APPENDIX E

Surface Water Quality Sampling

E-1 Surface Water Quality Sampling Protocol

E-2 Laboratory Results

E-3 *In Situ* Measurements

E-1 Surface Water Quality Sampling Protocol

TECHNICAL MEMORANDUM

DATE June 12, 2012
Revision 1 April 25, 2013

PROJECT No. 12-1151-0155

TO Jim Delaney
Covanta Durham York Renewable Energy L.P.

CC Jeff Bedard and Janice Campbell - Courtice Power Partners; and Terry Winhold - Golder Associates

FROM Steve Auger

EMAIL Steve_Auger@golder.com

DURHAM-YORK ENERGY CENTER SURFACE WATER SAMPLING PROTOCOL DURING CONSTRUCTION PERIOD – Starting June 2012 to approximately May 2014

1.0 INTRODUCTION

This memorandum outlines the Surface Water Sampling protocol for the on and off-site sampling activities for the Durham-York Energy Center ('the Site') during construction activities in support of the overall Groundwater and Surface Water Sampling Monitoring Plan as per Condition 20 of the Site's Environmental Assessment Notice of Approval. The Site Plan Agreement was executed with the Corporation of the Municipality of Clarington and Regional Municipality of Durham on January 24, 2012. Since then, Site construction activities are underway. Operation for the facility is scheduled to commence in May, 2014. Golder Associates Ltd. ('Golder') performed the initial site reconnaissance for this program on May 29, 2012. Covanta Durham York Renewable Energy Limited ('Covanta') commissioned Golder to carry-out this program on May 25, 2012.

2.0 SURFACE WATER SAMPLING

The surface water sampling stations (SWM-E-IN, SWM-E-OUT, SWM-W-IN SWM-W-OUT, and SW1 to SW4) for all on and off-site efforts are shown on Figure 1.

Frequency

At least one inter-event (dry period) surface water sampling grab will occur per season (at minimum, approximately 48 hours after a significant rainfall event of 5 mm or greater). Two more rainfall-runoff sampling grabs will occur for rainfall events of approximately 5 mm or greater.

The surface water sampling grabs will be initiated after direction is received from Covanta. The decision will occur after Covanta consults with the on-site contractor, Courtice Power Partners ('CPP', and Golder.

Sampling Grabs and In Situ Measurements

- Four (4), 500 mL sampling bottles will be filled at each location with surface water grabs. Two (2) of the sampling bottles from each location will be submitted to the laboratory for Total Suspended Solids ('TSS')

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and Turbidity analyses. The bottles submitted will be labelled with the appropriate analysis identified, the date and time of sampling, sampling grab location and Golder project number. An additional two (2) bottles will act as duplicates and be stored off-site at the local Golder-Whitby office until lab results are received, reviewed and discussed with Covanta. The duplicate samples will be discarded every season once this review and follow-up discussion is complete. If there is any question or concern regarding the initial laboratory results, the duplicate samples will be submitted to the laboratory for additional analysis after Covanta provides consent for this additional expense.

- *In situ* measurements for pH, temperature and conductivity will also be taken by Golder staff when on-site. The instrument used for these measurements will be calibrated before each use, to ensure accurate results are provided.

On-Site Stormwater Management Ponds

Grab samples will be taken during rainfall-runoff event periods at the inlet and outlet of the East and West stormwater management ('SWM') Ponds.

Rainfall-Runoff-Discharge Sampling

Every reasonable effort, while ensuring safety of the Golder staff, will be taken to sample during a significant rainfall-runoff event (approximately 5 mm or greater of total rainfall) after Golder receives direction to proceed from Covanta.

Grab samples at the inlet and outlet of the SWM Ponds will be taken during the rising and falling limbs of the inflow and outflow to and from these SWM Ponds, respectively. The coordination of these sample grabs will be based on experience and the specific storm characteristics (e.g., intensity, duration, total volume) and Site conditions (e.g., antecedent conditions).

Controlled Discharge Sampling

During a controlled pump-out sampling scenario, the East and West SWM Pond outlet stations, along with the upstream and downstream receiving swale (SW1 and SW2) and Tooley Creek grabs will be performed (at the very least) following a significant rainfall event of approximately 5 mm or greater. Considering this 'controlled' sampling scenario, it is not anticipated that inflow conditions at the SWM-E-IN and SWM-W-IN sampling locations will be suitable for grab samples. However, if there is still reasonable inflow into the ponds during these controlled discharge events, grab samples will also be taken at these locations.

Off-Site Receiving Swale and Tooley Creek

Grab sampling at the upstream and downstream receiving swale locations (SW1 and SW2), along with the upstream and downstream Tooley Creek stations (SW3 and SW4), will occur after all on-site sampling is complete. These samples will be taken in numerical sequence.

The following general good practices for surface water grab sampling will also be followed by Golder staff.

Grab Sampling Technique

- Surface Water sampling will occur via a grab sample from identified, consistent sampling locations that are considered representative of 'well-mixed' surface water conditions at the sampling station. Typically, these grabs will be taken in the centre-line zone of the receiving swale or creek, or the centre of the inlet or outlet location for the SWM Ponds. These samples should be grabbed from depths slightly below the surface of the water, is the water depths at the time of sampling is accommodating (Burton and Pitt, 2002).

- Care must be taken to not to disturb the substrate at the sampling station, to avoid any increase in TSS or Turbidity measurements while sampling efforts occur. If depths are too shallow, every effort will be taken for a 'well-mixed' sample, while avoiding any disturbance (e.g., shallow sampling scoops using control bottle).

Field Forms and Reporting

- Golder has developed a surface water sampling field form that should be filled out in it's entirety for each station during the sampling effort (Attachment 1). Along with the recorded *in situ* measurements, visual observations will be made during the sampling periods.
- A technical memorandum will be prepared each season, outlining the surface water sampling results along with a summary of the Erosion and Sediment Control ('E&SC') weekly reviews. This memo will also highlight any additional E&SC measures recommended for consideration, if there are any concerns with surface water impacts off-site based on the surface water sampling results and/or the E&SC inspection reviews.

Site Photographic Record

A photographic record of conditions at the eight surface water quality sampling locations and other notable view points will developed by Golder to illustrate study area conditions during the surface water sampling visits.

Sample Submission to Laboratory

- Grab samples will be packaged in ice and sent to the laboratory for analysis immediately after the sampling event. Approximately two (2) bags of ice will be required to fill the cooler box provided with the bottles. Ice bags should entirely surround the sample bottles by being placed on the bottom of the cooler below the sample bottles, as well as between, on all sides and above the sample bottles. If the temperature of the bottles is below 10 ˚C when it is received at the laboratory, the analysis results are less reliable and this will be noted in the laboratory results.
- Golder will follow the chain-of-custody protocol from the laboratory of choice, and provide a copy of the grab sample set exchange with the laboratory to Covanta for their records.
- When analytical results are complete, they will be forwarded via e-mail to the Golder Surface Water Certified Environmental Practitioner ('CEP').

3.0 HEALTH AND SAFETY

Site Training and Communication

All Golder staff involved with the Site's Surface Water Sampling program will receive Health and Safety orientation from CPP. As part of the training requirement, Golder staff will ensure both Workplace Hazardous Materials Information System ('WHMIS') and Fall Protection Awareness training/qualifications are current.

Upon arrival to the Site, Golder staff must back vehicles safely into a parking spot in the eastern control area near the contractors and consultants offices. Golder staff must check in with the CPP Environmental Monitor and Inspector (EMI) or Janice Campbell (CPP Health and Safety Coordinator) for a Health and Safety briefing outlining the specific Site activities and notable hazards for the day. A sign-in sheet within the CPP training must also be filled. Upon departure, a check-out confirmation with the CPP representative originally contacted, along with signing out must also occur.

Jim Delaney or Dave Haldenby (Covanta) will also be informed of each site visit by the Golder Surface Water CEP or designate ahead of the Golder team's arrival.

Golder Health and Safety Environment Plan

The Golder staff will be following a separate Health and Safety Environment Plan ('HaESP'), that outlines the risks and preventative strategies to ensure safety on and off Site (Attachment 2). The appropriate Health and Safety personal protection equipment for the on and off-site work include a construction hat, goggles, steel toed construction boots (while on-site), and waders for the off-site sampling work in Tooley Creek at stations SW3 and SW4.

For the surface water sampling efforts, a check-in and out contact will also be made with the Golder project manager or alternative Health & Safety point of contact for the site visit.

CN Railway Line

There are two sampling stations off-site (SW1 and SW2) that are located north of and in close proximity to the CN Railway line as shown on Figure 1.

The SW1 station is located just northwest of the Osbourne Road crossing, within approximately 15 m of the gate and lights signal system for the CN railway line. Golder staff should never venture south of the swale or this station. If there is any indication that a train is coming (i.e., the signal lights start flashing and the gates come down, along with horn blasting heard from a distance), the Golder sampling team will walk away from the sampling equipment and efforts to a control point along and outside of the southeastern side of the Site's perimeter fence where they will wait until the train has passed.

At the SW2 station, this sampling station has been selected so Golder staff can reach within the receiving swale to take the sample while still being north of the farmer's fence and CN Railway line right-of-way for grabs at this station.

Attachment 1:Surface Water Sampling Field Form
Attachment 2:Golder's HAESP

N.B.
For Attachment 1, see Appendix E-3 in Surface Water Monitoring Program Annual Report.

Attachment 2 is not provided .

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4.0 REFERENCES

Burton, G.A. and Pitt, R.E. (2002). *Stormwater Effects Handbook: A Tool for Watershed Managers, Scientists, and Engineers*, Lewis Publishers. pp. 247-251, 307, 313, 337, 357

E-2 Laboratory Results

Your Project #: 12-1151-0155
Your C.O.C. #: 35941301, 359413-01-01

Attention: Steve Auger
Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2012/06/11

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B283302
Received: 2012/06/06, 15:30

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Total Suspended Solids	4	N/A	2012/06/08	CAM SOP-00428	SM 2540D
Turbidity	4	N/A	2012/06/07	CAM SOP-00417	APHA 2130B

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

MATHURA THIRUKKUMARAN, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

==========

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Total cover pages: 1

Maxxam Job #: B283302
Report Date: 2012/06/11

Golder Associates Ltd
Client Project #: 12-1151-0155

RESULTS OF ANALYSES OF WATER

Maxxam ID		NS3403	NS3404	NS3405	NS3406		
	Units	**SW1**	**SW2**	**SW3**	**SW4**	**RDL**	**QC Batch**
Inorganics							
Total Suspended Solids	mg/L	54	10	<10	<10	10	2873872
Turbidity	NTU	31	5.2	3.5	2.9	0.2	2873914

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Maxxam Job #: B283302
Report Date: 2012/06/11

Golder Associates Ltd
Client Project #: 12-1151-0155

Test Summary

Maxxam ID NS3403 **Collected**
Sample ID SW1 **Shipped**
Matrix Water **Received** 2012/06/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2873872	N/A	2012/06/08	SUBHASHCHANDRA PATEL
Turbidity	TURB	2873914	N/A	2012/06/07	NEIL DASSANAYAKE

Maxxam ID NS3404 **Collected**
Sample ID SW2 **Shipped**
Matrix Water **Received** 2012/06/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2873872	N/A	2012/06/08	SUBHASHCHANDRA PATEL
Turbidity	TURB	2873914	N/A	2012/06/07	NEIL DASSANAYAKE

Maxxam ID NS3405 **Collected**
Sample ID SW3 **Shipped**
Matrix Water **Received** 2012/06/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2873872	N/A	2012/06/08	SUBHASHCHANDRA PATEL
Turbidity	TURB	2873914	N/A	2012/06/07	NEIL DASSANAYAKE

Maxxam ID NS3406 **Collected**
Sample ID SW4 **Shipped**
Matrix Water **Received** 2012/06/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2873872	N/A	2012/06/08	SUBHASHCHANDRA PATEL
Turbidity	TURB	2873914	N/A	2012/06/07	NEIL DASSANAYAKE

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Maxxam Job #: B283302
Report Date: 2012/06/11

Golder Associates Ltd
Client Project #: 12-1151-0155

Package 1	-0.7°C

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

GENERAL COMMENTS

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

Maxxam Job #: B283302
Report Date: 2012/06/11

Golder Associates Ltd
Client Project #: 12-1151-0155

QUALITY ASSURANCE REPORT

			Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
2873872	Total Suspended Solids	2012/06/08	<10	mg/L	NC	25	97	85 - 115
2873914	Turbidity	2012/06/07	<0.2	NTU	NC	20	98	85 - 115

N/A = Not Applicable
RPD = Relative Percent Difference
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B283302

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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Your Project #: 12-1151-0155
Your C.O.C. #: 35941302, 359413-02-01

Attention: Steve Auger
Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2012/07/06

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B297855
Received: 2012/06/29, 14:45

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Total Suspended Solids	5	N/A	2012/07/03	CAM SOP-00428	SM 2540D
Turbidity	5	N/A	2012/07/03	CAM SOP-00417	APHA 2130B

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

Mathura Thirukkumaran, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

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Total cover pages: 1

Maxxam Job #: B297855
Report Date: 2012/07/06

Golder Associates Ltd
Client Project #: 12-1151-0155

Sampler Initials: PH

RESULTS OF ANALYSES OF WATER

Maxxam ID		NZ2697	NZ2698	NZ2698		
Sampling Date		2012/06/27 10:40	2012/06/27 11:50	2012/06/27 11:50		
	Units	**SW-1**	**SW-2**	**SW-2 Lab-Dup**	**RDL**	**QC Batch**
Inorganics						
Total Suspended Solids	mg/L	230	<10	<10	10	2896769
Turbidity	NTU	70	1.7		0.2	2896397

Maxxam ID		NZ2699		NZ2700	NZ2700	NZ2701	NZ2701		
Sampling Date		2012/06/27 12:50		2012/06/27 12:30	2012/06/27 12:30	2012/06/27 13:30	2012/06/27 13:30		
	Units	**SW-3**	**QC Batch**	**SW-4**	**SW-4 Lab-Dup**	**SWMP-W-OUT**	**SWMP-W-OUT Lab-Dup**	**RDL**	**QC Batch**
Inorganics									
Total Suspended Solids	mg/L	<10	2896769	<10		<10	<10	10	2896771
Turbidity	NTU	3.4	2896397	3.2	3.1	6.1		0.2	2896397

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B297855
Report Date: 2012/07/06

Golder Associates Ltd
Client Project #: 12-1151-0155

Sampler Initials: PH

Test Summary

Maxxam ID NZ2697 **Collected** 2012/06/27
Sample ID SW-1 **Shipped**
Matrix Water **Received** 2012/06/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2896769	N/A	2012/07/03	Subhashchandra Patel
Turbidity	TURB	2896397	N/A	2012/07/03	Neil Dassanayake

Maxxam ID NZ2698 **Collected** 2012/06/27
Sample ID SW-2 **Shipped**
Matrix Water **Received** 2012/06/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2896769	N/A	2012/07/03	Subhashchandra Patel
Turbidity	TURB	2896397	N/A	2012/07/03	Neil Dassanayake

Maxxam ID NZ2698 Dup **Collected** 2012/06/27
Sample ID SW-2 **Shipped**
Matrix Water **Received** 2012/06/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2896769	N/A	2012/07/03	Subhashchandra Patel

Maxxam ID NZ2699 **Collected** 2012/06/27
Sample ID SW-3 **Shipped**
Matrix Water **Received** 2012/06/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2896769	N/A	2012/07/03	Subhashchandra Patel
Turbidity	TURB	2896397	N/A	2012/07/03	Neil Dassanayake

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Maxxam Job #: B297855
Report Date: 2012/07/06

Golder Associates Ltd
Client Project #: 12-1151-0155

Sampler Initials: PH

Test Summary

Maxxam ID NZ2700 **Collected** 2012/06/27
Sample ID SW-4 **Shipped**
Matrix Water **Received** 2012/06/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2896771	N/A	2012/07/03	Subhashchandra Patel
Turbidity	TURB	2896397	N/A	2012/07/03	Neil Dassanayake

Maxxam ID NZ2700 Dup **Collected** 2012/06/27
Sample ID SW-4 **Shipped**
Matrix Water **Received** 2012/06/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Turbidity	TURB	2896397	N/A	2012/07/03	Neil Dassanayake

Maxxam ID NZ2701 **Collected** 2012/06/27
Sample ID SWMP-W-OUT **Shipped**
Matrix Water **Received** 2012/06/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2896771	N/A	2012/07/03	Subhashchandra Patel
Turbidity	TURB	2896397	N/A	2012/07/03	Neil Dassanayake

Maxxam ID NZ2701 Dup **Collected** 2012/06/27
Sample ID SWMP-W-OUT **Shipped**
Matrix Water **Received** 2012/06/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2896771	N/A	2012/07/03	Subhashchandra Patel

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Maxxam Job #: B297855
Report Date: 2012/07/06

Golder Associates Ltd
Client Project #: 12-1151-0155

Sampler Initials: PH

Package 1	0.3°C

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

GENERAL COMMENTS

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

Maxxam Job #: B297855
Report Date: 2012/07/06

Golder Associates Ltd
Client Project #: 12-1151-0155

Sampler Initials: PH

QUALITY ASSURANCE REPORT

			Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
2896397	Turbidity	2012/07/03	<0.2	NTU	3.9	20	97	85 - 115
2896769	Total Suspended Solids	2012/07/03	<10	mg/L	NC	25	96	85 - 115
2896771	Total Suspended Solids	2012/07/03	<10	mg/L	NC	25	98	85 - 115

N/A = Not Applicable
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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

Validation Signature Page

Maxxam Job #: B297855

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

Cristina Carriere, Scientific Services

==========

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Your Project #: 12-1151-0155
Your C.O.C. #: 35929301, 359293-01-01

Attention: Steve Auger
Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2012/09/11

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2D7854
Received: 2012/09/07, 16:00

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Total Suspended Solids	8	N/A	2012/09/10	CAM SOP-00428	SM 2540D
Turbidity	8	N/A	2012/09/10	CAM SOP-00417	APHA 2130B

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

Mathura Thirukkumaran, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

==========

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Total cover pages: 1

Maxxam Job #: B2D7854
Report Date: 2012/09/11

Golder Associates Ltd
Client Project #: 12-1151-0155

RESULTS OF ANALYSES OF WATER

Maxxam ID		OT6366	OT6367	OT6368		OT6369	OT6370		
Sampling Date		2012/09/06 11:05	2012/09/06 11:25	2012/09/06 12:02		2012/09/06 11:45	2012/09/06 12:55		
	Units	**SW-1**	**SW-2**	**SW-3**	**QC Batch**	**SW-4**	**W-SWMP-OUT**	**RDL**	**QC Batch**
Inorganics									
Total Suspended Solids	mg/L	68	24	<10	2964171	15	19	10	2964171
Turbidity	NTU	120	27	3.2	2964192	16	9.6	0.2	2965265

Maxxam ID		OT6371	OT6371		OT6372	OT6373	OT6373		
Sampling Date		2012/09/06 10:25	2012/09/06 10:25		2012/09/06 13:00	2012/09/06 12:30	2012/09/06 12:30		
	Units	**W-SWMP-IN**	**W-SWMP-IN Lab-Dup**	**QC Batch**	**E-SWMP-OUT**	**E-SWMP-IN**	**E-SWMP-IN Lab-Dup**	**RDL**	**QC Batch**
Inorganics									
Total Suspended Solids	mg/L	17		2964171	<10	15	14	10	2964171
Turbidity	NTU	11	11	2964192	6.0	6.9		0.2	2965265

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B2D7854
Report Date: 2012/09/11

Golder Associates Ltd
Client Project #: 12-1151-0155

Test Summary

Maxxam ID OT6366 **Collected** 2012/09/06
Sample ID SW-1 **Shipped**
Matrix Water **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2964171	N/A	2012/09/10	Bansari Ray
Turbidity	TURB	2964192	N/A	2012/09/10	Neil Dassanayake

Maxxam ID OT6367 **Collected** 2012/09/06
Sample ID SW-2 **Shipped**
Matrix Water **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2964171	N/A	2012/09/10	Bansari Ray
Turbidity	TURB	2964192	N/A	2012/09/10	Neil Dassanayake

Maxxam ID OT6368 **Collected** 2012/09/06
Sample ID SW-3 **Shipped**
Matrix Water **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2964171	N/A	2012/09/10	Bansari Ray
Turbidity	TURB	2964192	N/A	2012/09/10	Neil Dassanayake

Maxxam ID OT6369 **Collected** 2012/09/06
Sample ID SW-4 **Shipped**
Matrix Water **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2964171	N/A	2012/09/10	Bansari Ray
Turbidity	TURB	2965265	N/A	2012/09/10	Neil Dassanayake

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Maxxam Job #: B2D7854
Report Date: 2012/09/11

Golder Associates Ltd
Client Project #: 12-1151-0155

Test Summary

Maxxam ID OT6370 **Collected** 2012/09/06
Sample ID W-SWMP-OUT **Shipped**
Matrix Water **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2964171	N/A	2012/09/10	Bansari Ray
Turbidity	TURB	2965265	N/A	2012/09/10	Neil Dassanayake

Maxxam ID OT6371 **Collected** 2012/09/06
Sample ID W-SWMP-IN **Shipped**
Matrix Water **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2964171	N/A	2012/09/10	Bansari Ray
Turbidity	TURB	2964192	N/A	2012/09/10	Neil Dassanayake

Maxxam ID OT6371 Dup **Collected** 2012/09/06
Sample ID W-SWMP-IN **Shipped**
Matrix Water **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Turbidity	TURB	2964192	N/A	2012/09/10	Neil Dassanayake

Maxxam ID OT6372 **Collected** 2012/09/06
Sample ID E-SWMP-OUT **Shipped**
Matrix Water **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2964171	N/A	2012/09/10	Bansari Ray
Turbidity	TURB	2965265	N/A	2012/09/10	Neil Dassanayake

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Maxxam Job #: B2D7854
Report Date: 2012/09/11

Golder Associates Ltd
Client Project #: 12-1151-0155

Test Summary

Maxxam ID OT6373 **Collected** 2012/09/06
Sample ID E-SWMP-IN **Shipped**
Matrix Water **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2964171	N/A	2012/09/10	Bansari Ray
Turbidity	TURB	2965265	N/A	2012/09/10	Neil Dassanayake

Maxxam ID OT6373 Dup **Collected** 2012/09/06
Sample ID E-SWMP-IN **Shipped**
Matrix Water **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2964171	N/A	2012/09/10	Bansari Ray

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Maxxam Job #: B2D7854
Report Date: 2012/09/11

Golder Associates Ltd
Client Project #: 12-1151-0155

Package 1	12.0°C

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

GENERAL COMMENTS

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Golder Associates Ltd
Client Project #: 12-1151-0155

Maxxam Job #: B2D7854
Report Date: 2012/09/11

QUALITY ASSURANCE REPORT

			Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
2964171	Total Suspended Solids	2012/09/10	<10	mg/L	NC	25	96	85 - 115
2964192	Turbidity	2012/09/10	<0.2	NTU	0.5	20	94	85 - 115
2965265	Turbidity	2012/09/10	<0.2	NTU	NC	20	93	85 - 115

N/A = Not Applicable
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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Maxxam Job #: B2D7854
Report Date: 2012/09/11

Golder Associates Ltd
Client Project #: 12-1151-0155

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B2D7854

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

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.

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Your Project #: 12-1151-0155
Your C.O.C. #: 37239909, 372399-09-01

Attention: Steve Auger
Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2012/10/03

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2F0998
Received: 2012/09/28, 15:50

Sample Matrix: Water
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Total Suspended Solids	6	N/A	2012/10/01	CAM SOP-00428	SM 2540D
Turbidity	6	N/A	2012/10/03	CAM SOP-00417	APHA 2130B

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

Mathura Thirukkumaran, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

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Total cover pages: 1

Maxxam Job #: B2F0998
Report Date: 2012/10/03

Golder Associates Ltd
Client Project #: 12-1151-0155

RESULTS OF ANALYSES OF WATER

Maxxam ID		PA3557	PA3558		
Sampling Date		2012/09/28	2012/09/28		
	Units	**SW1**	**SW2**	**RDL**	**QC Batch**
Inorganics					
Total Suspended Solids	mg/L	35	15	10	2986809
Turbidity	NTU	5.2	5.9	0.2	2986909

Maxxam ID		PA3559		PA3560		PA3561	PA3562		
Sampling Date		2012/09/28		2012/09/28		2012/09/28	2012/09/28		
	Units	**SW3**	**QC Batch**	**SW4**	**QC Batch**	**E-SWMP-IN**	**E-SWMP-OUT**	**RDL**	**QC Batch**
Inorganics									
Total Suspended Solids	mg/L	<10	2986809	<10	2986826	<10	<10	10	2986809
Turbidity	NTU	4.6	2986909	4.9	2986909	1.4	3.3	0.2	2986909

Maxxam ID		PA3562		
Sampling Date		2012/09/28		
	Units	**E-SWMP-OUT Lab-Dup**	**RDL**	**QC Batch**
Inorganics				
Turbidity	NTU	3.2	0.2	2986909

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B2F0998
Report Date: 2012/10/03

Golder Associates Ltd
Client Project #: 12-1151-0155

Test Summary

Maxxam ID PA3557 **Collected** 2012/09/28
Sample ID SW1 **Shipped**
Matrix Water **Received** 2012/09/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2986809	N/A	2012/10/01	Subhashchandra Patel
Turbidity	TURB	2986909	N/A	2012/10/03	Neil Dassanayake

Maxxam ID PA3558 **Collected** 2012/09/28
Sample ID SW2 **Shipped**
Matrix Water **Received** 2012/09/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2986809	N/A	2012/10/01	Subhashchandra Patel
Turbidity	TURB	2986909	N/A	2012/10/03	Neil Dassanayake

Maxxam ID PA3559 **Collected** 2012/09/28
Sample ID SW3 **Shipped**
Matrix Water **Received** 2012/09/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2986809	N/A	2012/10/01	Subhashchandra Patel
Turbidity	TURB	2986909	N/A	2012/10/03	Neil Dassanayake

Maxxam ID PA3560 **Collected** 2012/09/28
Sample ID SW4 **Shipped**
Matrix Water **Received** 2012/09/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2986826	N/A	2012/10/01	Bansari Ray
Turbidity	TURB	2986909	N/A	2012/10/03	Neil Dassanayake

Maxxam Job #: B2F0998
Report Date: 2012/10/03

Golder Associates Ltd
Client Project #: 12-1151-0155

Test Summary

Maxxam ID PA3561 **Collected** 2012/09/28
Sample ID E-SWMP-IN **Shipped**
Matrix Water **Received** 2012/09/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2986809	N/A	2012/10/01	Subhashchandra Patel
Turbidity	TURB	2986909	N/A	2012/10/03	Neil Dassanayake

Maxxam ID PA3562 **Collected** 2012/09/28
Sample ID E-SWMP-OUT **Shipped**
Matrix Water **Received** 2012/09/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	2986809	N/A	2012/10/01	Subhashchandra Patel
Turbidity	TURB	2986909	N/A	2012/10/03	Neil Dassanayake

Maxxam ID PA3562 Dup **Collected** 2012/09/28
Sample ID E-SWMP-OUT **Shipped**
Matrix Water **Received** 2012/09/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Turbidity	TURB	2986909	N/A	2012/10/03	Neil Dassanayake

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Maxxam Job #: B2F0998
Report Date: 2012/10/03

Golder Associates Ltd
Client Project #: 12-1151-0155

Package 1	6.3°C

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

GENERAL COMMENTS

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

Maxxam Job #: B2F0998
Report Date: 2012/10/03

Golder Associates Ltd
Client Project #: 12-1151-0155

QUALITY ASSURANCE REPORT

			Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
2986809	Total Suspended Solids	2012/10/01	<10	mg/L	NC	25	97	85 - 115
2986826	Total Suspended Solids	2012/10/01	<10	mg/L	5.6	25	99	85 - 115
2986909	Turbidity	2012/10/03	<0.2	NTU	4.3	20	101	85 - 115

N/A = Not Applicable
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B2F0998

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

Cristina Carriere, Scientific Services

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Your Project #: 12-1151-0155
Site#: 12-1151-0155
Your C.O.C. #: 37239901, 372399-01-01

Attention: Steve Auger
Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2012/11/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2H2122
Received: 2012/11/02, 13:25

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Total Suspended Solids	6	N/A	2012/11/05	CAM SOP-00428	SM 2540D
Total Suspended Solids	1	N/A	2012/11/07	CAM SOP-00428	SM 2540D
Turbidity	3	N/A	2012/11/02	CAM SOP-00417	APHA 2130B
Turbidity	4	N/A	2012/11/03	CAM SOP-00417	APHA 2130B

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

Mathura Thirukkumaran, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

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Total cover pages: 1

Maxxam Job #: B2H2122
Report Date: 2012/11/08

Golder Associates Ltd
Client Project #: 12-1151-0155

RESULTS OF ANALYSES OF WATER

Maxxam ID		PL7770		PL7771	PL7772		PL7773	PL7773		
Sampling Date		2012/11/01 09:02		2012/11/01 09:26	2012/11/01 10:05		2012/11/01 10:25	2012/11/01 10:25		
	Units	**SW1**	**QC Batch**	**SW2**	**SW3**	**QC Batch**	**SW4**	**SW4 Lab-Dup**	**RDL**	**QC Batch**
Inorganics										
Total Suspended Solids	mg/L	20	3028558	17	<10	3025284	10		10	3025284
Turbidity	NTU	37	3024723	28	10	3024722	9.7	9.2	0.2	3024723

Maxxam ID		PL7774			PL7775		PL7776	PL7776		
Sampling Date		2012/11/01 10:50			2012/11/01 11:10		2012/11/01 11:45	2012/11/01 11:45		
	Units	**E-SWMP-IN**	**RDL**	**QC Batch**	**W-SWMP-IN**	**RDL**	**W-SWMP-OUT**	**W-SWMP-OUT Lab-Dup**	**RDL**	**QC Batch**
Inorganics										
Total Suspended Solids	mg/L	1400	50	3025284	120	10	31		10	3025284
Turbidity	NTU	910	2	3024723	270	1	55	53	0.2	3024722

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B2H2122
Report Date: 2012/11/08

Golder Associates Ltd
Client Project #: 12-1151-0155

Test Summary

Maxxam ID PL7770 **Collected** 2012/11/01
Sample ID SW1 **Shipped**
Matrix Water **Received** 2012/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3028558	N/A	2012/11/07	Gurpreet Kaur
Turbidity	TURB	3024723	N/A	2012/11/02	Neil Dassanayake

Maxxam ID PL7771 **Collected** 2012/11/01
Sample ID SW2 **Shipped**
Matrix Water **Received** 2012/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3025284	N/A	2012/11/05	Bansari Ray
Turbidity	TURB	3024722	N/A	2012/11/03	Neil Dassanayake

Maxxam ID PL7772 **Collected** 2012/11/01
Sample ID SW3 **Shipped**
Matrix Water **Received** 2012/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3025284	N/A	2012/11/05	Bansari Ray
Turbidity	TURB	3024722	N/A	2012/11/03	Neil Dassanayake

Maxxam ID PL7773 **Collected** 2012/11/01
Sample ID SW4 **Shipped**
Matrix Water **Received** 2012/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3025284	N/A	2012/11/05	Bansari Ray
Turbidity	TURB	3024723	N/A	2012/11/02	Neil Dassanayake

Maxxam Job #: B2H2122
Report Date: 2012/11/08

Golder Associates Ltd
Client Project #: 12-1151-0155

Test Summary

Maxxam ID PL7773 Dup
Sample ID SW4
Matrix Water

Collected 2012/11/01
Shipped
Received 2012/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Turbidity	TURB	3024723	N/A	2012/11/02	Neil Dassanayake

Maxxam ID PL7774
Sample ID E-SWMP-IN
Matrix Water

Collected 2012/11/01
Shipped
Received 2012/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3025284	N/A	2012/11/05	Bansari Ray
Turbidity	TURB	3024723	N/A	2012/11/02	Neil Dassanayake

Maxxam ID PL7775
Sample ID W-SWMP-IN
Matrix Water

Collected 2012/11/01
Shipped
Received 2012/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3025284	N/A	2012/11/05	Bansari Ray
Turbidity	TURB	3024722	N/A	2012/11/03	Neil Dassanayake

Maxxam ID PL7776
Sample ID W-SWMP-OUT
Matrix Water

Collected 2012/11/01
Shipped
Received 2012/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3025284	N/A	2012/11/05	Bansari Ray
Turbidity	TURB	3024722	N/A	2012/11/03	Neil Dassanayake

Maxxam Job #: B2H2122
Report Date: 2012/11/08

Golder Associates Ltd
Client Project #: 12-1151-0155

Test Summary

Maxxam ID PL7776 Dup
Sample ID W-SWMP-OUT
Matrix Water

Collected 2012/11/01
Shipped
Received 2012/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Turbidity	TURB	3024722	N/A	2012/11/03	Neil Dassanayake

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Maxxam Job #: B2H2122
Report Date: 2012/11/08

Golder Associates Ltd
Client Project #: 12-1151-0155

Package 1	0.7°C

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

GENERAL COMMENTS

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

Maxxam Job #: B2H2122
Report Date: 2012/11/08

Golder Associates Ltd
Client Project #: 12-1151-0155

QUALITY ASSURANCE REPORT

			Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3024722	Turbidity	2012/11/03	0.2, RDL=0.2	NTU	4.1	20	100	85 - 115
3024723	Turbidity	2012/11/02	0.3, RDL=0.2	NTU	5.0	20	97	85 - 115
3025284	Total Suspended Solids	2012/11/05	<10	mg/L	NC	25	98	85 - 115
3028558	Total Suspended Solids	2012/11/07	<10	mg/L	3.2	25	98	85 - 115

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B2H2122

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

Cristina Carriere, Scientific Services

==========

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Your Project #: 12-1151-0155
Site#: 12-1151-0155
Site Location: COVANTA
Your C.O.C. #: 39047403, 390474-03-01

Attention: Steve Auger
Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2013/03/19

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B337362
Received: 2013/03/13, 13:50

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Total Suspended Solids	8	N/A	2013/03/14	CAM SOP-00428	SM 2540D
Turbidity	8	N/A	2013/03/13	CAM SOP-00417	APHA 2130B

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

Mathura Thirukkumaran, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

==========

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Total cover pages: 1

Maxxam Job #: B337362
Report Date: 2013/03/19

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVANTA

RESULTS OF ANALYSES OF WATER

Maxxam ID		QV4337		QV4338	QV4339		
Sampling Date		2013/03/12 10:24		2013/03/12 11:05	2013/03/12 11:43		
	Units	**SW1**	**QC Batch**	**SW2**	**SW3**	**RDL**	**QC Batch**
Inorganics							
Total Suspended Solids	mg/L	20	3150621	<10	64	10	3150998
Turbidity	NTU	25	3150321	14	32	0.2	3150321

Maxxam ID		QV4340	QV4341	QV4342	QV4343	QV4344		
Sampling Date		2013/03/12 11:20	2013/03/12 09:25	2013/03/12 10:34	2013/03/12 09:40	2013/03/12 10:35		
	Units	**SW4**	**E-SWMP-IN**	**E-SWMP-OUT**	**W-SWMP-IN**	**W-SWMP-OUT**	**RDL**	**QC Batch**
Inorganics								
Total Suspended Solids	mg/L	53	19	16	29	20	10	3150998
Turbidity	NTU	27	41	35	86	94	0.2	3150321

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B337362
Report Date: 2013/03/19

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVANTA

Test Summary

Maxxam ID QV4337 **Collected** 2013/03/12
Sample ID SW1 **Shipped**
Matrix Water **Received** 2013/03/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3150621	N/A	2013/03/14	Subhashchandra Patel
Turbidity	TURB	3150321	N/A	2013/03/13	Neil Dassanayake

Maxxam ID QV4338 **Collected** 2013/03/12
Sample ID SW2 **Shipped**
Matrix Water **Received** 2013/03/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3150998	N/A	2013/03/14	Gurpreet Kaur
Turbidity	TURB	3150321	N/A	2013/03/13	Neil Dassanayake

Maxxam ID QV4339 **Collected** 2013/03/12
Sample ID SW3 **Shipped**
Matrix Water **Received** 2013/03/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3150998	N/A	2013/03/14	Gurpreet Kaur
Turbidity	TURB	3150321	N/A	2013/03/13	Neil Dassanayake

Maxxam ID QV4340 **Collected** 2013/03/12
Sample ID SW4 **Shipped**
Matrix Water **Received** 2013/03/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3150998	N/A	2013/03/14	Gurpreet Kaur
Turbidity	TURB	3150321	N/A	2013/03/13	Neil Dassanayake

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Maxxam Job #: B337362
Report Date: 2013/03/19

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVANTA

Test Summary

Maxxam ID QV4341 **Collected** 2013/03/12
Sample ID E-SWMP-IN **Shipped**
Matrix Water **Received** 2013/03/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3150998	N/A	2013/03/14	Gurpreet Kaur
Turbidity	TURB	3150321	N/A	2013/03/13	Neil Dassanayake

Maxxam ID QV4342 **Collected** 2013/03/12
Sample ID E-SWMP-OUT **Shipped**
Matrix Water **Received** 2013/03/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3150998	N/A	2013/03/14	Gurpreet Kaur
Turbidity	TURB	3150321	N/A	2013/03/13	Neil Dassanayake

Maxxam ID QV4343 **Collected** 2013/03/12
Sample ID W-SWMP-IN **Shipped**
Matrix Water **Received** 2013/03/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3150998	N/A	2013/03/14	Gurpreet Kaur
Turbidity	TURB	3150321	N/A	2013/03/13	Neil Dassanayake

Maxxam ID QV4344 **Collected** 2013/03/12
Sample ID W-SWMP-OUT **Shipped**
Matrix Water **Received** 2013/03/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3150998	N/A	2013/03/14	Gurpreet Kaur
Turbidity	TURB	3150321	N/A	2013/03/13	Neil Dassanayake

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Maxxam Job #: B337362
Report Date: 2013/03/19

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVANTA

Package 1	0.0°C

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

GENERAL COMMENTS

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

Maxxam Job #: B337362
Report Date: 2013/03/19

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVANTA

QUALITY ASSURANCE REPORT

			Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3150321	Turbidity	2013/03/13	<0.2	NTU	NC	20	93	85 - 115
3150621	Total Suspended Solids	2013/03/14	<10	mg/L	NC	25	99	85 - 115
3150998	Total Suspended Solids	2013/03/14	<10	mg/L	NC	25	99	85 - 115

N/A = Not Applicable
RPD = Relative Percent Difference
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B337362

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Cristina Carriere, Scientific Services

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Your Project #: 12-1151-0155
Site#: 12-1151-0155
Site Location: COVENTA
Your C.O.C. #: 18690801, 186908-01-01

Attention: Steve Auger
Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2013/03/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B341242
Received: 2013/03/20, 12:12

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Total Suspended Solids	8	N/A	2013/03/25	CAM SOP-00428	SM 2540D
Turbidity	8	N/A	2013/03/20	CAM SOP-00417	APHA 2130B

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

Mathura Thirukkumaran, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

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Total cover pages: 1

Maxxam Job #: B341242
Report Date: 2013/03/27

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVENTA

RESULTS OF ANALYSES OF WATER

Maxxam ID		QX3116	QX3117	QX3118	QX3119		
Sampling Date		2013/03/19 10:00	2013/03/19 11:15	2013/03/19 11:30	2013/03/19 10:30		
	Units	**SW 1**	**SW 2**	**SW 3**	**SW 4**	**RDL**	**QC Batch**
Inorganics							
Total Suspended Solids	mg/L	14	14	<10	<10	10	3159727
Turbidity	NTU	22	14	9.2	6.3	0.2	3157363

Maxxam ID		QX3120	QX3121	QX3122	QX3122	QX3123		
Sampling Date		2013/03/19 09:30	2013/03/19 10:15	2013/03/19 09:40	2013/03/19 09:40	2013/03/19 10:15		
	Units	**E-SWMP-IN**	**E-SWMP-OUT**	**W-SWMP-IN**	**W-SWMP-IN Lab-Dup**	**W-SWMP-OUT**	**RDL**	**QC Batch**
Inorganics								
Total Suspended Solids	mg/L	<10	<10	13	13	<10	10	3159727
Turbidity	NTU	2.0	4.5	21		5.6	0.2	3157363

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B341242
Report Date: 2013/03/27

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVENTA

Test Summary

Maxxam ID QX3116 **Collected** 2013/03/19
Sample ID SW 1 **Shipped**
Matrix Water **Received** 2013/03/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3159727	N/A	2013/03/25	Bansari Ray
Turbidity	TURB	3157363	N/A	2013/03/20	Neil Dassanayake

Maxxam ID QX3117 **Collected** 2013/03/19
Sample ID SW 2 **Shipped**
Matrix Water **Received** 2013/03/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3159727	N/A	2013/03/25	Bansari Ray
Turbidity	TURB	3157363	N/A	2013/03/20	Neil Dassanayake

Maxxam ID QX3118 **Collected** 2013/03/19
Sample ID SW 3 **Shipped**
Matrix Water **Received** 2013/03/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3159727	N/A	2013/03/25	Bansari Ray
Turbidity	TURB	3157363	N/A	2013/03/20	Neil Dassanayake

Maxxam ID QX3119 **Collected** 2013/03/19
Sample ID SW 4 **Shipped**
Matrix Water **Received** 2013/03/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3159727	N/A	2013/03/25	Bansari Ray
Turbidity	TURB	3157363	N/A	2013/03/20	Neil Dassanayake

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

Maxxam Job #: B341242
Report Date: 2013/03/27

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVENTA

Test Summary

Maxxam ID QX3120 **Collected** 2013/03/19
Sample ID E-SWMP-IN **Shipped**
Matrix Water **Received** 2013/03/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3159727	N/A	2013/03/25	Bansari Ray
Turbidity	TURB	3157363	N/A	2013/03/20	Neil Dassanayake

Maxxam ID QX3121 **Collected** 2013/03/19
Sample ID E-SWMP-OUT **Shipped**
Matrix Water **Received** 2013/03/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3159727	N/A	2013/03/25	Bansari Ray
Turbidity	TURB	3157363	N/A	2013/03/20	Neil Dassanayake

Maxxam ID QX3122 **Collected** 2013/03/19
Sample ID W-SWMP-IN **Shipped**
Matrix Water **Received** 2013/03/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3159727	N/A	2013/03/25	Bansari Ray
Turbidity	TURB	3157363	N/A	2013/03/20	Neil Dassanayake

Maxxam ID QX3122 Dup **Collected** 2013/03/19
Sample ID W-SWMP-IN **Shipped**
Matrix Water **Received** 2013/03/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3159727	N/A	2013/03/25	Bansari Ray

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Maxxam Job #: B341242
Report Date: 2013/03/27

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVENTA

Test Summary

Maxxam ID QX3123
Sample ID W-SWMP-OUT
Matrix Water

Collected 2013/03/19
Shipped
Received 2013/03/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3159727	N/A	2013/03/25	Bansari Ray
Turbidity	TURB	3157363	N/A	2013/03/20	Neil Dassanayake

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

Maxxam Job #: B341242
Report Date: 2013/03/27

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVENTA

Package 1	-2.0°C

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

GENERAL COMMENTS

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

Maxxam Job #: B341242
Report Date: 2013/03/27

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVENTA

QUALITY ASSURANCE REPORT

			Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3157363	Turbidity	2013/03/21	<0.2	NTU	6.6	20	97	85 - 115
3159727	Total Suspended Solids	2013/03/25	<10	mg/L	NC	25	100	85 - 115

N/A = Not Applicable
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B341242

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

Cristina Carriere, Scientific Services

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Your Project #: 12-1151-0155
Site#: 12-1151-0155
Site Location: COVANTA
Your C.O.C. #: 40044101, 400441-01-01

Attention: Steve Auger
Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2013/04/15

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B352111
Received: 2013/04/09, 12:30

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Total Suspended Solids	7	N/A	2013/04/11	CAM SOP-00428	SM 2540D
Total Suspended Solids	1	N/A	2013/04/12	CAM SOP-00428	SM 2540D
Turbidity	8	N/A	2013/04/09	CAM SOP-00417	APHA 2130B

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

Mathura Thirukkumaran, Project Manager
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5757

==========

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Total cover pages: 1

Maxxam Job #: B352111
Report Date: 2013/04/15

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVANTA
Sampler Initials: JH

RESULTS OF ANALYSES OF WATER

Maxxam ID		RC5413	RC5414	RC5415		
Sampling Date		2013/04/08	2013/04/08	2013/04/08		
	Units	**E-SWMP-IN**	**E-SWMP-OUT**	**W-SWMP-IN**	**RDL**	**QC Batch**
Inorganics						
Total Suspended Solids	mg/L	12	13	<10	10	3176824
Turbidity	NTU	12	23	15	0.2	3176030

Maxxam ID		RC5416		RC5417	RC5418	RC5419	RC5420		
Sampling Date		2013/04/08		2013/04/08	2013/04/08	2013/04/08	2013/04/08		
	Units	**W-SWMP-OUT**	**QC Batch**	**SW1**	**SW2**	**SW3**	**SW4**	**RDL**	**QC Batch**
Inorganics									
Total Suspended Solids	mg/L	19	3177215	<10	<10	<10	<10	10	3176824
Turbidity	NTU	30	3176030	5.2	4.4	1.5	1.8	0.2	3176030

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B352111
Report Date: 2013/04/15

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVANTA
Sampler Initials: JH

Test Summary

Maxxam ID RC5413 **Collected** 2013/04/08
Sample ID E-SWMP-IN **Shipped**
Matrix Water **Received** 2013/04/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3176824	N/A	2013/04/11	Subhashchandra Patel
Turbidity	TURB	3176030	N/A	2013/04/09	Neil Dassanayake

Maxxam ID RC5414 **Collected** 2013/04/08
Sample ID E-SWMP-OUT **Shipped**
Matrix Water **Received** 2013/04/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3176824	N/A	2013/04/11	Subhashchandra Patel
Turbidity	TURB	3176030	N/A	2013/04/09	Neil Dassanayake

Maxxam ID RC5415 **Collected** 2013/04/08
Sample ID W-SWMP-IN **Shipped**
Matrix Water **Received** 2013/04/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3176824	N/A	2013/04/11	Subhashchandra Patel
Turbidity	TURB	3176030	N/A	2013/04/09	Neil Dassanayake

Maxxam ID RC5416 **Collected** 2013/04/08
Sample ID W-SWMP-OUT **Shipped**
Matrix Water **Received** 2013/04/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3177215	N/A	2013/04/12	Bansari Ray
Turbidity	TURB	3176030	N/A	2013/04/09	Neil Dassanayake

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Maxxam Job #: B352111
Report Date: 2013/04/15

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVANTA
Sampler Initials: JH

Test Summary

Maxxam ID RC5417 **Collected** 2013/04/08
Sample ID SW1 **Shipped**
Matrix Water **Received** 2013/04/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3176824	N/A	2013/04/11	Subhashchandra Patel
Turbidity	TURB	3176030	N/A	2013/04/09	Neil Dassanayake

Maxxam ID RC5418 **Collected** 2013/04/08
Sample ID SW2 **Shipped**
Matrix Water **Received** 2013/04/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3176824	N/A	2013/04/11	Subhashchandra Patel
Turbidity	TURB	3176030	N/A	2013/04/09	Neil Dassanayake

Maxxam ID RC5419 **Collected** 2013/04/08
Sample ID SW3 **Shipped**
Matrix Water **Received** 2013/04/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3176824	N/A	2013/04/11	Subhashchandra Patel
Turbidity	TURB	3176030	N/A	2013/04/09	Neil Dassanayake

Maxxam ID RC5420 **Collected** 2013/04/08
Sample ID SW4 **Shipped**
Matrix Water **Received** 2013/04/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3176824	N/A	2013/04/11	Subhashchandra Patel
Turbidity	TURB	3176030	N/A	2013/04/09	Neil Dassanayake

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

Maxxam Job #: B352111
Report Date: 2013/04/15

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVANTA
Sampler Initials: JH

Package 1	-0.7°C

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

GENERAL COMMENTS

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

Maxxam Job #: B352111
Report Date: 2013/04/15

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVANTA
Sampler Initials: JH

QUALITY ASSURANCE REPORT

			Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3176030	Turbidity	2013/04/09	<0.2	NTU	11.7	20	99	85 - 115
3176824	Total Suspended Solids	2013/04/11	<10	mg/L	NC	25	94	85 - 115
3177215	Total Suspended Solids	2013/04/12	<10	mg/L	NC	25	98	85 - 115

N/A = Not Applicable
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B352111

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

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.

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E-3 *In Situ* Measurements

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Cavanta
Site Location: SW1

Date: June 5, 2012
Sampled By: Devon Witheridge, Peter Hebert + Jessica Hanschell

SITE DATA

Time	11:55am
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	Yes / (No)
Flow Rate	

minimal flow

Location ID	SW1

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

YSI PRN

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
11:55	7.21	629 µS 0.55mS	7.15		17.44 16.1		clear	wetland mush

SAMPLING RECORD

Sampling Method:
Sample ID:
Sample Depth:
Dup taken? / Dup ID:
Time Sampled:

Sample Appearance:
Colour:
Turbidity: Low / Medium / High
Odour:

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:
Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155

Client: Coventa

Site Location: SW2

Date: June 5th 2012

Sampled By: Devon Witheridge, Peter Hebert, Jessica Hanschell

SITE DATA

Time	1:00
Surveyed reference point	
Water Depth at Staff Gauge (m)	10.8cm
Stream Width (m)	
Stagnant	Yes / (No)
Flow Rate	

Location ID	SW2

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

YSI PEN

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
1:00	89.7%	60245	7.49		15.39		Clear	ND
		0.55 m/s	7.38		15.4			

SAMPLING RECORD

Sampling Method: _____

Sample ID: _____

Sample Depth: _____

Dup taken? / Dup ID: _____

Time Sampled: _____

Sample Appearance:

Colour: _____

Turbidity: Low / Medium / High

Odour: _____

Depth ↓

Sample Container and Preservation:

_____

_____

_____

_____

OBSERVATIONS

Weather Conditions:

Temperature: _____

Current Precipitation: _____

Precipitation of past 24 / 48 hrs: _____

Notes: _____

_____

_____

_____

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155

Client: Cavanta

Site Location: SW3 Tully creek.

Date: 5th June 2012

Sampled By: Jessica Hanschell + Peter Hebert

SITE DATA

Time	2:30pm
Surveyed reference point	
Water Depth at Staff Gauge (m)	11.6cm
Stream Width (m)	
Stagnant	Yes / (No)
Flow Rate	

Location ID	SW3. way pt #30

Coordinates:
N 43° 52.554
W 75° 45.937

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#_____)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or (µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
YSI → 2:30pm	11.84 mg/L. 125.4%	1174	8.06		17.53°C.		clear mainly. a bit of red soil colour but not suspended in water.	No odour
→ Pen		0.55	7.60		16.8°C.			

SAMPLING RECORD

Sampling Method: _____

Sample ID: _____

Sample Depth: _____

Dup taken? / Dup ID: _____

Time Sampled: _____

Depth.

Sample Appearance:

Colour: _____

Turbidity: Low / Medium / High

Odour: _____

Sample Container and Preservation:

_____

_____

_____

_____

OBSERVATIONS

Weather Conditions:

Temperature: _____

Current Precipitation: _____

Precipitation of past 24 / 48 hrs: _____

Notes: _____

_____

_____

_____

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155

Client: Covanta

Site Location: SW 4

Date: 5th June 2012

Sampled By: Jessica Hanschell + Peter Hebert

SITE DATA

Time	3:05pm
Surveyed reference point	
Water Depth at Staff Gauge (m)	10.2cm
Stream Width (m)	
Stagnant	Yes / (No)
Flow Rate	

Location ID	SW 4

Coordinates:
way pt. 31
N43°52.498'
W78°45.970'

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (# _____)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or (µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
3:05 pm	11.33 mg/L 121.5 %	1042 µS.	7.92		18.64		Identical [illegible] to upstream. Mostly clear.	No odour
Pen →		0.50 ms	7.70		18.00			
					17-10 second per reading			

SAMPLING RECORD

Sampling Method: _____

Sample Depth: _____

Time Sampled: _____

Sample ID: _____

Dup taken? / Dup ID: _____

Sample Appearance:

Colour: _____

Odour: _____

Turbidity: Low / Medium / High

Sample Container and Preservation:

Depth 1

OBSERVATIONS

Weather Conditions:

Temperature: _____

Current Precipitation: _____

Precipitation of past 24 / 48 hrs: _____

Notes: _____

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Darlington

Date: June 27, 2012
Sampled By: PH / TH

SITE DATA

Time	10:40
Surveyed reference point	SW-1
Water Depth at Staff Gauge (m)	5 cm
Stream Width (m)	1.5m
Stagnant	(Yes) / No
Flow Rate	

Location ID	SW-1

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	SW-1

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or (µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10:55		551	5.78		18.0		Slightly brown	None

SAMPLING RECORD

Sampling Method: Hand
Sample Depth:
Time Sampled: 10.40

Sample ID:
Dup taken? / Dup ID: Yes SW1 Dup

Sample Appearance:
Colour:
Odour:

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:
Notes:

SITE SKETCH

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Darlington

Date: June 27, 2012
Sampled By: PH / JH

SITE DATA

Time	11:55pm
Surveyed reference point	
Water Depth at Staff Gauge (m)	8cm
Stream Width (m)	0.75m
Stagnant	(Yes) / No — minimal
Flow Rate	

Location ID	SW-2
Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or (µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
11:55		641	6.85		17.8		little colour	None

SAMPLING RECORD

Sampling Method: Hand
Sample Depth:
Time Sampled: 11:55

Sample ID: SW-2
Dup taken? / Dup ID: Yes, SW-2 DUP

Sample Appearance:
Colour: Very little
Odour: None

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:
Notes:

SITE SKETCH

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Confidential
Site Location: Darlington

Date: June 27, 2012
Sampled By: PH/JH

SITE DATA

Time	12:50
Surveyed reference point	
Water Depth at Staff Gauge (m)	10cm.
Stream Width (m)	0.3m
Stagnant	Yes (No)
Flow Rate	

Location ID	SW-3

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or (µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
12:50		1130	7.19		17.0			

SAMPLING RECORD

Sampling Method: By Hand
Sample Depth:
Time Sampled: 12:50

Sample ID: SW-3
(Dup taken?) / Dup ID: SW3-Dup
yes.

Sample Appearance:
Colour: None.
Odour: None

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes:

SITE SKETCH

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Cavanta
Site Location: Dachingten

Date: June 27, 2012
Sampled By: PH / JH

SITE DATA

Time	12:25
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	0.5m
Stagnant	Yes (No)
Flow Rate	

Location ID: SW-4

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or (µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
12:25		998	6.64		15.9		None.	None.

SAMPLING RECORD

Sampling Method: By Hand.
Sample Depth: 20cm.
Time Sampled: 12:25
Sample Appearance: Colour: normal colour.
Odour:

Sample ID: SW-4
Dup taken? / Dup ID: Yes. SW4-Dup.

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:
Notes:

SITE SKETCH

4

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Darlington

Date: June 27, 2012
Sampled By: PH / JH

SITE DATA

Time	1:30pm
Surveyed reference point	
Water Depth at Staff Gauge (m)	20cm
Stream Width (m)	0.5m
Stagnant	Yes / (No) (Being pumped out)
Flow Rate	

Location ID: SWMP-W-Out

Logger Number	
Loger Downcad Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or (µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
1:30		640	7.47		20.8		Slightly turbid grey, but clear mostly	None.

SAMPLING RECORD

Sampling Method: By Hand.
Sample Depth:
Time Sampled: 1:30pm

Sample ID: SWMP-W-Out
(Dup taken?) / Dup ID: Yes - SWMP-W-Out-Dup

Sample Appearance:
Colour: Grey, Slightly turbid, but mostly clear
Odour: None.

Turbidity: Low / (Medium) / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes:

SITE SKETCH

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Cavanta
Site Location: Clarington

Date: Sept 6th 2012
Sampled By: PH / JH

SITE DATA

Time	11:05
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	1 m (lots of vegetation)
Stagnant	Yes / (No)
Flow Rate	Slow flow

Location ID	SW-1

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS) or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
		0.27	7.73		23.1		Slightly brown	Slightly swampy / organic odour

SAMPLING RECORD

Sampling Method: By hand
Sample Depth: 3 in
Time Sampled: 11:05am.

Sample ID:
Dup taken? / Dup ID: Yes SW-1-DUP

Sample Appearance:
Colour: Slightly brown
Odour: Slight. (turbid) organic odour.

Turbidity: Low / (Medium) / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington.

Date: Sept 6th 2012
Sampled By: PH / JH

SITE DATA

Time	11:25
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	1.5
Stagnant	Yes / (No)
Flow Rate	0.5ft from bankfull

Location ID	SW-2

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS) or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
11:25		0.48	7.74		22.3		Slightly brown	None

SAMPLING RECORD

Sampling Method: Hand
Sample Depth: 8-10"
Time Sampled: 11:25
Sample Appearance:
Colour: Transparent slightly brown
Odour: none

Sample ID:
Dup taken? / Dup ID: Yes SW-2-DUP

Turbidity: Low / (Medium) / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:
Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Cuanta
Site Location: SW-3

Date: 6th Sept 2012
Sampled By: JH/PH

SITE DATA

Time	12:02.
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	2 ft.
Stagnant	Yes / (No)
Flow Rate	Slow.

Location ID	SW-3

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (# _____)
Photo Location	

-Peter.

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS) or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
12:02		1.03	7.94		20.1	low-med	Clear brown	mild organic - grassy -

SAMPLING RECORD

Sampling Method: By hand.
Sample Depth: 6"
Time Sampled: 12:02

Sample ID: SW-3
Dup taken? / Dup ID: Yes SW-3-Dup

Sample Appearance:
Colour: clear brown.
Odour: None (mild organic)

Turbidity: (Low) / (Medium) / High
low-med.

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Coventa
Site Location: _____

Date: Sept 11th
Sampled By: JH/PH

SITE DATA

Time	11:45
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	2 m.
Stagnant	Yes / (No)
Flow Rate	low

Location ID	SW-4

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (# _____)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS or µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
11:45		0.64	7.79		21.2°C		Lightbrown	None.

SAMPLING RECORD

Sampling Method: By Hand
Sample Depth: 2.5 ft.
Time Sampled: 11:45 am.

Sample ID: _____
Dup taken? / Dup ID: Yes SW-4Dup

Sample Appearance:
Colour: Light brown
Odour: None

Turbidity: Low / (Medium) / High

Sample Container and Preservation:

_____

_____

_____

_____

OBSERVATIONS

Weather Conditions:
Temperature: _____
Current Precipitation: _____
Precipitation of past 24 / 48 hrs: _____

Notes: _____

_____

_____

_____

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Darlington

Date: Sept 5th 2012
Sampled By: PH / JH

SITE DATA

Time	10:25am
Surveyed reference point	Near to inlet
Water Depth at Staff Gauge (m)	
Stream Width (m)	Pond.
Stagnant	(Yes) / No
Flow Rate	—

Location ID	W-SWMP-IN

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS or µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10:20am		0.7	8.20		24°C		Gray turbid.	None.

SAMPLING RECORD

Sampling Method: Swing pole
Sample Depth: 2ft.
Time Sampled: 10:20am.

Sample ID: W-SWMP-IN
Dup taken? / Dup ID: Yes W-SWMP-IN-DUP

Sample Appearance:
Colour: Slightly turbid
Odour: None

Turbidity: Low / (Medium) / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: 30°C
Current Precipitation: None
Precipitation of past 24 / 48 hrs:

Notes:

SITE SKETCH

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Coventa.
Site Location: E-SWMP-IN

Date: 6th Sept 2012
Sampled By: PH / JH

SITE DATA

Time	12:30
Surveyed reference point	
Water Depth at Staff Gauge (m)	2.5ft.
Stream Width (m)	Pond.
Stagnant	(Yes) / No
Flow Rate	—

Location ID	E-SWMP-IN
Logger Number	
Loger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS) or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
		0.46	8.33		26.8°C.		Grey turbid	None -

SAMPLING RECORD

Sampling Method: Swing pole
Sample Depth:
Time Sampled: 12:30

Sample ID:
Dup taken? / Dup ID: Yes E-SWMP-IN-DUP

Sample Appearance:
Colour: Grey, turbid.
Odour: None.

Turbidity: Low / (Medium) / (High)
med-high.

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155

Client: Coventa

Site Location: _____

Date: 6th Sept

Sampled By: PH / JH.

SITE DATA

Time	1:04
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	Yes / (No)
Flow Rate	Flow - slow Out.

Location ID	W-SUMP-OUT

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (# _____)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS) or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
1:04		0.65	8.14		25.4		Grey, clear, turbid.	None

SAMPLING RECORD

Sampling Method: By Hand

Sample Depth: 5".

Time Sampled: 1:04.

Sample Appearance:
Colour: Clear Grey turbid.

Odour: None

Sample ID: _____

Dup taken? / Dup ID: Yes W-SUMP-OUT.

Turbidity: (Low) / Medium / High

Sample Container and Preservation:

_____

_____

_____

_____

OBSERVATIONS

Weather Conditions:

Temperature: _____

Current Precipitation: _____

Precipitation of past 24 / 48 hrs: _____

Notes: _____

_____

_____

_____

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Coventa
Site Location: _____

Date: 6th Sept 2012
Sampled By: PH / JH.

SITE DATA

Time	1:00
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	Yes / (No)
Flow Rate	flowing out - slow.

* Gravity flow (no pump)

Location ID	E-SWMP-OUT
Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (# _____)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS or µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
1:00		0.45	8.33		24.4°c		Clear, turbid. Grey.	None.

SAMPLING RECORD

Sampling Method: By hand.
Sample Depth: 3"
Time Sampled: 1:00pm
Sample Appearance: Colour: Clear Grey, turbid
Odour: None

Sample ID: _____
Dup taken? / Dup ID: Yes E-SWMP-OUT

Turbidity: (Low) / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: _____
Current Precipitation: _____
Precipitation of past 24 / 48 hrs: _____

Notes: _____

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Cavnota
Site Location: ~~Barrington~~ Clarington

Date: 28th Sept, 2012
Sampled By: PH / JH

SITE DATA

Time	10:21 am
Surveyed reference point	
Water Depth at Staff Gauge (m)	~~5 inches~~
Stream Width (m)	
Stagnant	(Yes) / No
Flow Rate	minimal.

Location ID	SW1

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10:21		615 µS	7.40		14.7		Clear	None

SAMPLING RECORD

Sampling Method: bottle fill - by hand.
Sample Depth: ~ 5 inches
Time Sampled:

Sample ID: SW1
Dup taken? / Dup ID: SW1-Dup

Sample Appearance:
Colour: Clear
Odour: None.

Turbidity: (Low) / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: ~ 18°C.
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes: Sampled closest to the culvert - water level very low, needed to sample from small pond by culvert.

SITE SKETCH

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: 28th Sept, 2012
Sampled By: Jessica Honschell, Peter Hebert

SITE DATA

Time	10:40
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	1.5m
Stagnant	Yes / (No)
Flow Rate	

Location ID	SW2

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (# _____)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or (µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10:40		678	7.41		13.8		None	None

SAMPLING RECORD

Sampling Method: Hand
Sample Depth: 6"
Time Sampled: 10:43

Sample ID: SW2
Dup taken? / Dup ID: SW2-Dup

Sample Appearance:
Colour: Clear
Odour: None

Turbidity: (Low) / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes: Build-up of organic film upstream of channel obstruction

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: 28th September, 2012
Sampled By: Jessica Hanschell, Peter Hebert

SITE DATA

Time	11:11am
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	60 cm.
Stagnant	Yes / (No)
Flow Rate	low

Location ID	SW# 3

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or (µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
11:11am		1185	7.70.		12.6		Clear, to brown tinge	no smell.

SAMPLING RECORD

Sampling Method: Swing pole.
Sample Depth: 1ft.
Time Sampled: 11:11am

Sample ID: SW# 3
Dup taken? / Dup ID: SW# 3 - Dup

Sample Appearance:
Colour: Clear to brown tinge.
Odour: none

Turbidity: (Low) / Medium / High

Sample Container and Preservation:

Sampling from a shaded area.

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: 28th Sept, 2012
Sampled By: Jessica Hanschell, Peter Hebert

SITE DATA

Time	10:59 am.
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	2 m.
Stagnant	(Yes) / No
Flow Rate	

Location ID	SW #4

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (# _____)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or (µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10.59am		1052	7.38		13.2°C		Clear	None.

SAMPLING RECORD

Sampling Method: Swing pole.
Sample Depth: 1.5ft.
Time Sampled: 10:59am

Sample ID: SW #4
Dup taken? / Dup ID: SW #4 Dup

Sample Appearance:
Colour: Clear.
Odour: None

Turbidity: (Low) / Medium / High

Sample Container and Preservation:
Sampled is a deep location. (very little-to no-flow).

OBSERVATIONS

Weather Conditions:
Temperature: _____
Current Precipitation: _____
Precipitation of past 24 / 48 hrs: _____

Notes: _____

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Cvanta
Site Location: Clarington

Date: Sept. 28, 2012
Sampled By: PH / JH

SITE DATA

Time	10:02 AM
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	(Yes) / No
Flow Rate	

Location ID: E-SWMP-IN

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (# Y)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or (µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10:02		515	8.16		15.7°C		Clear Brown Tinge	None

SAMPLING RECORD

Sampling Method: Sampling Pole
Sample Depth: 0.6m
Time Sampled: 10:02 AM

Sample ID: E-SWMP-IN
Dup taken? / Dup ID: E-SWMP-IN DUP

Sample Appearance:
Colour: Clear / Brown Tinge
Odour: No Odour

Turbidity (Low) / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation: No
Precipitation of past 24 / 48 hrs: None

Notes:

SITE SKETCH

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: Sept. 28, 2012
Sampled By: PH / JH

SITE DATA

Time	11:45 AM
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	Yes / (No)
Flow Rate	

Location ID: E-SWMP-OUT

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (# Y)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or (µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
11:45		500	8.86		15.8		None	None

SAMPLING RECORD

Sampling Method: Hand
Sample Depth: 15 cm
Time Sampled: 11:45 AM

Sample ID: E-SWMP-OUT
Dup taken? / Dup ID: E-SWMP-OUT DUP

Sample Appearance:
Colour: None
Odour: None

Turbidity: Low / (Medium) / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation: None
Precipitation of past 24 / 48 hrs: None

Notes:

SITE SKETCH

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: Nov. 1 2012
Sampled By: _____

SITE DATA

Time	9:02
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	1m
Stagnant	Yes (No)
Flow Rate	

Location ID	SW1

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (# _____)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or (µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
9:02		408	8.25		7.9		Clear	None

SAMPLING RECORD

Sampling Method: Hand
Sample Depth: 250mm
Time Sampled: 9:02

Sample ID: SW1
Dup taken? / Dup ID: SW1-Dup

Sample Appearance:
Colour: Clear
Odour: No

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: 8°C
Current Precipitation: Yes - started Monday
Precipitation of past 24 / 48 hrs: _____

Notes: _____

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: Nov 1 2012
Sampled By: PH/NG

SITE DATA

Time	9:26
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	1.5m
Stagnant	Yes / No
Flow Rate	

Location ID	SW2

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
9:26		440	8.06		8.3		Greyish	None

SAMPLING RECORD

Sampling Method: Hand
Sample Depth: 25cm
Time Sampled: 9:26

Sample ID: SW2
Dup taken? / Dup ID: SW3 - Dup

Sample Appearance:
Colour: No sheen / slight grey
Odour: None

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: 9°C
Current Precipitation: Yes
Precipitation of past 24 / 48 hrs:
Notes: Foam observed just D/S

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: Nov 1 2012
Sampled By: PH/NG

SITE DATA

Time	10:19
Surveyed reference point	
Water Depth at Staff Gauge (m)	0.3
Stream Width (m)	0.75 constric 3m wide
Stagnant	Yes / No
Flow Rate	

Location ID	SW3
Logger Number	
Loger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
		771	8.35		8.6		Clear	None

SAMPLING RECORD

Sampling Method: Pole
Sample Depth:
Time Sampled:

Sample ID: SW3
Dup taken? / Dup ID: ~~Sample~~ 11-DUP

Sample Appearance:
Colour: Clear / Noshen
Odour: None

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: 10°C
Current Precipitation: Yes - trickle
Precipitation of past 24 / 48 hrs:
Notes: Flat vegetation in channel

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: Nov. 1 2012
Sampled By: DH/NG

SITE DATA

Time	9:45
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	3m
Stagnant	Yes / (No)
Flow Rate	

Location ID	SW4

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or (µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
		747	8.31		6.5		clear	None

SAMPLING RECORD

Sampling Method: Pole
Sample Depth: 40cm
Time Sampled:

Sample ID: SW4
Dup taken? / Dup ID: SW4-Dup

Sample Appearance:
Colour: Clear
Odour: None

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:
Notes: culvert impassable @ tracks by foot

FACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: Nov 1 2012
Sampled By: PT / AG

SITE DATA

Time	11:15
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	Yes / No
Flow Rate	

Location ID: SW1-IN

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
11:10		415	6.80		8.0		Brown	None

SAMPLING RECORD

Sampling Method: P.C
Sample Depth:
Time Sampled: 15cm
Sample Appearance:
Colour: Brown
Odour: No

Sample ID: SW1-IN
Dup taken? / Dup ID: SW1-DUP

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:
Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: Nov. 1 2012
Sampled By: PH/NG

SITE DATA

Time	11:45
Surveyed reference point	
Water Depth at Staff Gauge (m)	15cm
Stream Width (m)	N/A
Stagnant	Yes / No - Minimal flow
Flow Rate	

Location ID	W-SWMP-OUT
Logger Number	
Loger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
11:45		457	8.62		9.2		light brown	No

SAMPLING RECORD

Sampling Method: Hand
Sample Depth: 10cm
Time Sampled:
Sample Appearance: Colour: light brown
Odour:

Sample ID: W-SWMP-OUT
Dup taken? / Dup ID: ~~Sept Dup~~ 11-DUP

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes: West pond discharging via gravity flow - Oct. 31 and Nov 1 - Water too turbid to discharge via pump - will let settle

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: Nov 1 2012
Sampled By: PH/NG

SITE DATA

Time	10:50
Surveyed reference point	
Water Depth at Staff Gauge (m)	10cm
Stream Width (m)	
Stagnant	Yes / (No)
Flow Rate	

Location ID: E-SWP-1N

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (# _____)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
		494	9.8		8.4		Brown	None

SAMPLING RECORD

Sampling Method: Pole
Sample Depth: _____
Time Sampled: 10:53
Sample Appearance:
Colour: Brown
Odour: None

Sample ID: E-SWP-1N
Dup taken? / Dup ID: ~~Sub-Dup~~ N-DUP

Turbidity: Low / Medium / (High)

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: _____
Current Precipitation: _____
Precipitation of past 24 / 48 hrs: _____

Notes: _____

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: 12th March, 2013
Sampled By: Jessica Hanschell + Devon Withebridge.

SITE DATA

Time	9:20
Surveyed reference point	
Water Depth at Staff Gauge (m)	0.5m
Stream Width (m)	Pond
Stagnant	(Yes) / No
Flow Rate	-

Location ID: E-SWMP-IN

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
9:20am		1.28mS	5.83		2.4°C.	0.66pH.	Slight grey.	None.

SAMPLING RECORD

Sampling Method: Swing Pole.
Sample Depth: 0.5m
Time Sampled: 9.20 am

Sample ID: E-SWMP-IN
Dup taken? / Dup ID: E SWMP-IN Dup

Sample Appearance:
Colour: Slightly grey
Odour: None.

Turbidity: Low / (Medium) / High

Ice covered mostly

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: March 12, 2013
Sampled By: Jessica + Devon

SITE DATA

Time	10:35
Surveyed reference point	
Water Depth at Staff Gauge (m)	4" deep.
Stream Width (m)	
Stagnant	(Yes) / No
Flow Rate	

Location ID	E-SWMP-OUT

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10:34		1.27mS	8.04		2.2°C.	0.68ppt	Slightly grey -	None.

↳ did not stabilize - constantly going up → went up to 9.07 still going up.

SAMPLING RECORD

Sampling Method: By hand.
Sample Depth: 3 - 4" deep.
Time Sampled: 10:34.

Sample ID: E-SWMP-OUT
Dup taken? / Dup ID: E-SWMP-OUT Dup

Sample Appearance:
Colour: Slight grey
Odour: None.

Turbidity: Low / (Medium) / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:
Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: 12 March, 2013
Sampled By: Jessica + Devon

SITE DATA

Time	9.40
Surveyed reference point	
Water Depth at Staff Gauge (m)	0.75m
Stream Width (m)	
Stagnant	(Yes) / No
Flow Rate	—

Location ID	W-SWMP-IN

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
9.		0.37ms	5.94		1.6°C		Slight Grey	No

SAMPLING RECORD

Sampling Method: Sampling Pole
Sample Depth:
Time Sampled:

Sample ID: W-SWMP-IN
Dup taken? / Dup ID: SW Dup

Sample Appearance:
Colour: Slight Grey
Odour: No

Turbidity: Low / (Medium) / High

Ice covered mostly

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: March 12, 2013
Sampled By: Jessica + Devon

SITE DATA

Time	10:35
Surveyed reference point	
Water Depth at Staff Gauge (m)	~5" dep
Stream Width (m)	
Stagnant	(Yes) / No
Flow Rate	

Location ID	W-SWMP-OUT

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10:35							Slightly grey	None.

SAMPLING RECORD

Sampling Method: By hand.
Sample Depth: ~5"
Time Sampled: 10:35

Sample ID: W-SWMP-OUT
Dup taken? / Dup ID: W-SWMP-OUT-Dup

Sample Appearance:
Colour: Slightly grey
Odour: None.

Turbidity: Low / (Medium) / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: 12 March, 2013
Sampled By: Jessica+Bevon

SITE DATA

Time	10:24
Surveyed reference point	
Water Depth at Staff Gauge (m)	6-7"
Stream Width (m)	~1m.
Stagnant	Yes / (No)
Flow Rate	flowing medium.

Location ID	SW1

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10:24		0.98mS	6.28		2.8°C	0.53 NTU	Clear.	None.

SAMPLING RECORD

Sampling Method: Pole sample
Sample Depth:
Time Sampled: 10:24.

Sample ID: SW1
Dup taken? / Dup ID: SW1-Dup

Sample Appearance:
Colour: Clear
Odour: None

Turbidity: (Low) / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:
Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: 12 March, 2013
Sampled By: J. Hanschell, D. Withbridge.

SITE DATA

Time	1105
Surveyed reference point	
Water Depth at Staff Gauge (m)	11 & 11
Stream Width (m)	
Stagnant	Yes / (No)
Flow Rate	flowing

Location ID	SW2

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
11:05		1.0ms	8.00		2.7°C.	0.54ppt	clear None	ND

SAMPLING RECORD

Sampling Method: Swing Pole
Sample ID: SW2
Sample Depth:
Dup taken? / Dup ID: SW2-Dup
Time Sampled:

Sample Appearance:
Colour:
Odour:

Turbidity: Low / Medium / High
Med-to-low

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: March 12 - 2013
Sampled By: Jessica + Devon

SITE DATA

Time	11:43
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	Yes / (No)
Flow Rate	Flowing fast.

Location ID	SW3

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (# 3)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
11:43		0.39 mS	7.70		1.4°C	0.21 ppt	None	None -

SAMPLING RECORD

Sampling Method: Pole sample
Sample Depth:
Time Sampled:

Sample ID: SW3
Dup taken? / Dup ID: SW3 - Dup

Sample Appearance:
Colour:
Odour:

Turbidity: Low / (Medium) / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: 12 March, 2013
Sampled By: Jessica + Devon

SITE DATA

Time	11:05
Surveyed reference point	
Water Depth at Staff Gauge (m)	1m -
Stream Width (m)	2m
Stagnant	Yes / (No)
Flow Rate	Fast Flow

Location ID	SW4

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
11:05		0.14 mS	7.76		1.4°C	0.21 NTU	None	none.

SAMPLING RECORD

Sampling Method: Swing Pole.
Sample ID: SW4
Sample Depth:
Dup taken? / Dup ID: SW4-Dup
Time Sampled:

Sample Appearance:
Colour:
Odour:

Turbidity: (Low) / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature:
Current Precipitation:
Precipitation of past 24 / 48 hrs:

Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: MAR 19/2013 2017
Sampled By: DEVON/[illegible]

SITE DATA

Time	9:25
Surveyed reference point	
Water Depth at Staff Gauge (m)	0.5 m (IN POND)
Stream Width (m)	N/A
Stagnant	Yes / No
Flow Rate	N/A

Location ID	E-SWMP-IN

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
9:30		1.97 mS	6.85		4.4	NONE/ CLEAR	NONE	NO

SAMPLING RECORD

Sampling Method: GRAB
Sample Depth: NEAR SURFACE
Time Sampled: 9:25 AM

Sample ID: SW E-SWMP-IN
Dup taken? / Dup ID: SW Dup

Sample Appearance:
Colour: CLEAR
Odour:

Turbidity: (Low) / Medium / High

Sample Container and Preservation:
4 x 500 mL FOR TURBIDITY/TSS (NO PRESERVATIVE)

OBSERVATIONS

Weather Conditions:
Temperature: 0°C OVERCAST / LT SNOW
Current Precipitation: TRACE
Precipitation of past 24 / 48 hrs: SNOW/FREEZING RAIN/RAIN OVERNIGHT
Notes: PUMP ACTIVE @ DISCHARGE MANIFOLD OUTLET

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: MAR 19/20, 2012
Sampled By: DAWN / NICK

SITE DATA

Time	9.40
Surveyed reference point	
Water Depth at Staff Gauge (m)	0.5 m (IN POND)
Stream Width (m)	N/A
Stagnant	(Yes) / No
Flow Rate	N/A

Location ID	SW. W-SWMP-IN
Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS or µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
9:40		0.36	7.35		0.8	NOTE	NONE	NONE

pot - 0.19

SAMPLING RECORD

Sampling Method: GRAB (WADING)
Sample Depth: NEAR SURFACE
Time Sampled: 9:40

Sample ID: SW W-SWMP-IN
Dup taken? / Dup ID: SW Dup NO

Sample Appearance:
Colour: CLEAR
Odour:

Turbidity: (Low) / Medium / High

Sample Container and Preservation:
4 x 500 mL SAMPLING BOTTLES (NO PRESERVATIVE)

OBSERVATIONS

Weather Conditions:
Temperature: 0°C
Current Precipitation: TRACE (LT. SNOW)
Precipitation of past 24 / 48 hrs: SNOW / FREEZING / RAIN OVERNIGHT
Notes: NO ACTIVE DISCHARGE AT THIS LOCATION

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: Mar. 19 2013
Sampled By: NG / DW

SITE DATA

Time	1015
Surveyed reference point	
Water Depth at Staff Gauge (m)	5-10cm
Stream Width (m)	12"
Stagnant	Yes / (No)
Flow Rate	Mod.

Location ID: E-Swmp-out

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS or µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
1015		2.01	7.74		5.2		N	N

? 1.08 ppt

SAMPLING RECORD

Sampling Method: Grab
Sample Depth: near surface
Time Sampled: 1015 am
Sample Appearance:
Colour: clear
Odour: none

Sample ID: E Swmp-out
Dup taken? / Dup ID: SW Dup
E-swmp-out
Turbidity: (Low) / Medium / High

Sample Container and Preservation:
4x 500ml Plastic (no preservative)

OBSERVATIONS

Weather Conditions:
Temperature: 0°C
Current Precipitation: none
Precipitation of past 24 / 48 hrs: Snow / Fr. Rain / Rain - overnight.

Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: Mar. 19 2013
Sampled By: NG / DW

SITE DATA

Time	1015
Surveyed reference point	
Water Depth at Staff Gauge (m)	5-10cm
Stream Width (m)	12"
Stagnant	(Yes) / No
Flow Rate	not observed.

Location ID: W-SWMP-OUT

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS or µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
1015	✓	1.94	8.16	✓	5.0	LOW	N	N

ppt.
1.04

SAMPLING RECORD

Sampling Method: Grab.
Sample Depth: near surface.
Time Sampled: 1015

Sample ID: W-SWMP-OUT
Dup taken? / Dup ID: SW Dup
W-SWMP-OUT

Sample Appearance:
Colour: NONE
Odour: NONE

Turbidity: (Low) / Medium / High

Sample Container and Preservation:
4x 500ml Plastic (no preservative

OBSERVATIONS

Weather Conditions:
Temperature: 0°C
Current Precipitation: none
Precipitation of past 24 / 48 hrs: Snow / fr. Rain / Rain-overnight

Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: 19/03/2013 2013
Sampled By: NICK & DEVON

SITE DATA

Time	10:00
Surveyed reference point	
Water Depth at Staff Gauge (m)	≈ 0.3 m
Stream Width (m)	≈ 0.7m
Stagnant	Yes / (No)
Flow Rate	MODERATE

Location ID	SW1

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS or µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10:00		5.33	7.12		1.5	NOW	LT. BROWN / CLEAR	NONE

ppt = 2.87

SAMPLING RECORD

Sampling Method: GRAB
Sample Depth: NEAR SURFACE
Time Sampled: 10:00

Sample ID: SW1
Dup taken? / Dup ID: SW1 - Dup

Sample Appearance:
Colour: CLEAR / LT. BROWN
Odour: NONE

Turbidity: (Low) / Medium / High

Sample Container and Preservation:
4 x 500 mL SAMPLING BOTTLES (NO PRESERVATIVE)

OBSERVATIONS

Weather Conditions:
Temperature: 0°
Current Precipitation: NONE
Precipitation of past 24 / 48 hrs: SNOW/RR. RAIN / SNOW OVERNIGHT

Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: MAR 19/2013 2013
Sampled By: NICK & DEVON

SITE DATA

Time	11:15
Surveyed reference point	
Water Depth at Staff Gauge (m)	5cm TO ICE / 15-20cm TOTAL
Stream Width (m)	1.0 - 1.2m
Stagnant	Yes / (No)
Flow Rate	MODERATE

Location ID	SW2

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS) or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
11:15	-	3.46	7.43	-	0.2	NONE/LOW	CLEAR	NONE

1.97 ppt

SAMPLING RECORD

Sampling Method: GRAB
Sample Depth: NEAR SURFACE
Time Sampled: 11:15

Sample ID: SW2
Dup taken? / Dup ID: SW2 Dup

Sample Appearance:
Colour: CLEAR
Odour: NONE

Turbidity: (Low) / Medium / High

Sample Container and Preservation:
4 x 500 mL SAMPLING BOTTLES (NO PRESERVATIVES)

OBSERVATIONS

Weather Conditions:
Temperature: ~0°C
Current Precipitation: NONE
Precipitation of past 24 / 48 hrs: SNOW / FR. RAIN / RAIN OVERNIGHT
Notes: STREAM MOSTLY ICED OVER WITH 5 cm WATER DEPTH (FLOWING) OVER THE CENTRE LINE AT SAMPLING LOCATION HAS NO ICE, APPROXIMATELY 15-30 cm DEEP

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: MAR 19 / 2013
Sampled By: NICK / DEVON

SITE DATA

Time	11:30
Surveyed reference point	
Water Depth at Staff Gauge (m)	0.2 - 0.4m
Stream Width (m)	~1.5m
Stagnant	Yes / No
Flow Rate	MODERATE - FAST

Location ID	SW3

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
11:30	-	1.42	7.64		0.5		None	None

? 0.76 pt.

SAMPLING RECORD

Sampling Method: GRAB
Sample Depth: NEAR SURFACE
Time Sampled: 11:30

Sample ID: SW3
Dup taken? / Dup ID: SW3 Dup

Sample Appearance:
Colour: CLEAR / LT. BROWN
Odour: NONE

Turbidity: Low / Medium / High

Sample Container and Preservation:
4 x 500 mL SAMPLING BOTTLES (NO PRESERVATIVE)

OBSERVATIONS

Weather Conditions:
Temperature: 2 °C
Current Precipitation: NONE
Precipitation of past 24 / 48 hrs: SNOW / FREEZING RAIN OVERNIGHT
Notes: ICE ON BANKS OF SAMPLING LOCATION

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: MAR 19/2013 2013
Sampled By: NICK & DEVON

SITE DATA

Time	10:50
Surveyed reference point	
Water Depth at Staff Gauge (m)	0.30 to 0.5m
Stream Width (m)	2 m
Stagnant	Yes / (No)
Flow Rate	MODERATE

Location ID	SW4

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS or µS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10:50		1.34	7.69		1.2	NONE/LOW	NONE/LT BROWN	NONE

0.772 ppt

SAMPLING RECORD

Sampling Method: GRAB
Sample Depth: NEAR SURFACE
Time Sampled: 10:50

Sample ID: SW4
Dup taken? / Dup ID: SW Dup

Sample Appearance:
Colour: CLEAR/LT. BROWN
Odour: NONE

Turbidity: (Low) / Medium / High

Sample Container and Preservation:
4x 500 mL SAMPLE BOTTLES, NO PRESERVATIVE

OBSERVATIONS

Weather Conditions:
Temperature: ~0°C
Current Precipitation: NONE
Precipitation of past 24 / 48 hrs: SNOW/FR. RAIN/RAIN OVERNIGHT
Notes: SAMPLED FROM MID-LINE

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: April 8, 2013
Sampled By: Devon + Jessica

SITE DATA

Time	9:45
Surveyed reference point	
Water Depth at Staff Gauge (m)	~1m.
Stream Width (m)	
Stagnant	(Yes) / No Pond.
Flow Rate	

Location ID	E-SWMP-IN
Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
9:45		2.16mS	5.59		45.8F 7.6C	1	None.	None

SAMPLING RECORD

Sampling Method: Sampling Pole.
Sample Depth: ~1m.
Time Sampled: 9:45

Sample ID: E SWMP-IN
Dup taken? / Dup ID: E SWMP-IN Dup

Sample Appearance:
Colour: Clear
Odour: None.

Turbidity: (Low) / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: 5°C overcast
Current Precipitation: None
Precipitation of past 24 / 48 hrs:

Notes: Pumping - controlled discharge - at time of sampling. Pond dept lower. Foam accumulation on banks.

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: April 8, 2013
Sampled By: Devon, Jessica

SITE DATA

Time	10:30 am
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	Yes / (No)
Flow Rate	Flowing - Pumping at

Location ID	E-SWMP-OUT

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10:30 am		2.14 ms.	7.08		7.7°C.	1.16 ppt.	Clear	None.

SAMPLING RECORD

Sampling Method: By hand grab
Sample Depth: 6"
Time Sampled: 10:30 am

Sample ID: E SWMP-OUT
Dup taken? / Dup ID: E-SWMP-OUT Dup

Sample Appearance:
Colour:
Odour:

Turbidity: (Low) / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: 8°C overcast
Current Precipitation: None
Precipitation of past 24 / 48 hrs:
Notes: Controlled discharge

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: April 8, 2013
Sampled By: Devon, Jessica

SITE DATA

Time	10:07
Surveyed reference point	
Water Depth at Staff Gauge (m)	0.5m.
Stream Width (m)	
Stagnant	(Yes) / No
Flow Rate	

Location ID	EW SWMP-IN

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10:07		0.65 ms	6.27		7.7°C.	0.35ppt	Clear	None

SAMPLING RECORD

Sampling Method: Sampling pole.
Sample Depth: ~0.5m.
Time Sampled: 10:07am

Sample ID: W SW MP-IN
Dup taken? / Dup ID: W SW MP-IN Dup

Sample Appearance:
Colour: Clear
Odour: None.

Turbidity: (Low) / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: 6°C overcast
Current Precipitation: None
Precipitation of past 24 / 48 hrs:
Notes: Pond level low, no foam or vegetation. No controlled discharge

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: April 8th, 2013
Sampled By: Devon, Jessica

SITE DATA

Time	10:30am
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	(Yes) / No
Flow Rate	

Location ID: W-SWMP-OUT

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10:30am.		2.15mS	6.98		7.8°C	1.15ppt	Clear	None.
		1.78mS	7.07pH		9.5°C	0.96ppt	Cloudy Brown.	

SAMPLING RECORD

Sampling Method: By hand grab.
Sample Depth:
Time Sampled: 10:30am.

Sample ID: W SWMP-OUT
Dup taken? / Dup ID: W SWMP-OUT Dup

Sample Appearance:
Colour:
Odour:

Turbidity: (Low) / Medium / High -- 1st Sample
Med-High - 2nd Sample

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: 6°C overcast
Current Precipitation: None.
Precipitation of past 24 / 48 hrs:
Notes: Not discharging, clear
Started discharging halfway. - ~~After~~ cloudy brown colour
no odour

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: April 8, 2013
Sampled By: Devon, Jessica

SITE DATA

Time	10:45am
Surveyed reference point	
Water Depth at Staff Gauge (m)	~3"
Stream Width (m)	~0.5m.
Stagnant	Yes / No - slowflow
Flow Rate	

Location ID	SW1

Logger Number	
Loger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
10:45am		1.96 mS	7.16		6.7°C	1.05ppt	Clear to slight organic brown	None.

SAMPLING RECORD

Sampling Method: By hand grab.
Sample Depth: ~3"
Time Sampled: 10:45am

Sample ID: SW1
Dup taken? / Dup ID: SW1 Dup

Sample Appearance:
Colour: Clear to slight brown tinge.
Odour: None.

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: ~9°C.
Current Precipitation: None.
Precipitation of past 24 / 48 hrs:
Notes: Organic Sheen no fat + small bit of debri.

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: April 8, 2013
Sampled By: Devon, Jessica

SITE DATA

Time	11am
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	2-3" ~0.25m
Stagnant	Yes / (No)
Flow Rate	very low

Location ID	SW2

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
11am		1.73mS	7.30		6.7C	0.93ppt	light organic brown (relatively clear)	None

SAMPLING RECORD

Sampling Method: By hand grab
Sample Depth:
Time Sampled:

Sample ID: SW2
Dup taken? / Dup ID: SW2 Dup

Sample Appearance:
Colour:
Odour:

Turbidity: (Low) / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: ~8°C, overcast
Current Precipitation: None.
Precipitation of past 24 / 48 hrs:
Notes: Very low flow
Organic debris present

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: April 8, 2013
Sampled By: Devon, Jessica

SITE DATA

Time	11:34
Surveyed reference point	
Water Depth at Staff Gauge (m)	~1ft.
Stream Width (m)	~2m.
Stagnant	Yes / (No)
Flow Rate	

Location ID	SW3

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (# 6)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS) or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
		0.86	7.54		7.7	0.60 ppt	clear	None.

SAMPLING RECORD

Sampling Method: Sampling pole.
Sample Depth:
Time Sampled:

Sample ID: SW3
Dup taken? / Dup ID: SW3-Dup

Sample Appearance:
Colour:
Odour:

Turbidity: (Low) / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: 8°C · overcast
Current Precipitation: None.
Precipitation of past 24 / 48 hrs:

Notes:

SURFACE WATER SAMPLING RECORD FORM

Golder Associates

PROJECT INFORMATION

Project Number: 12-1151-0155
Client: Covanta
Site Location: Clarington

Date: April 8, 2013
Sampled By: Devon, Jessica

SITE DATA

Time	11:45
Surveyed reference point	
Water Depth at Staff Gauge (m)	1.0ft
Stream Width (m)	1.5m
Stagnant	Yes / (No)
Flow Rate	High

Location ID	SW4

Logger Number	
Loger Download Time	
Photos Taken	(Yes) / No (# 3)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS) or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity ppt	Colour	Odour
11:47		0.82	7.79		7.6	0.43	clear	None

SAMPLING RECORD

Sampling Method: sampling pole
Sample Depth:
Time Sampled:

Sample Appearance:
Colour:
Odour:

Sample ID: SW4
Dup taken? / Dup ID: SW4 Dup

Turbidity: (Low) / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
Temperature: 8°C overcast
Current Precipitation: None
Precipitation of past 24 / 48 hrs:

Notes: