjvir Singh TANVIR SINGH		20/08/18	08:50		Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
Jodi Pascoe		16/08/18	11:30 AM			20/08/19				23/21/22	Present	✓	
* 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													

notice

Your Project #: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 567525-01-01

Attention:Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/09/01
 Report #: R4151031
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6I2275
Received: 2016/08/26, 10:00

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/09/01	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/08/31	2016/08/31	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/08/29	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/08/29	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/08/31	2016/08/31	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/08/29	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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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		CY0954	CY0954		
Sampling Date		2016/08/25 14:00	2016/08/25 14:00		
COC Number		567525-01-01	567525-01-01		
	UNITS	567525-POND	567525-POND Lab-Dup	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	1.2		0.50	4636499
Inorganics					
pH	pH	8.67			4638947
Phenols-4AAP	mg/L	ND		0.0010	4639198
Total Suspended Solids	mg/L	9	9	1	4636479
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	1.2		0.50	4642649
Total Oil & Grease Mineral/Synthetic	mg/L	ND		0.50	4642663
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	22.0°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
4636479	Total Suspended Solids	2016/08/29					ND,RDL=1	mg/L	0	25	97	85 - 115
4638947	pH	2016/08/29			102	98 - 103			0.49	N/A		
4639198	Phenols-4AAP	2016/08/29	98	80 - 120	98	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4642649	Total Oil & Grease	2016/08/31			99	85 - 115	ND, RDL=0.50	mg/L	1.8	25		
4642663	Total Oil & Grease Mineral/Synthetic	2016/08/31			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).

Cristina Carriere

Cristina Carriere, Scientific Services

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.

INVOICE TO: 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		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 Fax: _____ Email: Dawn_Hoyle@golder.com; Jamie_Bonany@golder.com		PROJECT INFORMATION: Quotation #: B47292 P.O. #: _____ Project: 1407634 Project Name: MCCARTHY Site #: _____ Sampled By: DARYL LANDRY		Laboratory Use Only: Maxxam Job #: _____ Bottle Order #: _____ COC #: _____ Project Manager: Antonella Brasil	
---	--	--	--	--	--	--	--

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 - AM/MT	Phenols (AAP)	pH									Regular (Standard) TAT: <small>(will be applied if Rush TAT is not specified)</small> Standard TAT = 5-7 Working days for most tests. <small>Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.</small>	
Table 1	Res/Park	Medium/Fine	CCME	Sanitary Sewer Bylaw																			
Table 2	Ind/Comm	Coarse	Reg 558	Storm Sewer Bylaw																			
Table 3	Agri/Other	For RSC	MISA	Municipality																			
Table			PWQO																				
Include Criteria on Certificate of Analysis (Y/N)?																						Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: _____ Rush Confirmation Number: _____ (call lab for #)	
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix																	# of Bottles	Comments	
567525	POND	AUG 25th	2:00 PM	Slw	✓	✓	✓	✓	✓														

26-Aug-16 10:00
 Antonella Brasil
 B612275
 SD3 ENV-1220

* RELINQUISHED BY: (Signature/Print) Jodi Pascoe Jodi Pascoe		Date: (YY/MM/DD) 16/08/25	Time 2:00 AM	RECEIVED BY: (Signature/Print) KHUSHKARAN KHUSHKARAN KAUR		Date: (YY/MM/DD) 2016/08/26	Time 10:00	# jars used and not submitted	Laboratory Use Only			Custody Seal		
								Time Sensitive	Temperature (°C) on Receipt 22/22/22 °C	Present	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

Maxxam Analytics International Corporation o/a Maxxam Analytics PU: - 330824532197 No ice

Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 567526-01-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/09/09
 Report #: R4161747
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6I8402
Received: 2016/09/02, 09:45

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/09/09	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/09/08	2016/09/08	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/09/07	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/09/07	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/09/08	2016/09/08	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/09/08	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

Maxxam ID		CZT423		
Sampling Date		2016/09/01 13:00		
COC Number		567526-01-01		
	UNITS	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	1.8	0.50	4648236
Inorganics				
pH	pH	8.63		4649568
Phenols-4AAP	mg/L	ND	0.0010	4649612
Total Suspended Solids	mg/L	10	1	4652039
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	1.8	0.50	4652278
Total Oil & Grease Mineral/Synthetic	mg/L	ND	0.50	4652284
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	20.3°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
4649568	pH	2016/09/07			102	98 - 103			0.23	N/A		
4649612	Phenols-4AAP	2016/09/07	100	80 - 120	101	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4652039	Total Suspended Solids	2016/09/08					ND,RDL=1	mg/L	NC	25	98	85 - 115
4652278	Total Oil & Grease	2016/09/08			98	85 - 115	ND, RDL=0.50	mg/L	3.1	25		
4652284	Total Oil & Grease Mineral/Synthetic	2016/09/08			96	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).

Cristina Carriere



Cristina Carriere, Scientific Services

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IMMEDIATE TEST

Maxxam Analytics International Corporation o/a Maxxam Analytics
 6740 Campbellville 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

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name	#26238 Coco Paving Inc	Company Name	#17930 Golder Associates Ltd	Quotation #	B47292	Maxxam Job #:	Bottle Order #:
Attention:	Teresa Cronk	Attention:	Dawn Hoyle/Jamie Bonary	P.O. #			
Address:	949 Wilson Ave Toronto ON M3K 1G2	Address:	121 Commerce Park Drive Unit L Barrie ON L4N 8X1	Project:	1407634	COC #:	Project Manager:
Tel:	(416) 633-9670	Tel:	(705) 722-4492	Project Name:	MCCARTHY		Antonella Brasil
Email:	TCronk@cocogroup.com	Email:	Dawn_Hoyle@golder.com/Jamie_Bonary@golder.com	Site #		C#567526-01-01	
				Sampled By:	DARYL LANDRY		

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	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (dAAP)	pH								Regular (Standard) TAT:	
<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"/> PWOO																			
Include Criteria on Certificate of Analysis (Y/N)? _____																		Job Specific Rush TAT (if applies to entire submission)				
																		Date Required: _____ Time Required: _____				
																		Rush Confirmation Number: _____ (call lab for #)				
																		# of Bottles: _____ Comments: _____				
1	567526	POND	SEPT. 15	1:00 PM	slw	✓	✓	✓	✓	✓												
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

02-Sep-16 09:45
 Antonella Brasil

 B618402
 TSP ENV-1144

* 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		16/09/16	1:00 PM	DARYL LANDRY		16/09/16	09:45		Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
Daryl Landry		16/09/16	1:00 PM							21/20/20	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 Location: MCCARTHY
 Your C.O.C. #: 573853-01-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/09/15
 Report #: R4169115
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6J3258

Received: 2016/09/09, 11:22

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/09/14	CAM SOP-00326	EPA1664B m, SM5520B m
Total Oil and Grease	1	2016/09/13	2016/09/13	CAM SOP-00326	EPA1664B m, SM5520A m
pH	1	N/A	2016/09/13	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/09/12	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/09/13	2016/09/13	CAM SOP-00326	EPA1664B m, SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/09/12	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.

Ema Gitej, Senior Project Manager

Email: EGitej@maxxam.ca

Phone# (905)817-5829

=====

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RESULTS OF ANALYSES OF WATER

Maxxam ID		DAS916		
Sampling Date		2016/09/08 12:30		
COC Number		573853-01-01		
	UNITS	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	0.80	0.50	4653676
Inorganics				
pH	pH	8.58		4656782
Phenols-4AAP	mg/L	ND	0.0010	4655702
Total Suspended Solids	mg/L	11	1	4655571
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	0.80	0.50	4658172
Total Oil & Grease Mineral/Synthetic	mg/L	ND	0.50	4658193
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	11.7°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
4655571	Total Suspended Solids	2016/09/12					ND,RDL=1	mg/L	NC	25	98	85 - 115
4655702	Phenols-4AAP	2016/09/12	97	80 - 120	97	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4656782	pH	2016/09/13			102	98 - 103			0.057	N/A		
4658172	Total Oil & Grease	2016/09/13			94	85 - 115	ND, RDL=0.50	mg/L	3.2	25		
4658193	Total Oil & Grease Mineral/Synthetic	2016/09/13			96	85 - 115	ND, RDL=0.50	mg/L	1.0	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

Cristina Carriere, Scientific Services


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IMMEDIATE TEST
Maxxam
A Maxxam Analytics International Corporation

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

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #26238 Coco Paving Inc	Company Name: #17930 Golder Associates Ltd	Quotation #: B47292	Maxxam Job #:	Attention: Teresa Cronk	Attention: Dawn Hoyle/Jamie Bonany	P.O. #: 1407634	Bottle Order #:
Address: 949 Wilson Ave	Address: 121 Commerce Park Drive Unit L	Project Name: MCCARTHY	Project Manager:	Address: Toronto ON M3K 1G2	Address: Barrie ON L4N 8X1	Project Name: MCCARTHY	Barcode: 573853
Tel: (416) 633-9670	Tel: (705) 722-4492	Site #: MCCARTHY	Project Manager: Ema Gitej	Fax: _____	Fax: _____	Sampled By: ROB TOOLE	Barcode: C#573853-01-01
Email: TCronk@cocogroup.com	Email: Dawn_Hoyle@golder.com; Jamie_Bonany@golder.com	Sampled By: ROB TOOLE					

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) <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 _____			Other Regulations <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"/> PWQO <input type="checkbox"/> Other _____			Special Instructions 			ANALYSIS REQUESTED (PLEASE BE SPECIFIC) 09-Sep-16 11:22 Ema Gitej  B6J3258 SEL ENV-413					Regular (Standard) TAT: <small>(will be applied if Rush TAT is not specified)</small> Standard TAT = 5-7 Working days for most tests Please note: Standard TAT for certain tests such as BOD and Clostridia/Furans are > 5 days - contact your Project Manager for details.	
Include Criteria on Certificate of Analysis (Y/N)?						Field Filtered (please circle): Metals / Hg / CrVI		Low Level Total Suspended Solids		Oil & Grease - AV/MT		Phosphorus (HMAP)		Turbidity	
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered	Low Level	Oil & Grease	Phosphorus	Turbidity	# of Bottles	Comments				
573853	POND	SEPT. 8 2016	12:30 PM	slw	✓	✓	✓	✓	✓						
	POND														

* 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		16/09/08	12:30 PM	PARAMJEET SINGH		2016/09/09	11:22		Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
Jodi Pascoe		16/09/08	12:30 PM							10/11/14	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#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 571437-01-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/09/23
 Report #: R4177871
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6J8980

Received: 2016/09/16, 09:33

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/09/20	CAM SOP-00326	EPA1664B m, SM5520B m
Total Oil and Grease	1	2016/09/20	2016/09/20	CAM SOP-00326	EPA1664B m, SM5520A m
pH	1	N/A	2016/09/19	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/09/22	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/09/20	2016/09/20	CAM SOP-00326	EPA1664B m, SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/09/20	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		DBU872	DBU872		
Sampling Date		2016/09/15 13:45	2016/09/15 13:45		
COC Number		571437-01-01	571437-01-01		
	UNITS	POND	POND Lab-Dup	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	ND		0.50	4663513
Inorganics					
pH	pH	8.77			4666510
Phenols-4AAP	mg/L	ND		0.0010	4665363
Total Suspended Solids	mg/L	10	11	1	4666202
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	ND		0.50	4668205
Total Oil & Grease Mineral/Synthetic	mg/L	ND		0.50	4668231
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	6.7°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
4665363	Phenols-4AAP	2016/09/22	99	80 - 120	99	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4666202	Total Suspended Solids	2016/09/20					ND,RDL=1	mg/L	9.7	25	95	85 - 115
4666510	pH	2016/09/19			101	98 - 103			0.45	N/A		
4668205	Total Oil & Grease	2016/09/20			98	85 - 115	ND, RDL=0.50	mg/L	1.0	25		
4668231	Total Oil & Grease Mineral/Synthetic	2016/09/20			96	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).

Cristina Carriere

Cristina Carriere, Scientific Services

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INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #26238 Coco Paving Inc	Company Name: Dawn Hoyle/Jamie Bonany	Quotation #: B47292	Maxxam Job #:	Bottle Order #:	571437		
Attention: Teresa Cronk	Attention: Dawn Hoyle/Jamie Bonany	P.O. #:	Project: 1407634 - McCarthy		COC #:		Project Manager:
Address: 949 Wilson Ave Toronto ON M3K 1G2	Address:	Project Name: McCarthy	Site #:		Antonella Brasil		
Tel: (416) 633-9670	Tel:	Sampled By: ROB TOOLE	Barcode: C9571437-01-01				
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					ANALYSIS REQUESTED (PLEASE BE SPECIFIC)					Turnaround Time (TAT) Required:	
Regulation 153 (2011)			Other Regulations		Field Filtered (please circle):					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	Metals / Hg / Cr / V	Oil & Grease - AV/MT	Low Level Total Suspended Solids	Phenols (dAAP)	pH	Regular (Standard) TAT:	
<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						(will be applied if Rush TAT is not specified)	
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality: _____	Special Instructions		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 _____			<input type="checkbox"/> PWOO	<input type="checkbox"/> Other _____			Job Specific Rush TAT (if applies to entire submission)		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						# of Bottles	Comments
1 571437	POND	Sept. 15th	1:45 pm	Slw	✓	✓	✓	✓	✓		
2	POND										
3											
4											
5											
6											
7											
8											
9											
10											

16-Sep-16 09:33
 Antonella Brasil

 B6J8980
 RK6 ENV-595

* 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		16/09/15		Antonella Brasil		2016/09/16	09:33		Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
Jodi Pascoe		16/09/15		Antonella Brasil						4/2/9	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 - McCarthy
 Site#: MCCARTHY
 Site Location: MCCARTHY
 Your C.O.C. #: 571437-02-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/09/28
 Report #: R4183228
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6K5010
Received: 2016/09/23, 11:03

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/09/27	CAM SOP-00326	EPA1664B m, SM5520B m
Total Oil and Grease	1	2016/09/27	2016/09/27	CAM SOP-00326	EPA1664B m, SM5520A m
pH	1	N/A	2016/09/26	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/09/28	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/09/27	2016/09/27	CAM SOP-00326	EPA1664B m, SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/09/24	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.

(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

Maxxam ID		DCW726		
Sampling Date		2016/09/22 14:30		
COC Number		571437-02-01		
	UNITS	561479 POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	1.1	0.50	4673564
Inorganics				
pH	pH	8.74		4676432
Phenols-4AAP	mg/L	0.0010	0.0010	4675477
Total Suspended Solids	mg/L	10	1	4675366
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	1.1	0.50	4677705
Total Oil & Grease Mineral/Synthetic	mg/L	ND	0.50	4677708
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	5.3°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
4675366	Total Suspended Solids	2016/09/24					ND,RDL=1	mg/L	0	25	100	85 - 115
4675477	Phenols-4AAP	2016/09/28	90	80 - 120	99	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4676432	pH	2016/09/26			102	98 - 103			0.49	N/A		
4677705	Total Oil & Grease	2016/09/27			95	85 - 115	ND, RDL=0.50	mg/L	2.9	25		
4677708	Total Oil & Grease Mineral/Synthetic	2016/09/27			92	85 - 115	ND, RDL=0.50	mg/L	1.6	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).

Cristina Carriere

Cristina Carriere, Scientific Services

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IMMEDIATE TEST
Maxxam
 A Maxxam Group Company

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

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #26238 Coco Paving Inc	Attention: Teresa Cronk	Company Name: Dawn Hoyle/Jamie Bonany	Attention: Dawn Hoyle/Jamie Bonany	Quotation #: B47292	P.O. #: 1407634 - McCarthy	Maxxam Job #:	Bottle Order #:
Address: 949 Wilson Ave Toronto ON M3K 1G2	Tel: (416) 633-9670 Fax: _____	Address: _____	Tel: _____ Fax: _____	Project Name: McCarthy	Site #: _____	COC #:	Project Manager:
Email: TCronk@cocogroup.com	Email: Dawn_Hoyle@golder.com, Jamie_Bonany@golder.com			Sampled By: <u>Rob Dore</u>	 C8571437-02-01 Antonella Brasil		

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	Oil & Grease - AV/MT	Low Level Total Suspended Solids	Phenols (AAP)	pH	Regular (Standard) TAT: <small>(will be applied if Rush TAT is not specified)</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							<input type="checkbox"/> Standard TAT = 5-7 Working days for most tests	<input type="checkbox"/>
<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"/>	
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality: _____							<input type="checkbox"/>	
<input type="checkbox"/> Table _____			<input type="checkbox"/> PW/QO								<input type="checkbox"/>	
Include Criteria on Certificate of Analysis (Y/N)? _____											<input type="checkbox"/>	
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix								
361479	POND	SEPT. 22ND	2:30 PM	Slw	✓	✓	✓	✓	✓			

23-Sep-16 11:03
 Antonella Brasil

 B6K5010
 GK1 ENV-1137

* 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		
<u>Joni Pascoe</u>		16/09/22	2:30 PM	<u>PARAMJEET SINGH</u>	2016/09/23	11:03		Time Sensitive	Temperature (°C) on Receipt	Custody Seal
<u>Joni Pascoe</u>		16/09/22	2:30 PM						4/6/6	Present
										Intact
										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. SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam Yellow: Client

Your Project #: 1407634 - MCCARTHY
 Site#: MCCARTHY
 Site Location: MCCARTHY
 Your C.O.C. #: 561479-02-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/10/06
 Report #: R4192581
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6L0969

Received: 2016/09/30, 10:16

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/10/06	CAM SOP-00326	EPA1664B m, SM5520B m
Total Oil and Grease	1	2016/10/05	2016/10/05	CAM SOP-00326	EPA1664B m, SM5520A m
pH	1	N/A	2016/10/03	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/10/03	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/10/05	2016/10/06	CAM SOP-00326	EPA1664B m, SM5520F m
Low Level Total Suspended Solids	1	N/A	2016/10/04	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

Maxxam ID			DEA553		
Sampling Date			2016/09/29 14:30		
COC Number			561479-02-01		
	UNITS	Criteria	561479- POND	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	-	ND	0.50	4683446
Inorganics					
pH	pH	6.5:8.5	8.58		4685919
Phenols-4AAP	mg/L	0.001	ND	0.0010	4685179
Total Suspended Solids	mg/L	-	7	1	4685178
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	-	ND	0.50	4689555
Total Oil & Grease Mineral/Synthetic	mg/L	0.5	ND	0.50	4689557
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	17.7°C
-----------	--------

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
4685178	Total Suspended Solids	2016/10/04					ND,RDL=1	mg/L	NC	25	100	85 - 115
4685179	Phenols-4AAP	2016/10/03	99	80 - 120	100	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4685919	pH	2016/10/03			102	98 - 103			0.10	N/A		
4689555	Total Oil & Grease	2016/10/05			94	85 - 115	ND, RDL=0.50	mg/L	1.3	25		
4689557	Total Oil & Grease Mineral/Synthetic	2016/10/06			92	85 - 115	ND, RDL=0.50	mg/L	1.6	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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INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #26238 Coco Paving Inc		Company Name:		Quotation #: B47292		Maxxam Job #:	
Attention: Teresa Cronk		Attention: Dawn Hoyle/Jamie Bonary		P.O. #:		Bottle Order #:	
Address: 949 Wilson Ave		Address:		Project: 1407634 - McCarthy		581479	
Toronto ON M3K 1G2				Site #:		COC #:	
Tel: (416) 633-9670 Fax:		Tel: Fax:		Project Name: McCarthy		Project Manager:	
Email: TCronk@cocogroup.com		Email: Dawn_Hoyle@golder.com; Jamie_Bonary@golder.com		Sampled By: Daryl Landry		Antonella Brasil	

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 / I	Oil & Grease - A/V/M/T	Low Level Total Suspended Solids	Phenols (40AP)	pH	pH	pH	pH	pH	pH	pH	pH	pH	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.	
Include Criteria on Certificate of Analysis (Y/N)?																		Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: _____ Rush Confirmation Number: _____ (call lab for #)	
<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 checked="" type="checkbox"/>	
<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 checked="" type="checkbox"/> PWQO (SW)																
			<input type="checkbox"/> Other																
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix															
1 561479	POND			SW	-	X	X	X	X	X								5	
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

30-Sep-16 10:16
Antonella Brasil
B6L0969
HGR ENV-809

* 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		16/09/26	3:00pm	Harwin Grewal	2016/09/30	10:16		Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
Teresa Cronk		16/09/26	3:00pm						19/10/17 NO REC	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#: MCCARTHY
 Site Location: MCCARTHY
 Your C.O.C. #: 577938-03-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/10/14
 Report #: R4208181
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6L6965
Received: 2016/10/07, 10:41

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/10/13	CAM SOP-00326	EPA1664B m, SM5520B m
Total Oil and Grease	1	2016/10/13	2016/10/13	CAM SOP-00326	EPA1664B m, SM5520A m
pH	1	N/A	2016/10/12	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/10/14	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/10/13	2016/10/13	CAM SOP-00326	EPA1664B m, SM5520F m
Low Level Total Suspended Solids	1	2016/10/08	2016/10/13	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		DFC783		
Sampling Date		2016/10/06 13:30		
COC Number		577938-03-01		
	UNITS	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	1.7	0.50	4693598
Inorganics				
pH	pH	8.42		4696391
Phenols-4AAP	mg/L	ND	0.0010	4694841
Total Suspended Solids	mg/L	7	1	4694858
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	1.7	0.50	4699563
Total Oil & Grease Mineral/Synthetic	mg/L	ND	0.50	4699565
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	6.7°C
-----------	-------

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
4694841	Phenols-4AAP	2016/10/14	NC	80 - 120	98	85 - 115	ND, RDL=0.0010	mg/L	0.38	20		
4694858	Total Suspended Solids	2016/10/13					ND,RDL=1	mg/L	9.8	25	99	85 - 115
4696391	pH	2016/10/12			101	98 - 103			0.20	N/A		
4699563	Total Oil & Grease	2016/10/13			97	85 - 115	ND, RDL=0.50	mg/L	2.6	25		
4699565	Total Oil & Grease Mineral/Synthetic	2016/10/13			94	85 - 115	ND, RDL=0.50	mg/L	2.1	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 (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).

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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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

INVOICE TO: **IMMEDIATE TEST**

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

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		Field Filtered (please circle):		Metals / Hg / Cr / VI		Low Level Total Suspended Solids		Oil & Grease - AV/MT		Phenols (HAAP)		pH		Regular (Standard) TAT:		
<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	Special Instructions	Metals / Hg / Cr / VI	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (HAAP)	pH	Please provide advance notice for rush projects		<input type="checkbox"/>		Regular (Standard) TAT:		(will be applied if Rush TAT is not specified)		
<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							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 #)
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality: _____															
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07-Oct-16 10:41
 Antonella Brasil

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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	16/07/06	1:30 AM	SHRUTI PATEL	2016 10/07	10:41		Time Sensitive	Temperature (°C) on Receipt	Custody Seal
JODI PASCOE	16/07/06	1:30 AM						815/7	Present
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									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. SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam Yellow: Client

Your Project #: 1407634
 Site#: MCCARTHY
 Site Location: MCCARTHY
 Your C.O.C. #: 577938-01-01

Attention:Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/10/19
 Report #: R4215887
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6M1799
Received: 2016/10/14, 11:34

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/10/18	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/10/18	2016/10/18	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/10/18	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/10/18	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/10/18	2016/10/18	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	2016/10/15	2016/10/17	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		DGC292		DGC292	
Sampling Date		2016/10/13 13:30		2016/10/13 13:30	
COC Number		577938-01-01		577938-01-01	
	UNITS	577938 POND	RDL	577938 POND Lab-Dup	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	ND	0.50		4701499
Inorganics					
pH	pH	8.47		8.47	4705096
Phenols-4AAP	mg/L	ND	0.0010		4703385
Total Suspended Solids	mg/L	4	1		4703231
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	ND	0.50		4706078
Total Oil & Grease Mineral/Synthetic	mg/L	ND	0.50		4706087
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	3.7°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
4703231	Total Suspended Solids	2016/10/17					ND,RDL=1	mg/L	NC	25	97	85 - 115
4703385	Phenols-4AAP	2016/10/18	92	80 - 120	100	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4705096	pH	2016/10/18			102	98 - 103			0.0071	N/A		
4706078	Total Oil & Grease	2016/10/18	90	75 - 125	97	85 - 115	ND, RDL=0.50	mg/L	11	25		
4706087	Total Oil & Grease Mineral/Synthetic	2016/10/18	94	75 - 125	96	85 - 115	ND, RDL=0.50	mg/L	NC	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

Cristina Carriere, Scientific Services

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INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #26238 Coco Paving Inc	Company Name: #17930 Golder Associates Ltd	Quotation #: B47292	Maxxam Job #:	Bottle Order #:	Barcode: 577938		
Attention: Teresa Cronk	Attention: Dawn Hoyle/Jamie Bonany	P.O. #:	Project Name: MCCARTHY		COC #:		
Address: 949 Wilson Ave Toronto ON M3K 1G2	Address: 121 Commerce Park Drive Unit L Barrie ON L4N 8X1	Project: 1407634	Site #: MCCARTHY		Project Manager: Antonella Brasil		
Tel: (416) 633-9670 Fax:	Tel: (705) 722-4492 Fax:	Sampled By: J. P. Cronk	Barcode: C#577938-01-01				
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

Regulation 153 (2011)						Other Regulations		Special Instructions		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required:						
<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						Field Filtered (please circle): Metals / Hg / Cr / V1	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (4AAP)	pH											Please provide advance notice for rush projects	
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 55B	<input type="checkbox"/> Storm Sewer Bylaw											Regular (Standard) TAT:											
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality: _____											(will be applied if Rush TAT is not specified):											
<input type="checkbox"/> Table	<input type="checkbox"/> PWQO	<input type="checkbox"/> Other: _____	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.											
Include Criteria on Certificate of Analysis (Y/N)?						Job Specific Rush TAT (if applies to entire submission)		Date Required: _____ Time Required: _____												Rush Confirmation Number: _____ (call lab for #)						
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered	Metals	Hg	Cr	V1	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (4AAP)	pH											# of Bottles	Comments	
577938	POND	OCT 13th	1:30 PM	SW	✓	✓	✓	✓	✓	✓	✓	✓	✓													
	POND																									

14-Oct-16 11:34
 Antonella Brasil
 B6M1799
 HGR ENV-1108

* 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		16/10/13	1:30 PM	APM 2016/10/14		2016/10/14	11:34		Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
Jodi Pascoe		16/10/13	1:30 PM	Antonella Brasil B6M1799		2016/10/14	11:34			5/13/3	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#: MCCARTHY
 Site Location: MCCARTHY
 Your C.O.C. #: 577938-02-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/10/27
 Report #: R4225697
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6M8114
Received: 2016/10/21, 10:31

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/10/27	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/10/26	2016/10/27	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/10/22	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/10/27	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/10/26	2016/10/27	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	2016/10/22	2016/10/25	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		DHH870		
Sampling Date		2016/10/20 14:30		
COC Number		577938-02-01		
	UNITS	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	0.90	0.50	4712035
Inorganics				
pH	pH	8.34		4713918
Phenols-4AAP	mg/L	ND	0.0010	4718445
Total Suspended Solids	mg/L	8	1	4714056
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	0.90	0.50	4718664
Total Oil & Grease Mineral/Synthetic	mg/L	ND	0.50	4718666
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	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
4713918	pH	2016/10/22			102	98 - 103			0.11	N/A		
4714056	Total Suspended Solids	2016/10/25					ND,RDL=1	mg/L	NC	25	98	85 - 115
4718445	Phenols-4AAP	2016/10/27	95	80 - 120	100	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4718664	Total Oil & Grease	2016/10/27			95	85 - 115	ND, RDL=0.50	mg/L	3.1	25		
4718666	Total Oil & Grease Mineral/Synthetic	2016/10/27			94	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

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

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21-Oct-16 10:31
 Antonella Brasil
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 Page of
 Bottle Order #:
 Project Manager:
 Antonella Brasil

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name: #26238 Coco Paving Inc	Company Name: #17930 Golder Associates Ltd	Quotation #: B47292			
Attention: Teresa Cronk	Attention: Dawn Hoyle/Jamie Bonany	P.O. #:			
Address: 949 Wilson Ave	Address: 121 Commerce Park Drive Unit L	Project: 1407634			
Toronto ON M3K 1G2	Barrie ON L4N 8X1	Project Name: MCCARTHY			
Tel: (416) 633-9670	Tel: (705) 722-4492	Site #:			
Email: TCronk@cocogroup.com	Email: Dawn_Hoyle@golder.com, Jamie_Bonany@golder.com	Sampled By: DARYL LAWACZ			

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)															
Regulation 153 (2011)		Other Regulations		Special Instructions	Field Filtered (please circle) Metals / Hg / Cr / V	Low Level Total Suspended Solids	Oil & Grease - A/V/M/T	Phenols (4AAP)	pH	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										
Table 1	Res/Park	Medium/Fine	CCME	Sanitary Sewer Bylaw																
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Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 583850-05-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/11/03
 Report #: R4234304
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6N4130
Received: 2016/10/28, 09:50

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/11/03	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/11/03	2016/11/03	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/11/01	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/11/01	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/11/03	2016/11/03	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	2016/10/31	2016/10/31	CAM SOP-00428	SM 22 2540D m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

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

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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

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

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

Your Project #: 1407634
Site#: 1407634
Site Location: MCCARTHY
Your C.O.C. #: 583850-05-01

Attention:Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/11/03
Report #: R4234304
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6N4130
Received: 2016/10/28, 09:50

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

Maxxam ID		DIQ179		
Sampling Date		2016/10/27 13:00		
COC Number		583850-05-01		
	UNITS	577938 POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	3.3	0.50	4722838
Inorganics				
pH	pH	8.12		4726071
Phenols-4AAP	mg/L	ND	0.0010	4725154
Total Suspended Solids	mg/L	6	1	4726711
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	3.3	0.50	4731038
Total Oil & Grease Mineral/Synthetic	mg/L	ND	0.50	4731040
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	5.3°C
-----------	-------

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
4725154	Phenols-4AAP	2016/11/01	99	80 - 120	101	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4726071	pH	2016/11/01			102	98 - 103			0.20	N/A		
4726711	Total Suspended Solids	2016/10/31					ND,RDL=1	mg/L	NC	25	96	85 - 115
4731038	Total Oil & Grease	2016/11/03			100	85 - 115	ND, RDL=0.50	mg/L	2.5	25		
4731040	Total Oil & Grease Mineral/Synthetic	2016/11/03			96	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).




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

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INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
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		P.O. #:			
Tel: (416) 633-9670		Address: Barrie ON L4N 8X1		Project: 1407634			
Email: TCronk@cocogroup.com		Tel: (705) 722-4492		Project Name: MCCARTHY	COC #:	Project Manager:	
		Email: Dawn_Hoyle@golder.com, Jamie_Bonany@golder.com		Site #: ROB TOOLE		Antonella Brasil	

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 /CrVI	Low Level Total Suspended Solids	Oil & Grease - ANMT	Phenols (MPP)	PH	Regular (Standard) TAT: <small>(will be applied if Rush TAT is not specified)</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						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"/> PWQG							Date Required: _____ Time Required: _____	
			<input type="checkbox"/> Other							Rush Confirmation Number: _____ <small>(call lab for #)</small>	
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix						# of Bottles	Comments
577938	POND	OCT. 27/16	1:00 PM	SLW	✓	✓	✓	✓	✓		

28-Oct-16 09:50
Antonella Brasil
B6N4130
PS4 ENV-1107

* 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		16/10/27	1:00 PM	KAREN PASCOE	20/10/28	09:50		Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
Dawn Hoyle		16/10/27	1:00 PM						5/4/7	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 Location: MCCARTHY
 Your C.O.C. #: 583851-01-01

Attention: Jamie Bonany

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

Report Date: 2016/11/08
 Report #: R4240138
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6N1506
Received: 2016/10/26, 09:23

Sample Matrix: Water
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity	2	N/A	2016/11/02	CAM SOP-00448	SM 22 2320 B m
Carbonate, Bicarbonate and Hydroxide	2	N/A	2016/11/02	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	2	N/A	2016/10/28	CAM SOP-00463	EPA 325.2 m
Conductivity	2	N/A	2016/11/02	CAM SOP-00414	SM 22 2510 m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2016/10/29	CAM SOP-00446	SM 22 5310 B m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2016/10/31	CAM SOP-00446	SM 22 5310 B m
Fluoride	2	2016/11/01	2016/11/02	CAM SOP-00449	SM 22 4500-F C m
Hardness (calculated as CaCO3)	2	N/A	2016/11/02	CAM SOP 00102/00408/00447	SM 2340 B
Total Metals Analysis by ICPMS	2	N/A	2016/11/08	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	2	N/A	2016/11/02		
Anion and Cation Sum	2	N/A	2016/11/02		
Total Ammonia-N	2	N/A	2016/10/31	CAM SOP-00441	EPA GS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (2)	1	N/A	2016/10/31	CAM SOP-00440	SM 22 4500-NO3I/NO2B
Nitrate (NO3) and Nitrite (NO2) in Water (2)	1	N/A	2016/11/01	CAM SOP-00440	SM 22 4500-NO3I/NO2B
Total Oil and Grease	2	2016/10/31	2016/10/31	CAM SOP-00326	EPA1664B m, SM5520A m
pH	2	N/A	2016/11/02	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	2	N/A	2016/10/28	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	2	N/A	2016/10/28	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids	2	2016/10/28	2016/10/31	CAM SOP-00428	SM 22 2540C m
Total Kjeldahl Nitrogen in Water	2	2016/10/27	2016/11/01	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2016/10/28	2016/10/31	CAM SOP-00407	SM 22 4500 P B H m
Total Suspended Solids	2	2016/10/28	2016/10/31	CAM SOP-00428	SM 22 2540D m

Remarks:

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Your Project #: 1407634
Site Location: MCCARTHY
Your C.O.C. #: 583851-01-01

Attention: Jamie Bonany

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

Report Date: 2016/11/08
Report #: R4240138
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6N1506

Received: 2016/10/26, 09:23

unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

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

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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

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

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

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

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			DIC145		DIC146	DIC146		
Sampling Date			2016/10/25 09:30		2016/10/25 15:15	2016/10/25 15:15		
COC Number			583851-01-01		583851-01-01	583851-01-01		
	UNITS	Criteria	POND	QC Batch	SW1	SW1 Lab-Dup	RDL	QC Batch
Calculated Parameters								
Anion Sum	me/L	-	22.9	4719275	22.7		N/A	4719275
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	88	4718410	86		1.0	4718410
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	<1.0	4718410	<1.0		1.0	4718410
Cation Sum	me/L	-	23.7	4719275	23.8		N/A	4719275
Hardness (CaCO3)	mg/L	-	460	4718406	460		1.0	4718406
Ion Balance (% Difference)	%	-	1.66	4718407	2.21		N/A	4718407
Inorganics								
Total Ammonia-N	mg/L	-	0.35	4723061	0.34		0.050	4723061
Conductivity	mS/cm	-	2.43	4728059	2.42	2.42	0.001	4728059
Total Dissolved Solids	mg/L	-	1460	4722839	1520		10	4722839
Fluoride (F-)	mg/L	-	0.90	4728060	0.85	0.86	0.10	4728060
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.73	4721972	0.60		0.10	4721854
Dissolved Organic Carbon	mg/L	-	6.4	4724532	6.3		0.20	4726407
pH	pH	6.5:8.5	7.98	4728058	7.86	7.98		4728058
Phenols-4AAP	mg/L	0.001	<0.0010	4722609	<0.0010		0.0010	4722609
Total Phosphorus	mg/L	0.01	0.025	4723277	<0.020 (1)		0.020	4723277
Total Suspended Solids	mg/L	-	11	4722829	13		10	4722829
Dissolved Sulphate (SO4)	mg/L	-	390	4721703	390		1.0	4721703
Alkalinity (Total as CaCO3)	mg/L	-	88	4727963	87	88	1.0	4727963
Dissolved Chloride (Cl)	mg/L	-	460	4721702	450		5.0	4721702
Nitrite (N)	mg/L	-	0.107	4724635	0.103		0.010	4724626
Nitrate (N)	mg/L	-	1.71	4724635	1.61		0.10	4724626
Nitrate + Nitrite (N)	mg/L	-	1.81	4724635	1.71		0.10	4724626
Petroleum Hydrocarbons								
Total Oil & Grease	mg/L	-	1.1	4725382	1.3		0.50	4725382
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Lab-Dup = Laboratory Initiated Duplicate								
Criteria: Ontario Provincial Water Quality Objectives								
Ref. to MOEE Water Management document dated Feb.1999								
(1) RDL exceeds criteria								

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID			DIC145	DIC146		
Sampling Date			2016/10/25 09:30	2016/10/25 15:15		
COC Number			583851-01-01	583851-01-01		
	UNITS	Criteria	POND	SW1	RDL	QC Batch
Metals						
Total Arsenic (As)	ug/L	100	<1.0	<1.0	1.0	4738181
Total Cadmium (Cd)	ug/L	0.2	<0.10	<0.10	0.10	4738181
Total Calcium (Ca)	ug/L	-	84000	85000	200	4738181
Total Chromium (Cr)	ug/L	-	<5.0	<5.0	5.0	4738181
Total Copper (Cu)	ug/L	5	<1.0	<1.0	1.0	4738181
Total Iron (Fe)	ug/L	300	<100	<100	100	4738181
Total Lead (Pb)	ug/L	5	<0.50	<0.50	0.50	4738181
Total Magnesium (Mg)	ug/L	-	57000	58000	50	4738181
Total Manganese (Mn)	ug/L	-	3.2	6.8	2.0	4738181
Total Nickel (Ni)	ug/L	25	<1.0	1.0	1.0	4738181
Total Potassium (K)	ug/L	-	18000	18000	200	4738181
Total Sodium (Na)	ug/L	-	310000	310000	100	4738181
Total Zinc (Zn)	ug/L	30	<5.0	<5.0	5.0	4738181
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Criteria: Ontario Provincial Water Quality Objectives						
Ref. to MOEE Water Management document dated Feb.1999						

TEST SUMMARY

Maxxam ID: DIC145
Sample ID: POND
Matrix: Water

Collected: 2016/10/25
Shipped:
Received: 2016/10/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	4727963	N/A	2016/11/02	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	4718410	N/A	2016/11/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	4721702	N/A	2016/10/28	Deonarine Ramnarine
Conductivity	AT	4728059	N/A	2016/11/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	4724532	N/A	2016/10/29	Anastasia Hamanov
Fluoride	ISE	4728060	2016/11/01	2016/11/02	Surinder Rai
Hardness (calculated as CaCO3)		4718406	N/A	2016/11/02	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	4738181	N/A	2016/11/08	John Bowman
Ion Balance (% Difference)	CALC	4718407	N/A	2016/11/02	Automated Statchk
Anion and Cation Sum	CALC	4719275	N/A	2016/11/02	Automated Statchk
Total Ammonia-N	LACH/NH4	4723061	N/A	2016/10/31	Charles Opoku-Ware
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	4724635	N/A	2016/10/31	Chandra Nandlal
Total Oil and Grease	BAL	4725382	2016/10/31	2016/10/31	Francis Afonso
pH	AT	4728058	N/A	2016/11/02	Surinder Rai
Phenols (4AAP)	TECH/PHEN	4722609	N/A	2016/10/28	Bramdeo Motiram
Sulphate by Automated Colourimetry	KONE	4721703	N/A	2016/10/28	Deonarine Ramnarine
Total Dissolved Solids	BAL	4722839	2016/10/28	2016/10/31	Zahid Soikot
Total Kjeldahl Nitrogen in Water	SKAL	4721972	2016/10/27	2016/11/01	Amarinder Sawhney
Total Phosphorus (Colourimetric)	LACH/P	4723277	2016/10/28	2016/10/31	Sarabjit Raina
Total Suspended Solids	BAL	4722829	2016/10/28	2016/10/31	Zahid Soikot

Maxxam ID: DIC146
Sample ID: SW1
Matrix: Water

Collected: 2016/10/25
Shipped:
Received: 2016/10/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	4727963	N/A	2016/11/02	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	4718410	N/A	2016/11/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	4721702	N/A	2016/10/28	Deonarine Ramnarine
Conductivity	AT	4728059	N/A	2016/11/02	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	4726407	N/A	2016/10/31	Anastasia Hamanov
Fluoride	ISE	4728060	2016/11/01	2016/11/02	Surinder Rai
Hardness (calculated as CaCO3)		4718406	N/A	2016/11/02	Automated Statchk
Total Metals Analysis by ICPMS	ICP/MS	4738181	N/A	2016/11/08	John Bowman
Ion Balance (% Difference)	CALC	4718407	N/A	2016/11/02	Automated Statchk
Anion and Cation Sum	CALC	4719275	N/A	2016/11/02	Automated Statchk
Total Ammonia-N	LACH/NH4	4723061	N/A	2016/10/31	Charles Opoku-Ware
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	4724626	N/A	2016/11/01	Chandra Nandlal
Total Oil and Grease	BAL	4725382	2016/10/31	2016/10/31	Francis Afonso
pH	AT	4728058	N/A	2016/11/02	Surinder Rai
Phenols (4AAP)	TECH/PHEN	4722609	N/A	2016/10/28	Bramdeo Motiram
Sulphate by Automated Colourimetry	KONE	4721703	N/A	2016/10/28	Deonarine Ramnarine
Total Dissolved Solids	BAL	4722839	2016/10/28	2016/10/31	Zahid Soikot
Total Kjeldahl Nitrogen in Water	SKAL	4721854	2016/10/27	2016/11/01	Rajni Tyagi

TEST SUMMARY

Maxxam ID: DIC146
Sample ID: SW1
Matrix: Water

Collected: 2016/10/25
Shipped:
Received: 2016/10/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Phosphorus (Colourimetric)	LACH/P	4723277	2016/10/28	2016/10/31	Sarabjit Raina
Total Suspended Solids	BAL	4722829	2016/10/28	2016/10/31	Zahid Soikot

Maxxam ID: DIC146 Dup
Sample ID: SW1
Matrix: Water

Collected: 2016/10/25
Shipped:
Received: 2016/10/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	4727963	N/A	2016/11/02	Surinder Rai
Conductivity	AT	4728059	N/A	2016/11/02	Surinder Rai
Fluoride	ISE	4728060	2016/11/01	2016/11/02	Surinder Rai
pH	AT	4728058	N/A	2016/11/02	Surinder Rai

GENERAL COMMENTS

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

Package 1	4.0°C
Package 2	4.7°C
Package 3	4.3°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
4721702	DRM	Matrix Spike	Dissolved Chloride (Cl)	2016/10/28		NC	%	80 - 120
4721702	DRM	Spiked Blank	Dissolved Chloride (Cl)	2016/10/28		103	%	80 - 120
4721702	DRM	Method Blank	Dissolved Chloride (Cl)	2016/10/28	<1.0		mg/L	
4721702	DRM	RPD	Dissolved Chloride (Cl)	2016/10/28	0.41		%	20
4721703	DRM	Matrix Spike	Dissolved Sulphate (SO4)	2016/10/28		NC	%	75 - 125
4721703	DRM	Spiked Blank	Dissolved Sulphate (SO4)	2016/10/28		102	%	80 - 120
4721703	DRM	Method Blank	Dissolved Sulphate (SO4)	2016/10/28	<1.0		mg/L	
4721703	DRM	RPD	Dissolved Sulphate (SO4)	2016/10/28	1.4		%	20
4721854	RTY	Matrix Spike	Total Kjeldahl Nitrogen (TKN)	2016/11/01		105	%	80 - 120
4721854	RTY	QC Standard	Total Kjeldahl Nitrogen (TKN)	2016/11/01		99	%	80 - 120
4721854	RTY	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2016/11/01		93	%	80 - 120
4721854	RTY	Method Blank	Total Kjeldahl Nitrogen (TKN)	2016/11/01	<0.10		mg/L	
4721854	RTY	RPD	Total Kjeldahl Nitrogen (TKN)	2016/11/01	NC		%	20
4721972	AAY	Matrix Spike	Total Kjeldahl Nitrogen (TKN)	2016/11/02		NC	%	80 - 120
4721972	AAY	QC Standard	Total Kjeldahl Nitrogen (TKN)	2016/11/01		95	%	80 - 120
4721972	AAY	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2016/11/01		108	%	80 - 120
4721972	AAY	Method Blank	Total Kjeldahl Nitrogen (TKN)	2016/11/01	<0.10		mg/L	
4721972	AAY	RPD	Total Kjeldahl Nitrogen (TKN)	2016/11/02	NC		%	20
4722609	BMO	Matrix Spike	Phenols-4AAP	2016/10/28		91	%	80 - 120
4722609	BMO	Spiked Blank	Phenols-4AAP	2016/10/28		100	%	85 - 115
4722609	BMO	Method Blank	Phenols-4AAP	2016/10/28	<0.0010		mg/L	
4722609	BMO	RPD	Phenols-4AAP	2016/10/28	NC		%	20
4722829	ZSK	QC Standard	Total Suspended Solids	2016/10/31		98	%	85 - 115
4722829	ZSK	Method Blank	Total Suspended Solids	2016/10/31	<10		mg/L	
4722829	ZSK	RPD	Total Suspended Solids	2016/10/31	NC		%	25
4722839	ZSK	QC Standard	Total Dissolved Solids	2016/10/31		101	%	90 - 110
4722839	ZSK	Method Blank	Total Dissolved Solids	2016/10/31	<10		mg/L	
4722839	ZSK	RPD	Total Dissolved Solids	2016/10/31	17		%	25
4723061	COP	Matrix Spike	Total Ammonia-N	2016/10/31		NC	%	80 - 120
4723061	COP	Spiked Blank	Total Ammonia-N	2016/10/31		97	%	85 - 115
4723061	COP	Method Blank	Total Ammonia-N	2016/10/31	<0.050		mg/L	
4723061	COP	RPD	Total Ammonia-N	2016/10/31	0.14		%	20
4723277	SNR	Matrix Spike	Total Phosphorus	2016/10/31		102	%	80 - 120
4723277	SNR	QC Standard	Total Phosphorus	2016/10/31		103	%	80 - 120
4723277	SNR	Spiked Blank	Total Phosphorus	2016/10/31		102	%	80 - 120
4723277	SNR	Method Blank	Total Phosphorus	2016/10/31	<0.020		mg/L	
4723277	SNR	RPD	Total Phosphorus	2016/10/31	NC		%	20
4724532	AHA	Matrix Spike	Dissolved Organic Carbon	2016/10/29		NC	%	80 - 120
4724532	AHA	Spiked Blank	Dissolved Organic Carbon	2016/10/29		101	%	80 - 120
4724532	AHA	Method Blank	Dissolved Organic Carbon	2016/10/29	0.20, RDL=0.20		mg/L	
4724532	AHA	RPD	Dissolved Organic Carbon	2016/10/29	2.2		%	20
4724626	C_N	Matrix Spike	Nitrite (N)	2016/11/01		100	%	80 - 120
			Nitrate (N)	2016/11/01		82	%	80 - 120
4724626	C_N	Spiked Blank	Nitrite (N)	2016/11/01		104	%	80 - 120
			Nitrate (N)	2016/11/01		93	%	80 - 120
4724626	C_N	Method Blank	Nitrite (N)	2016/11/01	<0.010		mg/L	
			Nitrate (N)	2016/11/01	<0.10		mg/L	
4724626	C_N	RPD	Nitrite (N)	2016/11/01	NC		%	20
			Nitrate (N)	2016/11/01	13		%	20
4724635	C_N	Matrix Spike	Nitrite (N)	2016/10/31		NC	%	80 - 120
			Nitrate (N)	2016/10/31		NC	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4724635	C_N	Spiked Blank	Nitrite (N)	2016/10/31		100	%	80 - 120
			Nitrate (N)	2016/10/31		94	%	80 - 120
4724635	C_N	Method Blank	Nitrite (N)	2016/10/31	<0.010		mg/L	
			Nitrate (N)	2016/10/31	<0.10		mg/L	
4724635	C_N	RPD	Nitrite (N)	2016/10/31	1.2		%	20
			Nitrate (N)	2016/10/31	0.45		%	20
4725382	FA	Spiked Blank	Total Oil & Grease	2016/10/31		98	%	85 - 115
4725382	FA	RPD	Total Oil & Grease	2016/10/31	2.9		%	25
4725382	FA	Method Blank	Total Oil & Grease	2016/10/31	<0.50		mg/L	
4726407	AHA	Matrix Spike	Dissolved Organic Carbon	2016/10/31		103	%	80 - 120
4726407	AHA	Spiked Blank	Dissolved Organic Carbon	2016/10/31		103	%	80 - 120
4726407	AHA	Method Blank	Dissolved Organic Carbon	2016/10/31	<0.20		mg/L	
4726407	AHA	RPD	Dissolved Organic Carbon	2016/10/31	8.9		%	20
4727963	SAU	Spiked Blank	Alkalinity (Total as CaCO3)	2016/11/02		96	%	85 - 115
4727963	SAU	Method Blank	Alkalinity (Total as CaCO3)	2016/11/02	<1.0		mg/L	
4727963	SAU	RPD [DIC146-02]	Alkalinity (Total as CaCO3)	2016/11/02	2.2		%	20
4728058	SAU	Spiked Blank	pH	2016/11/02		102	%	98 - 103
4728058	SAU	RPD [DIC146-02]	pH	2016/11/02	1.5		%	N/A
4728059	SAU	Spiked Blank	Conductivity	2016/11/02		101	%	85 - 115
4728059	SAU	Method Blank	Conductivity	2016/11/02	<0.001		mS/cm	
4728059	SAU	RPD [DIC146-02]	Conductivity	2016/11/02	0		%	25
4728060	SAU	Matrix Spike [DIC146-02]	Fluoride (F-)	2016/11/02		106	%	80 - 120
4728060	SAU	Spiked Blank	Fluoride (F-)	2016/11/02		102	%	80 - 120
4728060	SAU	Method Blank	Fluoride (F-)	2016/11/02	<0.10		mg/L	
4728060	SAU	RPD [DIC146-02]	Fluoride (F-)	2016/11/02	0.47		%	20
4738181	JBW	Matrix Spike	Total Arsenic (As)	2016/11/08		98	%	80 - 120
			Total Cadmium (Cd)	2016/11/08		97	%	80 - 120
			Total Calcium (Ca)	2016/11/08		NC	%	80 - 120
			Total Chromium (Cr)	2016/11/08		99	%	80 - 120
			Total Copper (Cu)	2016/11/08		NC	%	80 - 120
			Total Iron (Fe)	2016/11/08		97	%	80 - 120
			Total Lead (Pb)	2016/11/08		96	%	80 - 120
			Total Magnesium (Mg)	2016/11/08		NC	%	80 - 120
			Total Manganese (Mn)	2016/11/08		92	%	80 - 120
			Total Nickel (Ni)	2016/11/08		95	%	80 - 120
			Total Potassium (K)	2016/11/08		NC	%	80 - 120
			Total Sodium (Na)	2016/11/08		NC	%	80 - 120
			Total Zinc (Zn)	2016/11/08		NC	%	80 - 120
4738181	JBW	Spiked Blank	Total Arsenic (As)	2016/11/08		99	%	80 - 120
			Total Cadmium (Cd)	2016/11/08		96	%	80 - 120
			Total Calcium (Ca)	2016/11/08		95	%	80 - 120
			Total Chromium (Cr)	2016/11/08		98	%	80 - 120
			Total Copper (Cu)	2016/11/08		96	%	80 - 120
			Total Iron (Fe)	2016/11/08		99	%	80 - 120
			Total Lead (Pb)	2016/11/08		98	%	80 - 120
			Total Magnesium (Mg)	2016/11/08		98	%	80 - 120
			Total Manganese (Mn)	2016/11/08		93	%	80 - 120
			Total Nickel (Ni)	2016/11/08		98	%	80 - 120
			Total Potassium (K)	2016/11/08		95	%	80 - 120
			Total Sodium (Na)	2016/11/08		98	%	80 - 120
			Total Zinc (Zn)	2016/11/08		101	%	80 - 120
4738181	JBW	Method Blank	Total Arsenic (As)	2016/11/08	<1.0		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Cadmium (Cd)	2016/11/08	<0.10		ug/L	
			Total Calcium (Ca)	2016/11/08	<200		ug/L	
			Total Chromium (Cr)	2016/11/08	<5.0		ug/L	
			Total Copper (Cu)	2016/11/08	<1.0		ug/L	
			Total Iron (Fe)	2016/11/08	<100		ug/L	
			Total Lead (Pb)	2016/11/08	<0.50		ug/L	
			Total Magnesium (Mg)	2016/11/08	<50		ug/L	
			Total Manganese (Mn)	2016/11/08	<2.0		ug/L	
			Total Nickel (Ni)	2016/11/08	<1.0		ug/L	
			Total Potassium (K)	2016/11/08	<200		ug/L	
			Total Sodium (Na)	2016/11/08	<100		ug/L	
			Total Zinc (Zn)	2016/11/08	<5.0		ug/L	
4738181	JBW	RPD	Total Arsenic (As)	2016/11/08	NC		%	20
			Total Cadmium (Cd)	2016/11/08	NC		%	20
			Total Chromium (Cr)	2016/11/08	NC		%	20
			Total Copper (Cu)	2016/11/08	1.7		%	20
			Total Lead (Pb)	2016/11/08	NC		%	20
			Total Manganese (Mn)	2016/11/08	2.5		%	20
			Total Nickel (Ni)	2016/11/08	0.80		%	20
			Total Zinc (Zn)	2016/11/08	0.57		%	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

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	DIC145-04	Total Phosphorus	0.01	0.025	0.020	mg/L

Detection Limit Exceedences

Sample ID	Maxxam ID	Parameter	Criteria	Result	DL	Units
SW1	DIC146-04	Total Phosphorus	0.01	<0.020	0.020	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: 16T128352

ECOTOX ANALYSIS REVIEWED BY: Virginie Bérubé, biologiste

DATE REPORTED: Sep 12, 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: 16T128352

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: Patti C

Daphnia Lethality (D. magna) SC-48h

DATE RECEIVED: 2016-08-19

DATE REPORTED: 2016-09-12

SAMPLE DESCRIPTION:		Pond	
SAMPLE TYPE:		Water	
DATE SAMPLED:		8/18/2016	
Parameter	Unit	G / S	RDL
Mortality 100% v/v	% mortality-48h		7787583
			0
Acute Lethality			NO

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
 7787583 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: 16T128352

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: Patti C

Rainbow Trout Lethality (O. mykiss) SC-96h

DATE RECEIVED: 2016-08-19

DATE REPORTED: 2016-09-12

		SAMPLE DESCRIPTION: Pond	
		SAMPLE TYPE: Water	
		DATE SAMPLED: 8/18/2016	
Parameter	Unit	G / S	RDL
Mortality 100% v/v	% mortality-96h		7787583
			0
Acute Lethality			NO

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
 7787583 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: 16T128352

PROJECT: 1407634

ATTENTION TO: Ryan Abrams

SAMPLING SITE:

SAMPLED BY: Patti C

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	

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: 16T142666

ECOTOX ANALYSIS REVIEWED BY: Virginie Bérubé, biologiste

DATE REPORTED: Oct 13, 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: 16T142666

PROJECT: 1407634

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

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Ryan Abrams

SAMPLING SITE:

SAMPLED BY:

Daphnia Lethality (D. magna) SC-48h

DATE RECEIVED: 2016-09-29

DATE REPORTED: 2016-10-13

SAMPLE DESCRIPTION: Pond
SAMPLE TYPE: Water
DATE SAMPLED: 9/28/2016

Parameter	Unit	G / S	RDL	7885594
Mortality 100% v/v	% mortality-48h			0
Acute Lethality				NO

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
7885594 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: 16T142666

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) SC-96h

DATE RECEIVED: 2016-09-29

DATE REPORTED: 2016-10-13

SAMPLE DESCRIPTION:		Pond	
SAMPLE TYPE:		Water	
DATE SAMPLED:		9/28/2016	
Parameter	Unit	G / S	RDL
Mortality 100% v/v	% mortality-96h		7885594
			0
Acute Lethality			NO

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
 7885594 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: 16T142666

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
Acute Lethality			
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: Dawn Hoyle

PROJECT: 1407634

AGAT WORK ORDER: 16T152835

ECOTOX ANALYSIS REVIEWED BY: Virginie Bérubé, biologiste

DATE REPORTED: Nov 15, 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: 16T152835

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:

SAMPLED BY:

Daphnia Lethality (D. magna) SC-48h

DATE RECEIVED: 2016-10-26

DATE REPORTED: 2016-11-15

SAMPLE DESCRIPTION: Pond
SAMPLE TYPE: Water
DATE SAMPLED: 2016-10-25
G / S RDL 7957201

Parameter	Unit	G / S	RDL	7957201
Mortality 100% v/v	% mortality-48h			0
Acute Lethality				NO

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
7957201 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: 16T152835

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:

SAMPLED BY:

Rainbow Trout Lethality (O. mykiss) SC-96h

DATE RECEIVED: 2016-10-26

DATE REPORTED: 2016-11-15

SAMPLE DESCRIPTION:		Pond	
SAMPLE TYPE:		Water	
DATE SAMPLED:		2016-10-25	
Parameter	Unit	G / S	RDL
Mortality 100% v/v	% mortality-96h		7957201
			0
Acute Lethality			NO

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
 7957201 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: 16T152835

PROJECT: 1407634

ATTENTION TO: Dawn Hoyle

SAMPLING SITE:

SAMPLED BY:

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	EPS1/RM/13	



AGAT

ASAP Laboratories

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

Laboratory Use Only

Work Order #: 16T152835

Cooler Quantity: _____
Arrival Temperatures: 15.0

Custody Seal Intact: Yes No N/A
Notes: NO ICE

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: Golder Associates Ltd.
Contact: Jamie Brany
Address: 121 Commerce Park Dr. Unit C
Barrie, ON L4N 8X1
Phone: 705-722-4492 Fax: 705-722-3786
Reports to be sent to:
1. Email: Jamie.Brany@golder.com
2. Email: Dawn-Hayle@golder.com

Regulatory Requirements: No Regulatory Requirement

(Please check all applicable boxes)

Regulation 153/04 Sewer Use Regulation 558
Table Indicate One Sanitary CCME
 Ind/Corn Storm Prov. Water Quality Objectives (PWQO)
 Res/Park Agriculture Other
Soil Texture (Check One) Region Indicate One
 Coarse Fine Indicate One

Is this submission for a Record of Site Condition?

Yes No

Report Guideline on Certificate of Analysis

Yes No

Project Information:

Project: 1407034
Site Location: McCarthy
Sampled By: DEH / RA
AGAT Quote #: _____ PO: _____
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes No

Company: _____
Contact: Patti Chapple
Address: _____
Email: _____

Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N	Field Filtered - Metals, Hg, CrVI (Please Circle)	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: <input type="checkbox"/> B-HWS <input type="checkbox"/> Cl <input type="checkbox"/> CN <input type="checkbox"/> Cr ⁶⁺ <input type="checkbox"/> EC <input type="checkbox"/> FOC <input type="checkbox"/> NO ₃ /NO ₂ <input type="checkbox"/> Total N <input type="checkbox"/> Hg <input type="checkbox"/> pH <input type="checkbox"/> SAR	Nutrients: <input type="checkbox"/> TP <input type="checkbox"/> NH ₃ <input type="checkbox"/> TKN <input type="checkbox"/> NO ₃ <input type="checkbox"/> NO ₂ <input type="checkbox"/> NO _x /NO ₂	Volatiles: <input type="checkbox"/> VOC <input type="checkbox"/> BTEX <input type="checkbox"/> THM	CCME Fractions 1 to 4	ABNS	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	
<u>Pond</u>	<u>25-Oct-16</u>	<u>9:30</u>	<u>1</u>	<u>SW</u>																			<u>X Rainbow & Diaphnia Single C.</u>

Samples Relinquished By (Print Name and Sign): <u>Dawn Hayle</u> <u>DHayle</u>	Date: <u>25-Oct-16</u>	Time: <u>6:00</u>	Samples Received By (Print Name and Sign): <u>MARCO</u>	Date: <u>10/26</u>	Time: <u>10:30</u>
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:

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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.

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