



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

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')

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, as 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 its 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 be 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
Site#: 12-1151-0155
Site Location: COVANTA
Your C.O.C. #: 40712001, 407120-01-01

Attention: Steve Auger

Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2013/06/06**CERTIFICATE OF ANALYSIS**

MAXXAM JOB #: B385297
Received: 2013/06/03, 13:00

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Total Suspended Solids	7	N/A	2013/06/05	CAM SOP-00428	SM 2540D
Turbidity	7	N/A	2013/06/05	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.

Keshani Vijh, Project Manager
Email: KVijh@maxxam.ca
Phone# (905) 817-5700

=====

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.

Total cover pages: 1

Page 1 of 7

Maxxam Job #: B385297
 Report Date: 2013/06/06

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

RESULTS OF ANALYSES OF WATER

Maxxam ID		RT1884	RT1884		RT1885		RT1886		
Sampling Date		2013/05/31	2013/05/31		2013/05/31		2013/05/31		
	Units	E-SWMP-IN	E-SWMP-IN Lab-Dup	QC Batch	W-SWMP-IN	RDL	W-SWMP-OUT	RDL	QC Batch
Inorganics									
Total Suspended Solids	mg/L	<10		3235803	17	10	92	10	3235800
Turbidity	NTU	20	20	3235825	130	0.2	460	1	3235825

Maxxam ID		RT1887		RT1888	RT1889		RT1890		
Sampling Date		2013/05/31		2013/05/31	2013/05/31		2013/05/31		
	Units	SW1	QC Batch	SW2	SW3	QC Batch	SW4	RDL	QC Batch
Inorganics									
Total Suspended Solids	mg/L	<10	3235800	10	<10	3235803	<10	10	3235800
Turbidity	NTU	10	3235825	9.0	2.5	3235825	2.9	0.2	3235825

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B385297
 Report Date: 2013/06/06

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

Test Summary

Maxxam ID RT1884
Sample ID E-SWMP-IN
Matrix Water

Collected 2013/05/31
Shipped
Received 2013/06/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3235803	N/A	2013/06/05	Subhashchandra Patel
Turbidity	TURB	3235825	N/A	2013/06/05	Neil Dassanayake

Maxxam ID RT1884 Dup
Sample ID E-SWMP-IN
Matrix Water

Collected 2013/05/31
Shipped
Received 2013/06/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Turbidity	TURB	3235825	N/A	2013/06/05	Neil Dassanayake

Maxxam ID RT1885
Sample ID W-SWMP-IN
Matrix Water

Collected 2013/05/31
Shipped
Received 2013/06/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3235800	N/A	2013/06/05	Subhashchandra Patel
Turbidity	TURB	3235825	N/A	2013/06/05	Neil Dassanayake

Maxxam ID RT1886
Sample ID W-SWMP-OUT
Matrix Water

Collected 2013/05/31
Shipped
Received 2013/06/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3235800	N/A	2013/06/05	Subhashchandra Patel
Turbidity	TURB	3235825	N/A	2013/06/05	Neil Dassanayake

Maxxam Job #: B385297
Report Date: 2013/06/06

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

Test Summary

Maxxam ID RT1887
Sample ID SW1
Matrix Water

Collected 2013/05/31
Shipped
Received 2013/06/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3235800	N/A	2013/06/05	Subhashchandra Patel
Turbidity	TURB	3235825	N/A	2013/06/05	Neil Dassanayake

Maxxam ID RT1888
Sample ID SW2
Matrix Water

Collected 2013/05/31
Shipped
Received 2013/06/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3235803	N/A	2013/06/05	Subhashchandra Patel
Turbidity	TURB	3235825	N/A	2013/06/05	Neil Dassanayake

Maxxam ID RT1889
Sample ID SW3
Matrix Water

Collected 2013/05/31
Shipped
Received 2013/06/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3235803	N/A	2013/06/05	Subhashchandra Patel
Turbidity	TURB	3235825	N/A	2013/06/05	Neil Dassanayake

Maxxam ID RT1890
Sample ID SW4
Matrix Water

Collected 2013/05/31
Shipped
Received 2013/06/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3235800	N/A	2013/06/05	Subhashchandra Patel
Turbidity	TURB	3235825	N/A	2013/06/05	Neil Dassanayake

Maxxam Job #: B385297
Report Date: 2013/06/06

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

Package 1	0.3°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Maxxam Job #: B385297
 Report Date: 2013/06/06

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

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Method Blank		RPD		QC Standard	
			Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3235800	Total Suspended Solids	2013/06/05	<10	mg/L	NC	25	98	85 - 115
3235803	Total Suspended Solids	2013/06/05	<10	mg/L	NC	25	96	85 - 115
3235825	Turbidity	2013/06/05	<0.2	NTU	1.7	20	95	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.

Validation Signature Page

Maxxam Job #: B385297

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




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

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

Your Project #: 12-1151-0155
Site#: 12-1151-0155
Site Location: COVANTA
Your C.O.C. #: 40712002, 407120-02-01

Attention: Steve Auger

Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2013/07/03

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B3A1602**

Received: 2013/06/26, 15:20

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Total Suspended Solids	7	N/A	2013/06/27	CAM SOP-00428	SM 2540D
Total Suspended Solids	1	N/A	2013/07/02	CAM SOP-00428	SM 2540D
Turbidity	8	N/A	2013/06/27	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.

Keshani Vijh, Project Manager
Email: KVijh@maxxam.ca
Phone# (905) 817-5700

=====
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Total cover pages: 1

Maxxam Job #: B3A1602
 Report Date: 2013/07/03

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

RESULTS OF ANALYSES OF WATER

Maxxam ID		SA9367	SA9367	SA9368	SA9369	SA9370		
Sampling Date		2013/06/25	2013/06/25	2013/06/25	2013/06/25	2013/06/25		
	Units	E-SWMP-IN	E-SWMP-IN Lab-Dup	E-SWMP-OUT	W-SWMP-IN	W-SWMP-OUT	RDL	QC Batch
Inorganics								
Total Suspended Solids	mg/L	<10	<10	<10	12	87	10	3262105
Turbidity	NTU	8.2		9.3	19	52	0.2	3262218

Maxxam ID		SA9371		SA9372		SA9373	SA9374		
Sampling Date		2013/06/25		2013/06/25		2013/06/25	2013/06/25		
	Units	SW1	QC Batch	SW2	QC Batch	SW3	SW4	RDL	QC Batch
Inorganics									
Total Suspended Solids	mg/L	81	3262105	10	3266072	28	44	10	3262105
Turbidity	NTU	28	3262218	7.7	3262218	17	20	0.2	3262218

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B3A1602
 Report Date: 2013/07/03

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

Test Summary

Maxxam ID SA9367
Sample ID E-SWMP-IN
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam ID SA9367 Dup
Sample ID E-SWMP-IN
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John

Maxxam ID SA9368
Sample ID E-SWMP-OUT
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam ID SA9369
Sample ID W-SWMP-IN
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam Job #: B3A1602
 Report Date: 2013/07/03

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

Test Summary

Maxxam ID SA9370
Sample ID W-SWMP-OUT
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam ID SA9371
Sample ID SW1
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam ID SA9372
Sample ID SW2
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3266072	N/A	2013/07/02	Gurpreet Kaur
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam ID SA9373
Sample ID SW3
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam Job #: B3A1602
 Report Date: 2013/07/03

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

Test Summary

Maxxam ID SA9374
Sample ID SW4
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam Job #: B3A1602
Report Date: 2013/07/03

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

Package 1	7.3°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Maxxam Job #: B3A1602
 Report Date: 2013/07/03

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

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Method Blank		RPD		QC Standard	
			Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3262105	Total Suspended Solids	2013/06/27	<10	mg/L	NC	25	98	85 - 115
3262218	Turbidity	2013/06/27	0.3, RDL=0.2	NTU	10.9	20	97	85 - 115
3266072	Total Suspended Solids	2013/07/02	<10	mg/L	1.7	25	97	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 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.

Validation Signature Page

Maxxam Job #: B3A1602

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




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

=====
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INVOICE INFORMATION: Company Name: #25670 Golder Associates Ltd Contact Name: Central Accounting Address: 140 Renfrew Dr Suite 110 Markham ON L3R 6B3 Phone: (905)475-2625 Fax: (905)475-5257 Email: jwellman@golder.com, LeAnh_Huynh@golder.com		REPORT INFORMATION (if differs from invoice): Company Name: Contact Name: Steve Auger Address: Phone: (905)475-5591 x6030 Fax: Email: Steve_Auger@golder.com		PROJECT INFORMATION: Quotation #: B02761 P.O. #: Project #: 12-1151-0155 Project Name: <i>CONSUMERS Canada</i> Site #: Sampled By: <i>DW/EM</i>		Laboratory Use Only: MAXXAM JOB #: BOTTLE ORDER #:  CHAIN OF CUSTODY #: PROJECT MANAGER: Mathura Thirukkumaran  C#411743-04-01	
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Regulation 153 (2011) <input checked="" type="checkbox"/> Table 1 <input type="checkbox"/> Table 2 <input type="checkbox"/> Table 3 <input type="checkbox"/> Table	Other Regulations <input type="checkbox"/> Res/Park <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC	SPECIAL INSTRUCTIONS TSS RDL = 1mg/L	ANALYSIS REQUESTED (Please be specific) Regulated Drinking Water? (Y/N) Metals Field Filtered? (Y/N) Total Suspended Solids Turbidity	TURNAROUND TIME (TAT) REQUIRED: PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. <input checked="" type="checkbox"/> Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: <input type="checkbox"/> Rush Confirmation Number: _____ (call lab for #)
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Include Criteria on Certificate of Analysis (Y/N)? _____
 Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form
 SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water? (Y/N)	Metals Field Filtered? (Y/N)	Total Suspended Solids	Turbidity	# of Bottles	Comments
1	SW1	July 22	1330	SW	N	N	✓	✓		* TSS RDL
2	SW 2		1510				✓	✓		= 1mg/L
3	SW 3		1415				✓	✓		
4	SW 4		1440				✓	✓		
5	E-SWMP-IN		1250				✓	✓		
6	E-SWMP-OUT		1345				✓	✓		
7	W-SWMP-IN		1305				✓	✓		
8	W-SWMP-OUT		1345				✓	✓		
9										
10										

23-Jul-13 13:50
 Mathura Thirukkuma

 B3B9504
 FW ENV-915

*RELINQUISHED BY: (Signature/Print) <i>DW Withridge</i>	Date: (YY/MM/DD) 13/07/12	Time: 1630	RECEIVED BY: (Signature/Print) Gp MARGARETA CO	Date: (YY/MM/DD) 2013/07/23	Time: 13:50	# Jars Used and Not Submitted	Laboratory Use Only Time Sensitive Temperature (°C) on Receipt: 11/12°C Custody Seal Present: <input checked="" type="checkbox"/> Intact: <input checked="" type="checkbox"/>		
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Your Project #: 12-1151-0155
Site#: 12-1151-0155
Site Location: COVANTA
Your C.O.C. #: 41174302, 411743-02-01

Attention: Steve Auger

Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2013/10/11

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B3H1591****Received: 2013/10/08, 14:10**

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Low Level Total Suspended Solids	6	N/A	2013/10/09	CAM SOP-00428	SM 2540D
Low Level Total Suspended Solids	2	N/A	2013/10/10	CAM SOP-00428	SM 2540D
Turbidity	8	N/A	2013/10/10	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.

Antonella Brasil, Project Manager
Email: ABrasil@maxxam.ca
Phone# (905) 817-5817

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

Total cover pages: 1

Maxxam Job #: B3H1591
 Report Date: 2013/10/11

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

RESULTS OF ANALYSES OF WATER

Maxxam ID		TK0604	TK0604			TK0605	TK0606		
Sampling Date		2013/10/07	2013/10/07			2013/10/07	2013/10/07		
	Units	E-SWMP-OUT	E-SWMP-OUT Lab-Dup	RDL	QC Batch	W-SWMP-OUT	E-SWMP-IN	RDL	QC Batch
Inorganics									
Total Suspended Solids	mg/L	69		2	3379813	150	31	1	3379434
Turbidity	NTU	32	31	0.2	3379581	47	28	0.2	3379581

Maxxam ID		TK0607			TK0608	TK0609	TK0610	TK0611		
Sampling Date		2013/10/07			2013/10/07	2013/10/07	2013/10/07	2013/10/07		
	Units	W-SWMP-IN	RDL	QC Batch	SW-1	SW2	SW3	SW4	RDL	QC Batch
Inorganics										
Total Suspended Solids	mg/L	81	5	3379813	40	49	31	22	1	3379434
Turbidity	NTU	130	0.2	3379581	24	24	25	29	0.2	3379581

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B3H1591
 Report Date: 2013/10/11

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

Test Summary

Maxxam ID TK0604
Sample ID E-SWMP-OUT
Matrix Water

Collected 2013/10/07
Shipped
Received 2013/10/08

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3379813	N/A	2013/10/10	Yohannes Chemo
Turbidity	TURB	3379581	N/A	2013/10/10	Lemeneh Addis

Maxxam ID TK0604 Dup
Sample ID E-SWMP-OUT
Matrix Water

Collected 2013/10/07
Shipped
Received 2013/10/08

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Turbidity	TURB	3379581	N/A	2013/10/10	Lemeneh Addis

Maxxam ID TK0605
Sample ID W-SWMP-OUT
Matrix Water

Collected 2013/10/07
Shipped
Received 2013/10/08

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3379434	N/A	2013/10/09	Malik Kai Morgan John
Turbidity	TURB	3379581	N/A	2013/10/10	Lemeneh Addis

Maxxam ID TK0606
Sample ID E-SWMP-IN
Matrix Water

Collected 2013/10/07
Shipped
Received 2013/10/08

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3379434	N/A	2013/10/09	Malik Kai Morgan John
Turbidity	TURB	3379581	N/A	2013/10/10	Lemeneh Addis

Maxxam Job #: B3H1591
 Report Date: 2013/10/11

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

Test Summary

Maxxam ID TK0607
Sample ID W-SWMP-IN
Matrix Water

Collected 2013/10/07
Shipped
Received 2013/10/08

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3379813	N/A	2013/10/10	Yohannes Chemo
Turbidity	TURB	3379581	N/A	2013/10/10	Lemeneh Addis

Maxxam ID TK0608
Sample ID SW-1
Matrix Water

Collected 2013/10/07
Shipped
Received 2013/10/08

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3379434	N/A	2013/10/09	Malik Kai Morgan John
Turbidity	TURB	3379581	N/A	2013/10/10	Lemeneh Addis

Maxxam ID TK0609
Sample ID SW2
Matrix Water

Collected 2013/10/07
Shipped
Received 2013/10/08

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3379434	N/A	2013/10/09	Malik Kai Morgan John
Turbidity	TURB	3379581	N/A	2013/10/10	Lemeneh Addis

Maxxam ID TK0610
Sample ID SW3
Matrix Water

Collected 2013/10/07
Shipped
Received 2013/10/08

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3379434	N/A	2013/10/09	Malik Kai Morgan John
Turbidity	TURB	3379581	N/A	2013/10/10	Lemeneh Addis

Maxxam Job #: B3H1591
Report Date: 2013/10/11

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

Test Summary

Maxxam ID TK0611
Sample ID SW4
Matrix Water

Collected 2013/10/07
Shipped
Received 2013/10/08

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3379434	N/A	2013/10/09	Malik Kai Morgan John
Turbidity	TURB	3379581	N/A	2013/10/10	Lemeneh Addis

Maxxam Job #: B3H1591
Report Date: 2013/10/11

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

Package 1	-0.3°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Maxxam Job #: B3H1591
 Report Date: 2013/10/11

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

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Method Blank		RPD		QC Standard	
			Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3379434	Total Suspended Solids	2013/10/09	<1	mg/L	NC	25	98	85 - 115
3379581	Turbidity	2013/10/10	<0.2	NTU	2.5	20	98	85 - 115
3379813	Total Suspended Solids	2013/10/10	<1	mg/L	14.3	25	97	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.

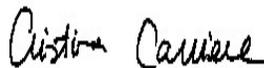
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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.

Validation Signature Page

Maxxam Job #: B3H1591

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.

Your Project #: 12-1151-0155
Site#: 12-1151-0155
Site Location: COVANTA
Your C.O.C. #: 42918801, 429188-01-01

Attention: Steve Auger

Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2013/11/26**CERTIFICATE OF ANALYSIS****MAXXAM JOB #: B3K2772****Received: 2013/11/22, 16:00**

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Low Level Total Suspended Solids	8	N/A	2013/11/25	CAM SOP-00428	SM 2540D
Turbidity	8	N/A	2013/11/23	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.

Antonella Brasil, Project Manager
Email: ABrasil@maxxam.ca
Phone# (905) 817-5817

=====

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Total cover pages: 1

Page 1 of 8

Maxxam Job #: B3K2772
 Report Date: 2013/11/26

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

RESULTS OF ANALYSES OF WATER

Maxxam ID		UA3121	UA3122		UA3123		UA3124		
Sampling Date		2013/11/22 08:19	2013/11/22 08:41		2013/11/22 09:50		2013/11/22 09:41		
	Units	E-SWMP-IN	E-SWMP-OUT	RDL	W-SWMP-IN	RDL	W-SWMP-OUT	RDL	QC Batch
Inorganics									
Total Suspended Solids	mg/L	430	300	5	45	3	30	2	3433916
Turbidity	NTU	89	110	0.2	36	0.2	35	0.2	3433823

Maxxam ID		UA3125	UA3125	UA3126	UA3127	UA3128		
Sampling Date		2013/11/22 09:06	2013/11/22 09:06	2013/11/22 10:21	2013/11/22 10:57	2013/11/22 10:40		
	Units	SW1	SW1 Lab-Dup	SW2	SW3	SW4	RDL	QC Batch
Inorganics								
Total Suspended Solids	mg/L	28		28	7	18	1	3433916
Turbidity	NTU	29	31	18	5.1	16	0.2	3433823

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B3K2772
 Report Date: 2013/11/26

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

Test Summary

Maxxam ID UA3121
Sample ID E-SWMP-IN
Matrix Water

Collected 2013/11/22
Shipped
Received 2013/11/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3433916	N/A	2013/11/25	Subhashchandra Patel
Turbidity	TURB	3433823	N/A	2013/11/23	Lemeneh Addis

Maxxam ID UA3122
Sample ID E-SWMP-OUT
Matrix Water

Collected 2013/11/22
Shipped
Received 2013/11/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3433916	N/A	2013/11/25	Subhashchandra Patel
Turbidity	TURB	3433823	N/A	2013/11/23	Lemeneh Addis

Maxxam ID UA3123
Sample ID W-SWMP-IN
Matrix Water

Collected 2013/11/22
Shipped
Received 2013/11/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3433916	N/A	2013/11/25	Subhashchandra Patel
Turbidity	TURB	3433823	N/A	2013/11/23	Lemeneh Addis

Maxxam ID UA3124
Sample ID W-SWMP-OUT
Matrix Water

Collected 2013/11/22
Shipped
Received 2013/11/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3433916	N/A	2013/11/25	Subhashchandra Patel
Turbidity	TURB	3433823	N/A	2013/11/23	Lemeneh Addis

Maxxam Job #: B3K2772
 Report Date: 2013/11/26

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

Test Summary

Maxxam ID UA3125
Sample ID SW1
Matrix Water

Collected 2013/11/22
Shipped
Received 2013/11/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3433916	N/A	2013/11/25	Subhashchandra Patel
Turbidity	TURB	3433823	N/A	2013/11/23	Lemeneh Addis

Maxxam ID UA3125 Dup
Sample ID SW1
Matrix Water

Collected 2013/11/22
Shipped
Received 2013/11/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Turbidity	TURB	3433823	N/A	2013/11/23	Lemeneh Addis

Maxxam ID UA3126
Sample ID SW2
Matrix Water

Collected 2013/11/22
Shipped
Received 2013/11/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3433916	N/A	2013/11/25	Subhashchandra Patel
Turbidity	TURB	3433823	N/A	2013/11/23	Lemeneh Addis

Maxxam ID UA3127
Sample ID SW3
Matrix Water

Collected 2013/11/22
Shipped
Received 2013/11/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3433916	N/A	2013/11/25	Subhashchandra Patel
Turbidity	TURB	3433823	N/A	2013/11/23	Lemeneh Addis

Maxxam Job #: B3K2772
Report Date: 2013/11/26

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

Test Summary

Maxxam ID UA3128
Sample ID SW4
Matrix Water

Collected 2013/11/22
Shipped
Received 2013/11/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3433916	N/A	2013/11/25	Subhashchandra Patel
Turbidity	TURB	3433823	N/A	2013/11/23	Lemeneh Addis

Maxxam Job #: B3K2772
Report Date: 2013/11/26

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

Package 1	6.0°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Maxxam Job #: B3K2772
 Report Date: 2013/11/26

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

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Method Blank		RPD		QC Standard	
			Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3433823	Turbidity	2013/11/23	<0.2	NTU	3.9	20	97	85 - 115
3433916	Total Suspended Solids	2013/11/25	<1	mg/L	0	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.

Validation Signature Page

Maxxam Job #: B3K2772

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
Site#: 12-1151-0155
Site Location: COVANTA /CLAVINGTON
Your C.O.C. #: 45715143, 457151-43-01

Attention: Steve Auger

Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2014/04/01
Report #: R2979621
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B451062
Received: 2014/04/01, 10:25

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Low Level Total Suspended Solids	5	N/A	2014/04/01	CAM SOP-00428	SM 2540D
Turbidity	5	N/A	2014/04/01	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.

Antonella Brasil, Senior Project Manager
Email: ABrasil@maxxam.ca
Phone# (905) 817-5817

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B451062
 Report Date: 2014/04/01

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

RESULTS OF ANALYSES OF WATER

Maxxam ID		VJ7640	VJ7641	VJ7641		VJ7642		VJ7643	VJ7644		
Sampling Date		2014/03/31 14:49	2014/03/31 14:20	2014/03/31 14:20		2014/03/31 16:02		2014/03/31 16:25	2014/03/31 16:51		
	Units	W-SWMP-OUT	SW 1	SW 1 Lab-Dup	RDL	SW 2	RDL	SW 3	SW 4	RDL	QC Batch
Inorganics											
Total Suspended Solids	mg/L	36	10	11	1	330	5	540	590	10	3558664
Turbidity	NTU	66	9.8		0.2	220	0.2	87	100	0.2	3558663

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B451062
 Report Date: 2014/04/01

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

Test Summary

Maxxam ID VJ7640
Sample ID W-SWMP-OUT
Matrix Water

Collected test 2 2014/03/31
Shipped
Received 2014/04/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3558664	N/A	2014/04/01	Subhashchandra Patel
Turbidity	TURB	3558663	N/A	2014/04/01	Lemeneh Addis

Maxxam ID VJ7641
Sample ID SW 1
Matrix Water

Collected test 2 2014/03/31
Shipped
Received 2014/04/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3558664	N/A	2014/04/01	Subhashchandra Patel
Turbidity	TURB	3558663	N/A	2014/04/01	Lemeneh Addis

Maxxam ID VJ7641 Dup
Sample ID SW 1
Matrix Water

Collected test 2 2014/03/31
Shipped
Received 2014/04/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3558664	N/A	2014/04/01	Subhashchandra Patel

Maxxam ID VJ7642
Sample ID SW 2
Matrix Water

Collected test 2 2014/03/31
Shipped
Received 2014/04/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3558664	N/A	2014/04/01	Subhashchandra Patel
Turbidity	TURB	3558663	N/A	2014/04/01	Lemeneh Addis

Maxxam Job #: B451062
 Report Date: 2014/04/01

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

Test Summary

Maxxam ID VJ7643
Sample ID SW 3
Matrix Water

Collected test 2 2014/03/31
Shipped
Received 2014/04/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3558664	N/A	2014/04/01	Subhashchandra Patel
Turbidity	TURB	3558663	N/A	2014/04/01	Lemeneh Addis

Maxxam ID VJ7644
Sample ID SW 4
Matrix Water

Collected test 2 2014/03/31
Shipped
Received 2014/04/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3558664	N/A	2014/04/01	Subhashchandra Patel
Turbidity	TURB	3558663	N/A	2014/04/01	Lemeneh Addis

Maxxam Job #: B451062
Report Date: 2014/04/01

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

Package 1	3.0°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Maxxam Job #: B451062
 Report Date: 2014/04/01

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

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Method Blank		RPD		QC Standard	
			Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3558663	Turbidity	2014/04/01	<0.2	NTU	NC	20	100	85 - 115
3558664	Total Suspended Solids	2014/04/01	<1	mg/L	11.5	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.

Validation Signature Page

Maxxam Job #: B451062

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

A handwritten signature in black ink, appearing to read "Brad Newman".

Brad Newman, Scientific Specialist

=====

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

Your Project #: 12-1151-0155
Site#: 12-1151-0155
Site Location: COVANTA
Your C.O.C. #: 40712002, 407120-02-01

Attention: Steve Auger

Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2013/07/03

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B3A1602**

Received: 2013/06/26, 15:20

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Total Suspended Solids	7	N/A	2013/06/27	CAM SOP-00428	SM 2540D
Total Suspended Solids	1	N/A	2013/07/02	CAM SOP-00428	SM 2540D
Turbidity	8	N/A	2013/06/27	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.

Keshani Vijh, Project Manager
Email: KVijh@maxxam.ca
Phone# (905) 817-5700

=====
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.

Total cover pages: 1

Maxxam Job #: B3A1602
 Report Date: 2013/07/03

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

RESULTS OF ANALYSES OF WATER

Maxxam ID		SA9367	SA9367	SA9368	SA9369	SA9370		
Sampling Date		2013/06/25	2013/06/25	2013/06/25	2013/06/25	2013/06/25		
	Units	E-SWMP-IN	E-SWMP-IN Lab-Dup	E-SWMP-OUT	W-SWMP-IN	W-SWMP-OUT	RDL	QC Batch
Inorganics								
Total Suspended Solids	mg/L	<10	<10	<10	12	87	10	3262105
Turbidity	NTU	8.2		9.3	19	52	0.2	3262218

Maxxam ID		SA9371		SA9372		SA9373	SA9374		
Sampling Date		2013/06/25		2013/06/25		2013/06/25	2013/06/25		
	Units	SW1	QC Batch	SW2	QC Batch	SW3	SW4	RDL	QC Batch
Inorganics									
Total Suspended Solids	mg/L	81	3262105	10	3266072	28	44	10	3262105
Turbidity	NTU	28	3262218	7.7	3262218	17	20	0.2	3262218

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B3A1602
Report Date: 2013/07/03

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

Test Summary

Maxxam ID SA9367
Sample ID E-SWMP-IN
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam ID SA9367 Dup
Sample ID E-SWMP-IN
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John

Maxxam ID SA9368
Sample ID E-SWMP-OUT
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam ID SA9369
Sample ID W-SWMP-IN
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam Job #: B3A1602
 Report Date: 2013/07/03

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

Test Summary

Maxxam ID SA9370
Sample ID W-SWMP-OUT
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam ID SA9371
Sample ID SW1
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam ID SA9372
Sample ID SW2
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3266072	N/A	2013/07/02	Gurpreet Kaur
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam ID SA9373
Sample ID SW3
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam Job #: B3A1602
Report Date: 2013/07/03

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

Test Summary

Maxxam ID SA9374
Sample ID SW4
Matrix Water

Collected 2013/06/25
Shipped
Received 2013/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Suspended Solids	SLDS	3262105	N/A	2013/06/27	Malik Kai Morgan John
Turbidity	TURB	3262218	N/A	2013/06/27	Lemeneh Addis

Maxxam Job #: B3A1602
Report Date: 2013/07/03

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

Package 1	7.3°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Maxxam Job #: B3A1602
 Report Date: 2013/07/03

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

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Method Blank		RPD		QC Standard	
			Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3262105	Total Suspended Solids	2013/06/27	<10	mg/L	NC	25	98	85 - 115
3262218	Turbidity	2013/06/27	0.3, RDL=0.2	NTU	10.9	20	97	85 - 115
3266072	Total Suspended Solids	2013/07/02	<10	mg/L	1.7	25	97	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 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.

Validation Signature Page

Maxxam Job #: B3A1602

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




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

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

Your Project #: 12-1151-0155
Site#: 12-1151-0155
Site Location: DYEC-SW PROGRAM
Your C.O.C. #: 30157002, 301570-02-01

Attention: Steve Auger

Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2013/07/03

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B3A4626****Received: 2013/07/02, 13:50**

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
TPH (Heavy Oil) (1)	2	2013/07/02	2013/07/02	CAM SOP-00326	SM 5520F

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

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

Encryption Key

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

Keshani Vijh, Project Manager
Email: KVijh@maxxam.ca
Phone# (905) 817-5700

=====
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Total cover pages: 1

Page 1 of 6

Maxxam Job #: B3A4626
 Report Date: 2013/07/03

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

RESULTS OF ANALYSES OF WATER

Maxxam ID		SC2918	SC2919		
Sampling Date		2013/06/28 19:35	2013/06/28 19:30		
	Units	SWMP-E-IN INSIDE	SWMP-E-IN OUTSIDE	RDL	QC Batch
Petroleum Hydrocarbons					
Total Oil & Grease Mineral/Synthetic	mg/L	15	<1.0	1.0	3266192

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B3A4626
 Report Date: 2013/07/03

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

Test Summary

Maxxam ID SC2918
Sample ID SWMP-E-IN INSIDE
Matrix Water

Collected 2013/06/28
Shipped
Received 2013/07/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
TPH (Heavy Oil)	BAL	3266192	2013/07/02	2013/07/02	Amjad Mir

Maxxam ID SC2919
Sample ID SWMP-E-IN OUTSIDE
Matrix Water

Collected 2013/06/28
Shipped
Received 2013/07/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
TPH (Heavy Oil)	BAL	3266192	2013/07/02	2013/07/02	Amjad Mir

Maxxam Job #: B3A4626
Report Date: 2013/07/03

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

Package 1	9.3°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

O&G: Due to limited amount of sample available for analysis, a smaller than usual portion of the sample was used. Detection limits were adjusted accordingly.

Maxxam Job #: B3A4626
 Report Date: 2013/07/03

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

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3266192	Total Oil & Grease Mineral/Synthetic	2013/07/02	97	85 - 115	<0.50	mg/L	2.6	25

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.

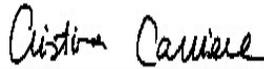
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

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

Validation Signature Page

Maxxam Job #: B3A4626

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

A handwritten signature in black ink that reads "Cristina Carriere".

Cristina Carriere, Scientific Services

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

Your Project #: 12-1151-0155
Site#: 12-1151-0155
Site Location: COVANTA/OIL SPILL
Your C.O.C. #: 42628201, 426282-01-01

Attention: Steve Auger

Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2013/07/08

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B3A5686****Received: 2013/07/03, 11:15**

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
TPH (Heavy Oil) (1)	2	2013/07/08	2013/07/08	CAM SOP-00326	SM 5520F

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

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

Encryption Key

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

Keshani Vijh, Project Manager
Email: KVijh@maxxam.ca
Phone# (905) 817-5700

=====
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.

Total cover pages: 1

Page 1 of 6

Maxxam Job #: B3A5686
 Report Date: 2013/07/08

Golder Associates Ltd
 Client Project #: 12-1151-0155
 Site Location: COVANTA/OIL SPILL
 Sampler Initials: NG

RESULTS OF ANALYSES OF WATER

Maxxam ID		SC7379	SC7380		
Sampling Date		2013/07/02 14:00	2013/07/02 13:55		
	Units	E-SWMP-IN-INSIDE	E-SWMP-IN-OUTSIDE	RDL	QC Batch
Petroleum Hydrocarbons					
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	<0.50	0.50	3271725

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B3A5686
 Report Date: 2013/07/08

Golder Associates Ltd
 Client Project #: 12-1151-0155
 Site Location: COVANTA/OIL SPILL
 Sampler Initials: NG

Test Summary

Maxxam ID SC7379
Sample ID E-SWMP-IN-INSIDE
Matrix Water

Collected 2013/07/02
Shipped
Received 2013/07/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
TPH (Heavy Oil)	BAL	3271725	2013/07/08	2013/07/08	Amjad Mir

Maxxam ID SC7380
Sample ID E-SWMP-IN-OUTSIDE
Matrix Water

Collected 2013/07/02
Shipped
Received 2013/07/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
TPH (Heavy Oil)	BAL	3271725	2013/07/08	2013/07/08	Amjad Mir

Maxxam Job #: B3A5686
Report Date: 2013/07/08

Golder Associates Ltd
Client Project #: 12-1151-0155
Site Location: COVANTA/OIL SPILL
Sampler Initials: NG

Package 1	7.0°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Maxxam Job #: B3A5686
 Report Date: 2013/07/08

Golder Associates Ltd
 Client Project #: 12-1151-0155
 Site Location: COVANTA/OIL SPILL
 Sampler Initials: NG

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3271725	Total Oil & Grease Mineral/Synthetic	2013/07/08	95	85 - 115	<0.50	mg/L	3.2	25

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.

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

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

Validation Signature Page

Maxxam Job #: B3A5686

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




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

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

Your Project #: 12-1152-0155
Site#: 12-1152-0155
Site Location: DYEC-SW PROGRAM
Your C.O.C. #: 41637403, 416374-03-01

Attention: Steve Auger

Golder Associates Ltd
140 Renfrew Dr
Suite 110
Markham, ON
L3R 6B3

Report Date: 2013/07/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3B0270

Received: 2013/07/10, 15:26

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
TPH (Heavy Oil) (1)	2	2013/07/10	2013/07/10	CAM SOP-00326	SM 5520F

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

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

Encryption Key

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

Keshani Vijh, Project Manager
Email: KVijh@maxxam.ca
Phone# (905) 817-5700

=====
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.

Total cover pages: 1

Maxxam Job #: B3B0270
 Report Date: 2013/07/10

Golder Associates Ltd
 Client Project #: 12-1152-0155
 Site Location: DYEC-SW PROGRAM
 Sampler Initials: DW

RESULTS OF ANALYSES OF WATER

Maxxam ID		SE8431	SE8432		
Sampling Date		2013/07/10 09:20	2013/07/10 09:20		
	Units	SWMP-E-IN INSIDE	SWMP-E-IN OUTSIDE	RDL	QC Batch
Petroleum Hydrocarbons					
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	<0.50	0.50	3275179

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B3B0270
 Report Date: 2013/07/10

Golder Associates Ltd
 Client Project #: 12-1152-0155
 Site Location: DYEC-SW PROGRAM
 Sampler Initials: DW

Test Summary

Maxxam ID SE8431
Sample ID SWMP-E-IN INSIDE
Matrix Water

Collected 2013/07/10
Shipped
Received 2013/07/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
TPH (Heavy Oil)	BAL	3275179	2013/07/10	2013/07/10	Francis Afonso

Maxxam ID SE8432
Sample ID SWMP-E-IN OUTSIDE
Matrix Water

Collected 2013/07/10
Shipped
Received 2013/07/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
TPH (Heavy Oil)	BAL	3275179	2013/07/10	2013/07/10	Francis Afonso

Maxxam Job #: B3B0270
Report Date: 2013/07/10

Golder Associates Ltd
Client Project #: 12-1152-0155
Site Location: DYEC-SW PROGRAM
Sampler Initials: DW

Package 1	9.0°C
-----------	-------

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

GENERAL COMMENTS

Maxxam Job #: B3B0270
 Report Date: 2013/07/10

Golder Associates Ltd
 Client Project #: 12-1152-0155
 Site Location: DYEC-SW PROGRAM
 Sampler Initials: DW

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3275179	Total Oil & Grease Mineral/Synthetic	2013/07/10	97	85 - 115	<0.50	mg/L	2.1	25

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.

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

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

Validation Signature Page

Maxxam Job #: B3B0270

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




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

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



E-3 *In Situ* Measurements

SURFACE WATER SAMPLING RECORD FORM



Scott Brazeev.

Steve
289 894 0556

PROJECT INFORMATION

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

Date: May 31st, 2013
 Sampled By: Jessica, Kyle

SITE DATA

Time	9:46
Surveyed reference point	
Water Depth at Staff Gauge (m)	~ 1.5 ft.
Stream Width (m)	Pond.
Stagnant	<input checked="" type="radio"/> Yes <input type="radio"/> No
Flow Rate	None.

Location ID	E-SWMP-IN
-------------	-----------

Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes <input type="radio"/> No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
9:46		1.08	8.13		22.7	36.5	Slight brown slightly turbid	None.

SAMPLING RECORD

Sampling Method: Grab - by Pole.
 Sample Depth: _____
 Time Sampled: _____
 Sample Appearance:
 Colour: _____
 Odour: _____

Sample ID: E-SWMP-IN
 Dup taken? / Dup ID: E-SWMP-Dup^{IN}

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
 Temperature: ~23 $^{\circ}$
 Current Precipitation: None.
 Precipitation of past 24 / 48 hrs: _____

Notes: Started pump @ 9:45 am (Anthony) \rightarrow Stopped - ran out of gas -
ls ~ 2 mins.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: May 31st 2013

Client: Covanta

Sampled By: Jessica, Kyle

Site Location: Clarrington

SITE DATA

Time	<u>10:02 am</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>~2 ft</u>
Stream Width (m)	<u>ford.</u>
Stagnant	<input checked="" type="radio"/> Yes / No
Flow Rate	<u>None</u>

Location ID	<u>W-SWMP-IN</u>
-------------	------------------

Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>10:02</u>		<u>0.32</u>	<u>8.62</u>		<u>22.3</u>	<u>40.0</u>	<u>light brown slightly turbid.</u>	<u>None.</u>

SAMPLING RECORD

Sampling Method: Grab - Pole.

Sample ID: W-SWMP-N

Sample Depth: _____

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

Time Sampled: _____

Sample Appearance:

Colour: _____

Turbidity: Low / Medium / High

Odour: _____

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:

Temperature: rain 24.5°C

Current Precipitation: None.

Precipitation of past 24 / 48 hrs: _____

Notes: _____

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: May 31st 2013

Client: Covanta

Sampled By: Jessica Kyle

Site Location: Clarrington

SITE DATA

Time	<u>10:31</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>~ 1 ft.</u>
Stream Width (m)	
Stagnant	Yes / <u>(No)</u>
Flow Rate	<u>Pumped out.</u>

Location ID	<u>W SWMP-OUT</u>
-------------	-------------------

Logger Number	
Logger Download Time	
Photos Taken	<u>(Yes)</u> 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
<u>10:30</u>		<u>0.28</u>	<u>8.58</u>		<u>14.9</u>	<u>1000 NTU</u>	<u>light brown</u>	<u>None</u>

SAMPLING RECORD

Sampling Method: by hand @ edge of outlet

Sample ID: WSWMP-OUT

Sample Depth: ~1-ft.

Dup taken? / Dup ID: SW Dup

Time Sampled: 10:35

Sample Appearance:

Colour: light brown

Turbidity: Low / Medium / (High)

Odour: None

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:

Temperature: _____

Current Precipitation: _____

Precipitation of past 24 / 48 hrs: _____

Notes: East not discharging. West discharging only.

SW - light brown No OD/SH

Tall grass.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: May 31st 2013

Client: Covanta

Sampled By: Jessica Kyle

Site Location: Clarington

SITE DATA

Time	<u>10:47</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>6"</u>
Stream Width (m)	
Stagnant	Yes / <u>No</u>
Flow Rate	<u>low Med</u>

Location ID	<u>SW1</u>
-------------	------------

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes</u> / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>10:47</u>		<u>0.61</u>	<u>8.07</u>		<u>20.1</u>	<u>22.5</u>	<u>Slightly turbid</u>	<u>None.</u>

SAMPLING RECORD

Sampling Method: Grab-by hand

Sample ID: SW1

Sample Depth: _____

Dup taken? / Dup ID: SW1 Dup

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: some algae growth around outlet
- low discharge rate

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: May 31st 2013

Client: Covanta

Sampled By: Jessica Kyle

Site Location: Clarrington

SITE DATA

Time	<u>11:07</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	Yes / <input checked="" type="radio"/> No
Flow Rate	<u>low-med</u>

Location ID	<u>SW2</u>
-------------	------------

Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes / <input type="radio"/> No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity <input checked="" type="radio"/> mS or <input type="radio"/> µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>11:07</u>		<u>0.70</u>	<u>8.07</u>		<u>17.4</u>	<u>15.8</u>	<u>clear</u>	<u>None</u>

SAMPLING RECORD

Sampling Method: Grab - by hand

Sample ID: SW2

Sample Depth: _____

Dup taken? / Dup ID: SW2 Dup

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: underbrush, twigs, organic debris

Notes: no sheen, no foam

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: May 31st 2013

Client: Covanta

Sampled By: Jessica Kyle

Site Location: Clarrington

SITE DATA

Time	<u>12:00</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>~4"</u>
Stream Width (m)	<u>~1m</u>
Stagnant	<u>Yes / No</u>
Flow Rate	<u>high flow rate</u>

Location ID	<u>SW3</u>
-------------	------------

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>12:00</u>		<u>0.92</u>	<u>8.26</u>		<u>18.9</u>	<u>4.67</u>	<u>None</u>	<u>None</u>

SAMPLING RECORD

Sampling Method: Grab - Pole

Sample ID: SW3

Sample Depth: _____

Dup taken? / Dup ID: SW3 Dup

Time Sampled: _____

Sample Appearance:

Colour: _____

Turbidity: Low / Medium / High

Odour: _____

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions: Temperature: 25°C

Current Precipitation: —

Precipitation of past 24 / 48 hrs: _____

Notes: high grass on banks, rocky stream bed.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: May 31st 2013
 Sampled By: Jessica Kyle

SITE DATA

Time	<u>11:46 am.</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>~ 8"-10"</u>
Stream Width (m)	<u>1.5m</u>
Stagnant	Yes / <u>(No)</u>
Flow Rate	<u>med flow.</u>

Location ID	<u>SW4</u>
-------------	------------

Logger Number	
Logger Download Time	
Photos Taken	<u>(Yes)</u> / 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
<u>11:46</u>		<u>0.86</u>	<u>8.6</u>		<u>17.7</u>	<u>5.15</u>	<u>None</u>	<u>None</u>

SAMPLING RECORD

Sampling Method: Grab - by hand.
 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: 25°C
 Current Precipitation: —
 Precipitation of past 24 / 48 hrs: _____

Notes: medium flow, grassy sees on banks.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: 25th June, 2013
 Sampled By: Jessica, Linda

SITE DATA

Time	<u>9:30</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>1 m</u>
Stream Width (m)	
Stagnant	<u>Yes</u> / No
Flow Rate	

Location ID: E-SWMP-IN

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes</u> / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity <u>mS</u> or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity <u>NTU</u>	Colour	Odour
<u>9:38</u>		<u>0.94</u>	<u>6.46</u>		<u>23.4</u>	<u>21.9</u>	<u>light green/grey</u>	<u>None</u>

SAMPLING RECORD

Sampling Method: Sampling pole grab
 Sample Depth: _____
 Time Sampled: _____
 Sample Appearance:
 Colour: _____
 Odour: _____

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

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

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

Notes: Sample obtained from north west side of pump
Current precipitation: light rain 30°C
Water had a green appearance. Started pumping at 9:35

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: 25th June, 2013

Client: Covanta

Sampled By: Jessica, Linda.

Site Location: Clarington

SITE DATA

Time	<u>9:50</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>1 m</u>
Stream Width (m)	
Stagnant	<u>Yes</u> / No
Flow Rate	

Location ID	<u>W-SWMP-IN</u>
-------------	------------------

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes</u> / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity μS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>9:50</u>		<u>0.41</u>	<u>6.58</u>		<u>23.8</u>	<u>41.3</u>	<u>green/grey</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: Sampling pole grab

Sample ID: W-SWMP-IN

Sample Depth: _____

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

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: Sample obtained from west side of pump, water has green colour. Light rain 30°C. Pump operational upon arrival.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: 25th June 2013
 Sampled By: Jessica, Linda

SITE DATA

Time	<u>10:16</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>0.50 m 8"</u>
Stream Width (m)	
Stagnant	Yes / <u>No</u>
Flow Rate	

Location ID	<u>E-SWMP-OUT</u>
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Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity <u>(mS or μS)</u>	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>10:16</u>		<u>0.84</u>	<u>7.07</u>	<u>1009</u>	<u>23.3</u>	<u>20.9</u>	<u>green/grey</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: Grab sample
 Sample Depth: _____
 Time Sampled: _____
 Sample Appearance:
 Colour: _____
 Odour: _____

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

Turbidity: Low Medium / High

Sample Container and Preservation:

OBSERVATIONS

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

Notes: Foggy 30°C water slightly turbid, light green/grey in colour. Foam observed. Rowland vegetation

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: 25th June, 2013

Client: Covanta

Sampled By: Jessica, Linda

Site Location: Clarington

SITE DATA

Time	<u>10:18</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>0.56 m</u>
Stream Width (m)	
Stagnant	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Flow Rate	

Location ID	<u>W-SWMP-OUT</u>
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Logger Number	
Logger Download Time	
Photos Taken	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity <u>mS or μS</u>	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>10:18</u>		<u>0.40</u>	<u>7.20</u>		<u>21.4</u>	<u>186</u>	<u>green/gray</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: Grab Sample

Sample ID: W-SWMP-OUT

Sample Depth: _____

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

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: Foggy 30°C, water turbid, light green/gray in colour some foam observed. Abundant vegetation.

Double checked turbidity - several readings 176

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: 25th June, 2013
 Sampled By: Jessica, Linda

SITE DATA

Time	<u>10:45</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>0.50 m</u>
Stream Width (m)	
Stagnant	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Flow Rate	

Location ID	<u>SW1</u>
Logger Number	
Logger Download Time	
Photos Taken	Yes/No (# <u> </u>)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS/cm	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>10:45</u>		<u>0.03</u>	<u>6.96</u>		<u>21.0</u>	<u>101</u>	<u>grey/green</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: grab sample
 Sample Depth: _____
 Time Sampled: _____
 Sample Appearance:
 Colour: _____
 Odour: _____

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

Turbidity: Low Medium High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions: Temperature: 30°C

Current Precipitation: Foggy

Precipitation of past 24/48 hrs: heavy to light rain

Notes: no turbidity observed east of discharge point on the east side of the road. Turbidity/murkiness was observed in all culverts west of discharge. - Algal cover approx. 75%. - Suspended solids noted

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: 25th June, 2013
 Sampled By: Jessica, Linda

SITE DATA

Time	<u>11:00</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>3"</u>
Stream Width (m)	<u>1 m</u>
Stagnant	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Flow Rate	

Location ID	<u>SW2</u>
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Logger Number	
Logger Download Time	
Photos Taken	Yes/No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity <u>mS or μS</u>	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>11:00</u>		<u>0.74</u>	<u>7.01</u>		<u>18.6</u>	<u>13.9</u>	<u>clear</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: grab sample
 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: 30 °C

Current Precipitation: Foggy

Precipitation of past 24/48 hrs: heavy to light

Notes: slight flow, clear water, dense vegetation, no algae, no foam

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: 25th June, 2013

Client: Covanta

Sampled By: Jessica Linda

Site Location: Clarington

SITE DATA

Time	<u>11:50</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>1.5 m</u>
Stream Width (m)	<u>2.5</u>
Stagnant	Yes / <u>No</u>
Flow Rate	

Location ID	<u>SW3</u>
-------------	------------

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes</u> / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>11:50</u>		<u>286</u>	<u>7.53</u>		<u>19.1</u>	<u>66.1</u>	<u>brown/grey</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: Grab pde Sampling

Sample ID: SW3

Sample Depth: _____

Dup taken? / Dup ID: SW3-Dup

Time Sampled: _____

Sample Appearance: Colour: _____

Turbidity: Low / Medium / High

Odour: _____

Sample Container and Preservation: _____

OBSERVATIONS

Weather Conditions: Temperature: 30 °C

Current Precipitation: overcast

Precipitation of past 24 / 48 hrs: heavy / light

Notes: high turbidity, fast flowing water, brown/grey in colour, dense vegetation

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: 25th June 2013
 Sampled By: Jessica, Linda

SITE DATA

Time	<u>11:25</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>1.5 m</u>
Stream Width (m)	<u>3 m</u>
Stagnant	<u>Yes / No</u>
Flow Rate	

Location ID	<u>SW4</u>
-------------	------------

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity <u>ms or μS</u>	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>11:25</u>		<u>0.82</u>	<u>7.33</u>		<u>19.0</u>	<u>84.8</u>	<u>brown/grey</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: Sample pde grab Sample ID: SW4
 Sample Depth: _____ Dup taken? / Dup ID: SW4-Dup
 Time Sampled: _____
 Sample Appearance: _____
 Colour: _____ Turbidity: Low / Medium / High
 Odour: _____
 Sample Container and Preservation: _____

OBSERVATIONS

Weather Conditions: Temperature: 30°C
 Current Precipitation: 1994 / misty
 Precipitation of past 24 / 48 hrs: _____
 Notes: slow flowing, grey/brown in colour, very foamy trace foam

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: July 22 2013

Client: Covanta

Sampled By: Kevin + Eric

Site Location: Clarington

SITE DATA

Time	<u>1330</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>~30cm</u>
Stream Width (m)	<u>1.5m</u>
Stagnant	<input checked="" type="radio"/> Yes <input type="radio"/> No
Flow Rate	<u>low</u>

Location ID: SW1

Logger Number	
Logger 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 NTU	Colour	Odour
<u>1330</u>	<u>✓</u>	<u>0.67</u>	<u>7.25</u>	<u>✓</u>	<u>24.9</u>	<u>9.10</u>	<u>clear</u>	<u>✓</u>

SAMPLING RECORD

Sampling Method: pole surface

Sample ID: SW1

Sample Depth: surface

Dup taken? / Dup ID: SW1 Dup

Time Sampled: 1330

Sample Appearance: Colour: clear

Turbidity: Low Medium High

Odour: ✓

Sample Container and Preservation:

4x plastic unpreserved

OBSERVATIONS

Weather Conditions: Temperature: _____

Current Precipitation: _____

Precipitation of past 24 / 48 hrs: _____

Notes: _____

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: July 22 2013

Client: Covanta

Sampled By: Devon + Eric

Site Location: Claxington

SITE DATA

Time	<u>1510</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>2'-6"</u>
Stream Width (m)	<u>0.3m</u>
Stagnant	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Flow Rate	<u>slow</u>

Location ID: SW 2

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>1510</u>	<u>/</u>	<u>0.59</u>	<u>7.80</u>		<u>21.4</u>	<u>15.37</u>	<u>clear</u>	<u>/</u>

SAMPLING RECORD

Sampling Method: poke

Sample ID: SW 2

Sample Depth: surface

Dup taken? / Dup ID: SW 2 Dup

Time Sampled: 1510

Sample Appearance: Colour: clear

Turbidity: Low / Medium / High

Odour: _____

Sample Container and Preservation:

4x plastic unpreserved.

OBSERVATIONS

Weather Conditions: Temperature: _____

Current Precipitation: _____

Precipitation of past 24 / 48 hrs: _____

Notes: _____

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: July 22 2013

Client: Covanta

Sampled By: Devon + Eric

Site Location: Claxington

SITE DATA

Time	<u>1415</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>4"-12"</u>
Stream Width (m)	<u>0.6m</u>
Stagnant	<u>Yes / No</u>
Flow Rate	<u>med.</u>

Location ID	<u>SW 3</u>
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Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>1415</u>	<u>/</u>	<u>1.27</u>	<u>7.38</u>	<u>/</u>	<u>22.3</u>	<u>592</u>	<u>clear.</u>	<u>/</u>

SAMPLING RECORD

Sampling Method: pole

Sample ID: SW 3

Sample Depth: surface

Dup taken? / Dup ID: SW Dup

Time Sampled: 1215

Sample Appearance: Colour: clear.

Turbidity: Low / Medium / High

Odour: N

Sample Container and Preservation:

- 4x plastic unpreserved.
- clear.

OBSERVATIONS

Weather Conditions:

Temperature: _____

Current Precipitation: _____

Precipitation of past 24 / 48 hrs: _____

Notes: _____

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: July 22 2013
 Sampled By: Devon + Eric

SITE DATA

Time	<u>1440</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>~12"</u>
Stream Width (m)	<u>1.5m</u>
Stagnant	Yes <u>No</u>
Flow Rate	<u>Med.</u>

Location ID: SW 4

Logger Number	
Logger Download Time	
Photos Taken	Yes/No (# <u> </u>)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
<u>1400</u>	<u>/</u>	<u>1.08</u>	<u>7.57</u>	<u>/</u>	<u>21.6</u>	<u>4.67</u>	<u>clear</u>	<u>/</u>

SAMPLING RECORD

Sampling Method: Pole
 Sample Depth: surface
 Time Sampled: 1440
 Sample Appearance:
 Colour: clear
 Odour: no

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

Turbidity: Low / Medium / High

Sample Container and Preservation:
4x plastic ampresen
- clear water

OBSERVATIONS

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

Notes: _____

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: July 22 2013
 Sampled By: Devon

SITE DATA

Time	<u>1250</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	<u>POND</u>
Stagnant	<input checked="" type="radio"/> Yes <input type="radio"/> No
Flow Rate	<u>None</u>

Location ID: E-SWAMP-PW

Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes <input type="radio"/> No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS or μ S)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>1250</u>	<u>/</u>	<u>0.75</u>	<u>8.58</u>	<u>/</u>	<u>25.2</u>	<u>26.64</u>	<u>slightly milky</u>	<u>N</u>

SAMPLING RECORD

Sampling Method: poke
 Sample Depth: surface
 Time Sampled: 1250
 Sample Appearance:
 Colour: slightly/trace milky
 Odour: N

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

Turbidity: Low / Medium / High

Sample Container and Preservation:

4x plastic - no pres.
- pond 6" below outlet pipe
- pond was discharged in morning

OBSERVATIONS

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

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: July 22 2013
 Sampled By: Devon Eric

SITE DATA

Time	<u>1345</u>
Surveyed reference point	<u>/</u>
Water Depth at Staff Gauge (m)	<u>1^m - 2["]</u>
Stream Width (m)	<u>1.5</u>
Stagnant	<u>Yes / No</u>
Flow Rate	<u>Low</u>

Location ID: E-SWAMP-out

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>1345</u>	<u>/</u>	<u>0.42</u>	<u>7.45</u>	<u>/</u>	<u>24.9</u>	<u>180</u>	<u>light brown</u>	<u>-</u>

SAMPLING RECORD

Sampling Method: Grab
 Sample Depth: Surface
 Time Sampled: 1345

Sample ID: E-SWAMP-0
 Dup taken? / Dup ID: SW Dup

Sample Appearance:
 Colour: brown
 Odour: n

Turbidity: Low / Medium / High (High)

Sample Container and Preservation:

4x Plastic - unpreserved
- brown, very milky.

OBSERVATIONS

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

Notes: _____

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: July 22 2013

Client: Covanta

Sampled By: Devon

Site Location: Claxington

SITE DATA

Time	<u>1305</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	<u>Pond</u>
Stagnant	<u>Yes / No</u>
Flow Rate	<u>N</u>

Location ID: W-SW-MP-IN

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity NTU	Colour	Odour
<u>1305</u>	<u>/</u>	<u>0.28</u>	<u>8.03</u>	<u>/</u>	<u>24.4</u>	<u>310</u>	<u>Light Brown</u>	<u>N</u>

SAMPLING RECORD

Sampling Method: Pole

Sample ID: W-SW-MP-IN

Sample Depth: Surface

Dup taken? / Dup ID: SW Dup

Time Sampled: 1305

Sample Appearance: Light brown

Turbidity: Low / Medium / High

Colour: Light brown

Odour: N

Sample Container and Preservation:

4x plastic non preserve
pond is just below outlet pipe (~2") works
pump water from south excavation into
pond, discharging dirt.

OBSERVATIONS

Weather Conditions: Temperature: _____

Current Precipitation: _____

Precipitation of past 24 / 48 hrs: _____

Notes: _____

* silty water related to contractor pump
 water from close by excavation directly into pond,
 using trash pump.
 - Pond discharged in morning

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: July 22 2013
 Sampled By: Devon + Eric

SITE DATA

Time	<u>1345</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>1" - 2"</u>
Stream Width (m)	<u>1.5m</u>
Stagnant	<u>Yes</u> / No
Flow Rate	<u>✓</u>

Location ID: W-SWMP-art

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes</u> / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>1345</u>	<u>✓</u>	<u>0.29</u>	<u>7.58</u>	<u>✓</u>	<u>24.9</u>	<u>524</u>	<u>brown</u>	

SAMPLING RECORD

Sampling Method: grab
 Sample Depth: surface
 Time Sampled: 1345

Sample ID: W-SWMP-art
 Dup taken? / Dup ID: SW7 Dup

Sample Appearance:
 Colour: brown
 Odour: N

Turbidity: Low / Medium / High

Sample Container and Preservation:

4x plastic unpreserved.
- brown very milky.

OBSERVATIONS

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

Notes: _____

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: Aug 28, 2013
 Sampled By: Debon W, Jessica H.

* Calibrated pH
 Combo pen:
 for pH 4.0
 pH 7.0
 and EC: 1413 $\mu\text{S}/\text{cm}$

SITE DATA

Time	<u>9:48 am</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	<u>Yes</u> / No
Flow Rate	

Location ID: W SWMP-IN

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes</u> / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μS	pH pH Units	Redox Potential mV	Temperature $^{\circ}\text{C}$	Turbidity meter	Colour	Odour
<u>9:55 am</u>		<u>318 μS</u>	<u>8.79</u>		<u>24.3</u>	<u>235 NTU</u>	<u>Milky light brown.</u>	<u>No odour. No sheen observed.</u>

SAMPLING RECORD

Sampling Method: _____
 Sample Depth: _____
 Time Sampled: _____ No sample taken
 Sample Appearance:
 Colour: _____
 Odour: _____

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

Turbidity: Low / Medium / (High)

Sample Container and Preservation:

OBSERVATIONS

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

Notes: Pond water level very low, water was silty (milky). Took turbidity reading first. Water appeared too low to warrant a discharge. Pond is approximately 30% full, all looks brown and silty. NO controlled discharge, water level too low. Pond likely has capacity for another 3 or 4 rainfalls before a discharge.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: 28th Aug 2013

Client: Covanta

Sampled By: Devon, Jessica

Site Location: Clarington

SITE DATA

Time	<u>9:10:15am</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	<input checked="" type="radio"/> Yes / <input type="radio"/> No
Flow Rate	

Location ID	<u>E SWMP-N</u>
-------------	-----------------

Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes / <input type="radio"/> No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour

SAMPLING RECORD

Sampling Method: _____

Sample ID: SW

Sample Depth: _____

Dup taken? / Dup ID: SW Dup

Time Sampled: _____

Sample Appearance:

Colour: _____

Turbidity: Low / Medium / High

Odour: _____

Sample Container and Preservation:

Construction occurring.

Water levels very low, silty. - changes made to podd, split in two. New outfall installed, will not be in service until ditch is installed by Region on exterior of fence line - until then, pipe will continue to be run to old location.

Out fall location will change once Region installs ditch.

OBSERVATIONS

Weather Conditions:

Temperature: _____

Current Precipitation: _____

Precipitation of past 24 / 48 hrs: _____

Notes: _____

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-19-0155
 Client: Coovanta
 Site Location: Clarrington

Date: Sept 30 2013
 Sampled By: D. Wetheridge / E. Marsch

SITE DATA

Time	<u>10am</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>N/A</u>
Stream Width (m)	<u>N/A</u>
Stagnant	Yes / No
Flow Rate	

Location ID: E + W - SWMP - OUT

Logger Number	<input checked="" type="checkbox"/>
Logger Download Time	<input checked="" type="checkbox"/>
Photos Taken	<input checked="" type="checkbox"/> (Yes / No (#))
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
	<u>N/A</u>							

SAMPLING RECORD

Sampling Method: /
 Sample Depth: /
 Time Sampled: /
 Sample Appearance:
 Colour: /
 Odour: /

Sample ID: N/A
 Dup taken? / Dup ID: /

Turbidity: Low / Medium / High

Sample Container and Preservation:

Not Sampled

OBSERVATIONS

Weather Conditions: Temperature: 15 $^{\circ}$ C - Overcast
 Current Precipitation: none
 Precipitation of past 24 / 48 hrs: 75mm
 Notes: DRY

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: Convanta
 Site Location: Claxington

Date: Sept 30, 2013
 Sampled By: D. Witheridge / E. Marsch

SITE DATA

Time	<u>9:45</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	<u>~1m (1x1mpod)</u>
Stagnant	Yes <input type="radio"/> No <input checked="" type="radio"/>
Flow Rate	<u>low</u>

Location ID	<u>SW1</u>
-------------	------------

Logger Number	
Logger Download Time	
Photos Taken	Yes / No (#) <u>Yes</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity (mS or μS)	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>9:45</u>		<u>220</u>	<u>6.38</u>		<u>22.4</u>	<u>24.6</u>	<u>clear</u>	<u>none no sheen</u>

SAMPLING RECORD

Sampling Method: Grab - pole Sample ID: SW1
 Sample Depth: 6" Dup taken? / Dup ID: No
 Time Sampled: 9:45
 Sample Appearance: Colour: clear Turbidity: Low / Medium / High
 Odour: none

Sample Container and Preservation: General / Solids 750ml, no preservative

OBSERVATIONS

Weather Conditions: Temperature: overcast, 15°C
 Current Precipitation: > 1mm
 Precipitation of past 24 / 48 hrs: > 6mm

Notes: Change of sampling location to upstream
Some suds / bubbles noted at sampling location

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-055
 Client: Convanta
 Site Location: Clarrington

Date: Sept 30 2013
 Sampled By: D. Withridge / G. Marsch

SITE DATA

Time	<u>10:15</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>N/A</u>
Stream Width (m)	<u>N/A</u>
Stagnant	Yes / No
Flow Rate	

Location ID	<u>SW 2</u>
-------------	-------------

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	<u>multiple</u>

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
<u>N/A</u>								

SAMPLING RECORD

Sampling Method: _____
 Sample Depth: _____
 Time Sampled: _____
 Sample Appearance:
 Colour: _____
 Odour: _____

Sample ID: N/A
 Dup taken? / Dup ID: _____

Turbidity: Low / Medium / High

Sample Container and Preservation:

Not sampled

OBSERVATIONS

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

Notes: Dry
New location not determined

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: Sept 30 / 2013
 Sampled By: D. Whitridge / E. Marsch

SITE DATA

Time	<u>10:30</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>0.18</u>
Stream Width (m)	<u>0.00</u>
Stagnant	Yes / <u>No</u>
Flow Rate	<u>low</u>

Location ID	<u>SW 3</u>
-------------	-------------

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>10:35</u>		<u>220</u>	<u>6.63</u>		<u>20.5</u>	<u>12.91</u>	<u>Slightly milky</u>	<u>None No smel</u>

SAMPLING RECORD

Sampling Method: grab - pole
 Sample Depth: surface
 Time Sampled: 10:35
 Sample Appearance:
 Colour: milky/clear
 Odour: None

Sample ID: SW 3
 Dup taken? / Dup ID: /
 Turbidity Low / Medium / High

Sample Container and Preservation:
4 General / Solid 750 mL - no preserve

OBSERVATIONS

Weather Conditions:
 Temperature: 15°C - overcast
 Current Precipitation: none
 Precipitation of past 24 / 48 hrs: 75mm

Notes: _____

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: Convanta
 Site Location: Clarrington

Date: Sept. 30/2013
 Sampled By: D. Witheridge / E. Marsch

SITE DATA

Time	<u>10:45</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>0.10m</u>
Stream Width (m)	<u>2.40m</u>
Stagnant	Yes / <input checked="" type="radio"/> No
Flow Rate	<u>very low</u>

Location ID: SW4

Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes / No (# <u>1</u>)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>11:10</u>		<u>>20</u>	<u>6.68</u>		<u>26.5</u>	<u>9.20</u>	<u>clear / milky</u>	<u>None</u>

SAMPLING RECORD

Sampling Method: grab-pole Sample ID: SW4
 Sample Depth: surface Dup taken? / Dup ID: _____
 Time Sampled: 10:55
 Sample Appearance: clear / milky Turbidity: Low / Medium / High
 Colour: clear / milky
 Odour: none

Sample Container and Preservation: 1/2 general / solid 25ml - no preservative

OBSERVATIONS

Weather Conditions: Temperature: 15°C - overcast
 Current Precipitation: none
 Precipitation of past 24 / 48 hrs: 75mm

Notes: Almost stagnant - water moving at S entrance of tunnel. have foam

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-151-0155
 Client: CONVANTA
 Site Location: CLARKIN TON

Date: OCT. 7/13
 Sampled By: D. WITKOWSKI/E. MANGCH

SITE DATA

Time	<u>10:15am</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	Yes / No
Flow Rate	

Location ID: W-SWMP-W

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
<u>10:20</u>		<u>1.14</u>	<u>8.21</u>		<u>15.5</u>	<u>86.67</u>	<u>muddy light brown</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: Grab pole Sample ID: W-SWMP
 Sample Depth: Surface Dup taken? / Dup ID: NO
 Time Sampled: 10:15
 Sample Appearance: Cloudy brown Turbidity: Low / Medium / High
 Colour: Cloudy brown
 Odour: None

Sample Container and Preservation:
6x 750 ml General/Solids
No preservation

OBSERVATIONS

Weather Conditions:
 Temperature: 10 $^{\circ}$ C, Rainy
 Current Precipitation: ~1mm
 Precipitation of past 24 / 48 hrs: ~15mm

Notes: Water muddy, light brown, cannot see bottom. Water flowing from west side pool to east through 2 of 3 culverts. Most NE culvert looks to be clogged.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-151-0155
 Client: CONVANTA
 Site Location: CLARKINATO W

Date: OCT. 7/13
 Sampled By: D. WITKORNE/E. MANSCH

SITE DATA

Time	<u>1pm</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>2"</u>
Stream Width (m)	<u>80"</u>
Stagnant	<u>Yes / No</u>
Flow Rate	<u>N/A</u>

Location ID: W-SWMP-OUT

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
<u>1:35</u>		<u>1.02</u>	<u>8.26</u>		<u>15.9</u>	<u>55.4</u>	<u>clean/milky</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: ~~Grab~~ Direct bottle Sample ID: W-SWMP-OUT
 Sample Depth: surface Dup taken? / Dup ID: No
 Time Sampled: 1:25

Sample Appearance: clean/milky Turbidity: Low / Medium / High
 Colour: clean/milky
 Odour: none

Sample Container and Preservation:

6x 750ml bottles - general/solid
No preservative

OBSERVATIONS

Weather Conditions:
 Temperature: 15 $^{\circ}$ C, overcast, high winds
 Current Precipitation: none
 Precipitation of past 24 / 48 hrs: ~15mm

Notes: Water pooled - not from discharge ponds
So likely surface runoff from rain water
Strong sewage odour in area

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: CONVANTA
 Site Location: CLARKIN TON

Date: OCT. 7/13
 Sampled By: D. WILKINSON/E. MANNICH

SITE DATA

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

Location ID: E-SWMP-IN

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity <u>mS</u> or <u>µS</u>	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>10am</u>		<u>2.15</u>	<u>8.08</u>		<u>16.3</u>	<u>39.56</u>	<u>Brownish green cloudy</u>	<u>None</u>

SAMPLING RECORD

Sampling Method: Grab Pole
 Sample Depth: surface
 Time Sampled: 10 am

Sample ID: E-SWMP
 Dup taken? / Dup ID: No

Sample Appearance:
 Colour: cloudy/brown
 Odour: _____

Turbidity: Low / Medium / High

Sample Container and Preservation:

6 x 750mL general/solids
No preservative

OBSERVATIONS

Weather Conditions:
 Temperature: 10°C, Rainy
 Current Precipitation: 0mm

Precipitation of past 24 / 48 hrs: ~15mm

Notes: Water cloudy - cannot see bottom of pond. Flowing through 3 culverts from east section of pond to W

[Handwritten scribbles]

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: CONVANTA
 Site Location: CLARKIN TOWN

Date: OCT. 7/13
 Sampled By: D. WILHELM/ E. MANSCH

SITE DATA

Time	<u>1pm</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>2^u</u>
Stream Width (m)	<u>80^u</u>
Stagnant	<u>(Yes) / No</u>
Flow Rate	<u>N/A</u>

Location ID: E-swamp-out

Logger Number	
Logger Download Time	
Photos Taken	<u>(Yes) / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>1:35</u>		<u>1.08</u>	<u>8.25</u>		<u>16.0</u>	<u>39.96</u>	<u>clear / milky</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: ~~Grab~~ Direct bottle Sample ID: E-swamp-out

Sample Depth: Surface Dup taken? / Dup ID: NO

Time Sampled: 1:24pm

Sample Appearance: clear / milky

Colour: clear / milky
 Odour: none

Turbidity: Low / Medium / High

Sample Container and Preservation:

6x 750ml bottles - general/solids
No preservative.

OBSERVATIONS

Weather Conditions:

Temperature: 15°C, overcast, high winds

Current Precipitation: none

Precipitation of past 24 / 48 hrs: ~15mm

Notes: Water pooled in area - not discharge from ponds, so likely runoff from surface rainwater. Strong sewage odour in area.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: CONVANTIA
 Site Location: CLARKINATON

Date: OCT. 7/13
 Sampled By: D. WITTEKAMP/E. MANGCH

SITE DATA

Time	<u>11am</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>8"</u>
Stream Width (m)	<u>84"</u>
Stagnant	Yes / <u>No</u>
Flow Rate	<u>Med/high</u>

Location ID	<u>SW1</u>
Logger Number	
Logger Download Time	
Photos Taken	<u>Yes</u> / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
<u>11:10</u>		<u>0.92</u>	<u>7.83</u>		<u>15.2</u>	<u>23.00</u>	<u>milky</u>	<u>sewage</u>

SAMPLING RECORD

Sampling Method: Grab pole Sample ID: SW-1
 Sample Depth: _____ Dup taken? / Dup ID: _____
 Time Sampled: 11:10am
 Sample Appearance: Milky clear Turbidity: Low / Medium / High
 Colour: _____
 Odour: sewage

Sample Container and Preservation:
6 x 750 ml bottles - solids / general
No preservative

OBSERVATIONS

Weather Conditions:
 Temperature: 10 $^{\circ}$ C, rainy
 Current Precipitation: ~1mm
 Precipitation of past 24 / 48 hrs: ~15mm
 Notes: Water flowing is milky, but can see to bottom. Strong sewage odour in area.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: CONVANTA
 Site Location: CLARKIN TOWN

Date: OCT. 7/13
 Sampled By: D. WITTMER/KE. MANSCH

SITE DATA

Time	<u>11:15</u>
Surveyed reference point	
Water Depth at Staff Gauge (ft)	<u>3^u</u>
Stream Width (ft)	<u>100^u</u>
Stagnant	Yes / No <input checked="" type="radio"/>
Flow Rate	<u>medium</u>

Location ID	<u>SW2</u>
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Logger Number	
Logger Download Time	
Photos Taken	Yes / No (<input checked="" type="radio"/>)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
<u>11:25</u>		<u>0.86</u>	<u>7.87</u>		<u>14.1</u>	<u>43.49</u>	<u>milky clear</u>	<u>None</u>

SAMPLING RECORD

Sampling Method: grab pole
 Sample Depth: surface
 Time Sampled: 11:20

Sample ID: SW2
 Dup taken? / Dup ID: No

Sample Appearance: milky, clear to bottom
 Colour: None
 Odour: None

Turbidity: Low / Medium / High

Sample Container and Preservation:

6x 750ml bottles - general/solids
NO preservative

OBSERVATIONS

Weather Conditions: 15 $^{\circ}$ C - overcast
 Temperature: 15 $^{\circ}$ C - overcast
 Current Precipitation: None
 Precipitation of past 24 / 48 hrs: ~15mm

Notes: set up new location with stake. Sampled through fence

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: CONVANTA
 Site Location: CLARKINATON

Date: OCT. 7/13
 Sampled By: D. WITHERSPOLE / E. MARISCH

SITE DATA

Time	<u>11:40</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>7"</u>
Stream Width (m)	<u>66"</u>
Stagnant	Yes / <u>No</u>
Flow Rate	

Location ID: SW 3

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes</u> / 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
<u>11:45</u>		<u>0.96</u>	<u>7.92</u>		<u>14.2</u>	<u>26.98</u>	<u>cloudy brown</u>	<u>None</u>

SAMPLING RECORD

Sampling Method: grab pole Sample ID: SW 3
 Sample Depth: Surface Dup taken? / Dup ID: _____
 Time Sampled: 11:45
 Sample Appearance: cloudy brown/keel Turbidity: Low / Medium / High
 Colour: _____
 Odour: None

Sample Container and Preservation:

2x 750 mL - general/solids bottle
No preservative

OBSERVATIONS

Weather Conditions: Temperature: 15°C, overcast
 Current Precipitation: None
 Precipitation of past 24 / 48 hrs: ~15mm
 Notes: Placed new stake

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-151-0155
 Client: CONVANTA
 Site Location: CLARKWATON

Date: OCT. 7/13
 Sampled By: D. WILSON/VE/E. MARCH

SITE DATA

Time	<u>12 pm</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>7"</u>
Stream Width (m)	<u>1.05</u>
Stagnant	Yes / No <input checked="" type="radio"/>
Flow Rate	<u>medium</u>

Location ID: SW 4

Logger Number	
Logger Download Time	
Photos Taken	Yes / No <input checked="" type="radio"/>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>12:00 PM</u>		<u>0.95</u>	<u>7.83</u>		<u>14.8</u>	<u>25.37</u>	19.8 <u>Cloudy</u>	<u>None</u>

SAMPLING RECORD

Sampling Method: grab pole
 Sample Depth: surface
 Time Sampled: 12:05

Sample ID: SW 4

Dup taken? / Dup ID: _____

Sample Appearance:
 Colour: brown/cloudy
 Odour: None

Turbidity: Low / Medium / High

Sample Container and Preservation:

6 x 750ml solids/general bottles
No preservative

OBSERVATIONS

Weather Conditions: Temperature: 15°C, overcast

Current Precipitation: none

Precipitation of past 24 / 48 hrs: 15mm

Notes: Stream cloudy, cannot see to bottom

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: Nov 22 2013

Client: Coranta

Sampled By: EM/JH

Site Location: ~~SWMP-1N~~
E-SWMP-1N

SITE DATA

Time	<u>830 am</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	<u>(Yes) / No Pond.</u>
Flow Rate	

Location ID	<u>E-SWMP-1N</u>
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Logger Number	
Logger Download Time	
Photos Taken	Yes / No (# <u> </u>)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>8:30</u>		<u>943</u>	<u>8.57</u>		<u>7.8</u>	<u>196</u>	<u>Murky brown</u>	<u>NONE.</u>

SAMPLING RECORD

Sampling Method: Pole grab

Sample ID: E-SWMP-1N

Sample Depth:

Dup taken? / Dup ID: Yes E-SWMP-1N-DUP

Time Sampled:

Sample Appearance: Colour:

Turbidity: Low / Medium (High)

Odour:

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions: Temperature: 7°C

Current Precipitation: NONE

Precipitation of past 24 / 48 hrs: Rainfall overnight - 2.4mm

Notes:

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: Covanta
 Site Location: E-SWMP-OUT

Date: Nov 22, 2013
 Sampled By: JH, EM

SITE DATA

Time	9:50
Surveyed reference point	
Water Depth at Staff Gauge (m)	~ 1.5m x 1.5m
Stream Width (m)	Pooling Pond - dept ~ 8"
Stagnant	Yes / <input checked="" type="radio"/> No
Flow Rate	

Location ID: E-SWMP-OUT

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

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
9:50	-	598	9.30	-	4.4	780 AU	Brown Green	NO odour

SAMPLING RECORD

Sampling Method: Grab Sample ID: E-SWMP-OUT
 Sample Depth: _____ Dup taken? / Dup ID: NO
 Time Sampled: _____
 Sample Appearance: Turbidity: Low / Medium / High
 Colour: _____
 Odour: _____

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions: Temperature: 7°C
 Current Precipitation: Rain None
 Precipitation of past 24 / 48 hrs: Rainfall overnight ~ 2-4mm
 Notes: white flakes (large mass) noted in pond at out fall - High turbidity

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155 Date: 22 Nov, 2013
 Client: Covanta Sampled By: JH/EM
 Site Location: SR21 W-SWMP-OUT

SITE DATA

Time	<u>945 am.</u>	Location ID	<u>W-SWMP-OUT</u>
Surveyed reference point		Logger Number	
Water Depth at Staff Gauge (m)		Logger Download Time	
Stream Width (m)	<u>Cascading waterfall from pipe</u>	Photos Taken	<u>(Yes/No (#))</u>
Stagnant	<u>Yes / No</u>	Photo Location	
Flow Rate			

- took sample from mouth of pipe.

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS <u>(µS)</u>	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>945</u>		<u>548</u>	<u>9.35</u>		<u>3.8</u>	<u>25.6</u>	<u>Green</u>	<u>NOM.</u>

SAMPLING RECORD

Sampling Method: Grab Sample ID: W-SWMP-OUT
 Sample Depth: _____ Dup taken? / Dup ID: NO
 Time Sampled: _____
 Sample Appearance: _____
 Colour: _____ Turbidity: Low / Medium / High
 Odour: _____
 Sample Container and Preservation: _____

OBSERVATIONS

Weather Conditions: _____
 Temperature: -7°C
 Current Precipitation: None
 Precipitation of past 24 / 48 hrs: Rainfall overnight ~2-4mm
 Notes: Cascading waterfall from pipe. - Took sample at mouth of pipe.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: Coventry
 Site Location: W-SWMP-IN

Date: Nov 22 / 2013
 Sampled By: EM/SH

SITE DATA

Time	940
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	<input checked="" type="radio"/> Yes / No Pond.
Flow Rate	

Location ID: W-SWMP-IN

Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
940		551	9.41		3.5	25.3	Green	None

SAMPLING RECORD

Sampling Method: Grab-pole
 Sample Depth: Surface
 Time Sampled: _____

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

Sample Appearance:
 Colour: _____
 Odour: _____

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
 Temperature: ~7°C
 Current Precipitation: None
 Precipitation of past 24 / 48 hrs: Rainfall overnight ~ 2.4mm

Notes: _____

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-01SS
 Client: Covanta
 Site Location: SW1

Date: Nov 22 2013
 Sampled By: EM/JH

SITE DATA

Time	<u>9:11am</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>6"</u>
Stream Width (m)	<u>0.5m</u>
Stagnant	Yes / <u>No</u>
Flow Rate	<u>Low</u>

Location ID	<u>SW1</u>
-------------	------------

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes</u> / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>10:11am</u>		<u>449</u>	<u>8.49</u>		<u>5.9</u>	<u>51.1</u>	<u>clear slightly milky</u>	<u>organic sewage</u>

SAMPLING RECORD

Sampling Method: Direct grab Sample ID: SW1
 Sample Depth: _____ Dup taken? / Dup ID: Yes SW1 - Dup
 Time Sampled: _____
 Sample Appearance: _____
 Colour: _____ Turbidity: Low / Medium / High
 Odour: _____

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions: Temperature: ~7°C
 Current Precipitation: None
 Precipitation of past 24 / 48 hrs: Rain overnight ~2-4mm

Notes: _____

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: Covanta
 Site Location: SW2

Date: Nov 22, 2013
 Sampled By: JH EV.

SITE DATA

Time	1021
Surveyed reference point	
Water Depth at Staff Gauge (m)	~10cm.
Stream Width (m)	1m.
Stagnant	Yes / (No)
Flow Rate	Low to med.

Location ID	SW2
-------------	-----

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

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
1021		577	8.26		5.8	23.0	Clear milky brown	No odour.

SAMPLING RECORD

Sampling Method: Pole grab Sample ID: SW2.
 Sample Depth: _____ Dup taken? / Dup ID: _____
 Time Sampled: _____
 Sample Appearance: _____
 Colour: _____ Turbidity: Low / (Medium) / High
 Odour: _____
 Sample Container and Preservation: _____

OBSERVATIONS

Weather Conditions: Temperature: ~7°C
 Current Precipitation: None
 Precipitation of past 24 / 48 hrs: Rain overnight ~2-4mm.
 Notes: Clear, milky brown

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-055
 Client: Covanta
 Site Location: SW 3

Date: NOV 23 2008
 Sampled By: EM/JH

SITE DATA

Time	<u>11 am</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>30 cm</u>
Stream Width (m)	<u>1.5 m</u>
Stagnant	Yes <input type="radio"/> No <input checked="" type="radio"/>
Flow Rate	<u>med-high</u>

Location ID	<u>SW 3</u>
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Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>11 am</u>		<u>930</u>	<u>8.35</u>		<u>5.6</u>	<u>5.53</u>	<u>Clear</u>	<u>None</u>

SAMPLING RECORD

Sampling Method: Pole grab
 Sample Depth: _____
 Time Sampled: _____
 Sample Appearance:
 Colour: _____
 Odour: _____
 Sample Container and Preservation:

Sample ID: SW3
 Dup taken? / Dup ID: Yes SW3-DUP
 Turbidity: Low / Medium / High

OBSERVATIONS

Weather Conditions:
 Temperature: 7°C
 Current Precipitation: None
 Precipitation of past 24 / 48 hrs: Rain overnight ~2-4mm
 Notes: Clear, no odour, w/s

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: Covanta
 Site Location: SW4

Date: November 22, 2013
 Sampled By: JH, EMT

SITE DATA

Time	<u>1043</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>30cm</u>
Stream Width (m)	<u>2m</u>
Stagnant	Yes / <u>(No)</u>
Flow Rate	<u>Med-high</u>

Location ID: SW4

Logger Number	
Logger Download Time	
Photos Taken	<u>(Yes)</u> / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>1043</u>		<u>8.34</u>	<u>8.32</u>		<u>5.6</u>	<u>14.4</u>	<u>Clear fish</u>	<u>no odour.</u>

SAMPLING RECORD

Sampling Method: Pole grab
 Sample Depth: _____
 Time Sampled: _____
 Sample Appearance:
 Colour: _____
 Odour: _____

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

Turbidity: Low / Medium / High
Med -> Low

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
 Temperature: 7°C
 Current Precipitation: None
 Precipitation of past 24 / 48 hrs: Rain overnight ~2-4mm
 Notes: No odour, clear mostly. N/S

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: Coventry
 Site Location: outfalls; ESWMP-out

Date: 20 Dec 2013
 Sampled By: LM/JH

SITE DATA

Time	<u>9:52</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>2"</u>
Stream Width (m)	<u>1.5m</u>
Stagnant	<u>Yes / No</u>
Flow Rate	<u>NIL</u>

Location ID	
-------------	--

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

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
	<u>/</u>	<u>2756</u>	<u>8.33</u>	<u>/</u>	<u>3.9</u>	<u>MU 2.85</u>	<u>clear</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: _____ Sample ID: _____
 Sample Depth: _____ Dup taken? / Dup ID: _____
 Time Sampled: _____
 Sample Appearance: _____ Turbidity: Low / Medium / High
 Colour: _____
 Odour: _____
 Sample Container and Preservation: _____

OBSERVATIONS

Weather Conditions: Temperature: 0°
 Current Precipitation: none to slight drizzle
 Precipitation of past 24 / 48 hrs: 5mm
 Notes: no water movement / inflow, clear molms (organic steam slopes rip rap, silty sediment at bottom of pipe and on rip rap base. mated?)

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-DISS Date: 20 Dec 2013
 Client: Covanta Sampled By: LM / JH
 Site Location: Outfalls: WSWMP-OUT

SITE DATA

Time	<u>9:42</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>FROZEN</u>
Stream Width (m)	<u>2.5m</u>
Stagnant	<u>Yes</u> / No
Flow Rate	

Location ID	
-------------	--

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

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour

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: 0 $^{\circ}$
 Current Precipitation: none to slight drizzle
 Precipitation of past 24 / 48 hrs: 5mm
 Notes: water in ditch is frozen, snow covered slopes
appeared icy, rip rap with uneven terrain, no
water outflow observed

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-151-0155
 Client: Covanta
 Site Location: SW1

Date: 20 Dec 2013
 Sampled By: LM / JH

SITE DATA

Time	<u>9:17</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>5"</u>
Stream Width (m)	<u>1 m</u>
Stagnant	Yes / <u>No</u>
Flow Rate	<u>steady</u>

Location ID	<u>SW1</u>
-------------	------------

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

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>9:17</u>	<u>/</u>	<u>3999</u>	<u>7.96</u>	<u>/</u>	<u>0.0</u>	<u>NTU 76.7</u>	<u>murky brown</u>	<u>no odour</u>

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: 1°C
 Current Precipitation: Light rain - intermittent
 Precipitation of past 24 / 48 hrs: 5-10 mm
 Notes: murky brown, partial snow/ice coverage, steady flow, road muddy and clear of snow, salt noted on shoulder,

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-01SS
 Client: Coventry
 Site Location: SW3

Date: 20 Dec 2013
 Sampled By: JH/LM

SITE DATA

Time	<u>1047</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>0.25m.</u>
Stream Width (m)	<u>←</u>
Stagnant	Yes / <input checked="" type="radio"/> No
Flow Rate	<u>med.</u>

Location ID	<u>SW3</u>
-------------	------------

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

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>1047</u>		<u>3999</u>	<u>8.14</u>		<u>0.0</u>	<u>13.6</u>	<u>Clear</u>	<u>no odour.</u>

SAMPLING RECORD

Sampling Method: _____ Sample ID: _____
 Sample Depth: _____ Dup taken? / Dup ID: _____
 Time Sampled: _____
 Sample Appearance: _____ Turbidity: Low / Medium / High
 Colour: _____
 Odour: _____
 Sample Container and Preservation: _____

OBSERVATIONS

Weather Conditions: Temperature: ~1°
 Current Precipitation: Yes light rain
 Precipitation of past 24 / 48 hrs: 5mm ~ 5mm
 Notes: Snow covered banks, flashing stream, ice in stream,

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: Covanta
 Site Location: SW2

Date: 20 Dec 2013
 Sampled By: JH/LM

SITE DATA

Time	<u>10:36</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>Majority Frozen on surface.</u>
Stream Width (m)	<u>1.75m</u>
Stagnant	<input checked="" type="radio"/> Yes / No
Flow Rate	<u>—</u>

Location ID	
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Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour

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: 1°C
 Current Precipitation: None
 Precipitation of past 24 / 48 hrs: ~5mm
 Notes: Snow on banks, surface of stream ^{frozen} patchy with ice. Colour - white-grey (frozen, colour).

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: Conterra
 Site Location: SW4

Date: 20 Dec 2013
 Sampled By: LFL/JH

SITE DATA

Time	<u>10:16</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>5"</u>
Stream Width (m)	<u>2.5m</u>
Stagnant	Yes / No
Flow Rate	<u>slow</u>

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

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
		<u>3999</u>	<u>7.96</u>		<u>0.9</u>	<u>12.2</u>	<u>9.54 / brown</u>	

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: 0°
 Current Precipitation: slight drizzle
 Precipitation of past 24 / 48 hrs: 5mm
 Notes: very slow moving, slight turbidity, no/mo open water (no ice/snow) coverage

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: Covanta
 Site Location: E-SWMP-OUT

Date: Jan 13, 2014
 Sampled By: JH/LM

SITE DATA

Time	<u>10:55</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>0.30 m</u>
Stream Width (m)	<u>3 m</u>
Stagnant	<u>Yes</u> No
Flow Rate	<u>Very low</u>

Location ID: E-SWMP-OUT

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes</u> / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour

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: Discharge pipe was not found. Excavations to the east was expanded on the ditch. Ditch water observed was mostly ice covered, not flowing, low turbidity. Slope to steep to scale

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: Cananda
 Site Location: W-SWMP-011

Date: Apr 13, 2014
 Sampled By: JH/LM

SITE DATA

Time	<u>10:45</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>0.30 m</u>
Stream Width (m)	<u>2 m</u>
Stagnant	Yes / <u>No</u>
Flow Rate	<u>slow</u>

Location ID: W-SWMP-011

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes</u> / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour

SAMPLING RECORD

Sampling Method: _____ Sample ID: _____
 Sample Depth: _____ Dup taken? / Dup ID: _____
 Time Sampled: _____
 Sample Appearance: _____ Turbidity: Low / Medium / High
 Colour: _____
 Odour: _____
 Sample Container and Preservation: _____

OBSERVATIONS

Weather Conditions: Temperature: _____
 Current Precipitation: _____
 Precipitation of past 24 / 48 hrs: _____
 Notes: slope too steep to scale, water clear, misty ice covered, slow flow

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155 Date: Jan 13, 2014
 Client: COVANTA Sampled By: JBA/LM
 Site Location: SW1

SITE DATA

Time	<u>10:15</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>0.15 m</u>
Stream Width (m)	<u>1.5 m</u>
Stagnant	Yes / <u>No</u>
Flow Rate	<u>slow</u>

Location ID	<u>SW1</u>
-------------	------------

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes</u> / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>12:15</u>		<u>3999</u>	<u>8.13</u>		<u>1.4</u>	<u>7063</u>	<u>clear</u>	<u>none</u>

flushing

SAMPLING RECORD

Sampling Method: _____ Sample ID: No sample taken.
 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: water clear, Good flow, no silt, no odour
Ice and snow on banks. Ice in stream - ice cover + snow. Salt noted on
road and banks. Construction occurring on road away to the west of
SW1 by Coca paving, just south of Covanta site south boundary.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: Coventia
 Site Location: SW2

Date: Jan 13, 2014
 Sampled By: JH/LM

SITE DATA

Time	<u>11:25</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>2" water over ice</u>
Stream Width (m)	<u>3.5m width</u>
Stagnant	Yes / No
Flow Rate	<u>Slow flow, 460</u>

Location ID	<u>SW2</u>
-------------	------------

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes</u> / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity NTU	Colour	Odour
<u>11:25</u>		<u>3160μS</u>	<u>7.98</u>		<u>0.3$^{\circ}$C</u>	<u>Low-med 27.8</u>	<u>Slight brown / murky color</u>	<u>None</u>

SAMPLING RECORD

Sampling Method: Took grab pole sample.
 Sample Depth: 2"
 Time Sampled: 11:25

Sample ID: SW2
 Dup taken? / Dup ID: No dup taken.

Sample Appearance:
 Colour: Slight brown / murky color.
 Odour: None.

Turbidity: Low / Medium / High
Low to medium turbidity.

Sample Container and Preservation:
TSS + Turbidity bottles. No preservative.

OBSERVATIONS

Weather Conditions:
 Temperature: -3 $^{\circ}$ C.
 Current Precipitation: None.
 Precipitation of past 24 / 48 hrs: Some \approx 1-5 mm

Notes: 2" of water over ice, appeared to be turbid, no odour, no silt.
Ice cover on banks and on parts of surface of stream. Snow on surrounding areas.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155
 Client: Covanta
 Site Location: Sw3

Date: Jan 13, 2014
 Sampled By: JH/LM

SITE DATA

Time	<u>11:42</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>0.5m</u>
Stream Width (m)	<u>1 m.</u>
Stagnant	Yes / <u>No</u>
Flow Rate	<u>Fastmoving.</u>

Location ID: Sw3

Logger Number	
Logger Download Time	
Photos Taken	<u>(Yes / No (#))</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
<u>11:42</u>		<u>1,116 μS</u>	<u>8.17</u>		<u>0.5$^{\circ}$C</u>	<u>4.76</u>	<u>clear</u>	<u>No odour / no sheen</u>

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: ~5 $^{\circ}$ C
 Current Precipitation: None.
 Precipitation of past 24 / 48 hrs: ~1-5mm
 Notes: Fast-moving, clear water, no odour, no sheen, foam noted in water collecting behind ice bridge, some foam noted in water in general. Ice cover and snow on banks and ice in winter as well.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151 70155 Date: Jan 13, 2014
 Client: Coventia Sampled By: JSH/LH
 Site Location: SW4

SITE DATA

Time	<u>11:00</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>0.40m</u>
Stream Width (m)	<u>2.5m</u>
Stagnant	Yes / <u>No</u>
Flow Rate	

Location ID SW4

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes</u> / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity <u>ms of μS</u>	pH pH Units	Redox Potential mV	Temperature °C	Turbidity <u>NTU</u>	Colour	Odour
<u>11:00</u>		<u>1,440</u>	<u>8.25</u>		<u>1.8</u> <u>0.3</u>	<u>4.48</u>	<u>light brown</u>	

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: water slightly translucent, light brown, no odour, no sheen, slow to med flow, two ticks were observed flying away from sample location. Snow on banks and some ice on banks and in stream.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: March 31, 2014
 Sampled By: Kyle Shearer

SITE DATA

Time	<u>1449</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>0.3m</u>
Stream Width (m)	<u>0.5m</u>
Stagnant	Yes / <u>No</u>
Flow Rate	<u>medium</u>

Location ID: W-SUMP-OUT

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>1449</u>	<u>-</u>	<u>685</u>	<u>8.90</u>	<u>-</u>	<u>2.2</u>	<u>103 / 110</u>	<u>slightly cloudy</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: pole grab Sample ID: _____
 Sample Depth: _____ Dup taken? / Dup ID: Yes DP2
 Time Sampled: _____
 Sample Appearance: _____ Turbidity: Low / Medium / High
 Colour: _____
 Odour: _____

Sample Container and Preservation: Notes
Most likely temporary outlet. See photos. outlet into north swale, north of access road. Minimal E+SC measures downstream of outlet. Significant construction activities taking place.

OBSERVATIONS

Weather Conditions: Temperature: 9°C
 Current Precipitation: -
 Precipitation of past 24 / 48 hrs: -
 Notes: Snow melt creating increased runoff

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: March 31, 2014
 Sampled By: Kyle Shearer

SITE DATA

Time	<u>1418</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>0.5m</u>
Stream Width (m)	<u>1m</u>
Stagnant	<u>Yes / No</u> -
Flow Rate	<u>low</u>

Location ID: SW1

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

slight flow

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity NTU	Colour	Odour
<u>1420</u>	<u>-</u>	<u>1635</u>	<u>8.83</u>	<u>-</u>	<u>6.7</u>	<u>15.6</u> <u>15.4</u>	<u>clear</u> <u>slightly cloudy</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: Polegrab Sample ID: SW1
 Sample Depth: _____ Dup taken? / Dup ID: DUPI
 Time Sampled: _____
 Sample Appearance: _____ Turbidity: Low / Medium / High
 Colour: _____
 Odour: _____

Sample Container and Preservation: Notes
Sampled in pooled area at culvert outlet.
Construction in swale taking place north of SW1.
See photos for details

OBSERVATIONS

Weather Conditions: Temperature: 9°C
 Current Precipitation: -
 Precipitation of past 24 / 48 hrs: _____
 Notes: Snowmelt creating increased runoff

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Client: CONVANTA

Site Location: _____

Date: March 31, 2014

Sampled By: Kyle Shearer

SITE DATA

Time	<u>1541</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>1 ft (0.3m)</u>
Stream Width (m)	<u>~ 2m</u>
Stagnant	Yes / <u>No</u>
Flow Rate	<u>low</u>

Location ID	<u>SW2</u>
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Logger Number	
Logger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>1602</u>		<u>1065</u>	<u>8.22</u>		<u>2.3</u>	<u>546</u> <u>555</u>	<u>light brown</u> <u>slightly silty</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: pole grab

Sample Depth: _____

Time Sampled: _____

Sample Appearance: _____

Colour: _____

Odour: _____

Sample ID: _____

Dup taken? / Dup ID: Yes DUP3

Turbidity: Low / Medium / High

Sample Container and Preservation: Notes
Partial Ice cover. Slightly brown cloudy
Sediment on ice, melting into ~~tributary~~ tributary.

OBSERVATIONS

Weather Conditions: _____

Temperature: 9°C

Current Precipitation: -

Precipitation of past 24 / 48 hrs: _____

Notes: Snowmelt creating increased runoff

ING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Client: CONVANTA

Site Location: _____

Date: March 31, 2014

Sampled By: Kyle Shearer

SITE DATA

Time	<u>1622</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>0.8m</u>
Stream Width (m)	<u>2.5m</u>
Stagnant	Yes / <u>(No)</u>
Flow Rate	<u>High</u>

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

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or <u>(µS)</u>	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>1625</u>		<u>505</u>	<u>8.24</u>		<u>2.1</u>	<u>369</u> <u>374</u>	<u>Brown,</u> <u>Silty</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: Polegrab

Sample Depth: _____

Time Sampled: _____

Sample Appearance: _____

Colour: _____

Odour: _____

Sample ID: _____

(Dup taken?) / Dup ID: Yes DUP4

Turbidity: Low / Medium / (High)

Sample Container and Preservation: _____

OBSERVATIONS

Weather Conditions:

Temperature: 9°C

Current Precipitation: -

Precipitation of past 24 / 48 hrs: -

Notes: Snowmelt creating increased runoff. ~~to be added~~

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: March 31, 2014
 Sampled By: Kyle Shearer

SITE DATA

Time	<u>1651</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>1.0m</u>
Stream Width (m)	<u>2.5m</u>
Stagnant	Yes / <u>No</u>
Flow Rate	<u>high</u>

Location ID	<u>SW4</u>
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Logger Number	
Logger Download Time	
Photos Taken	Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
<u>1651</u>		<u>552</u>	<u>8.28</u>		<u>1.7</u>	<u>335</u> <u>323</u>	<u>Brown</u> <u>silty</u>	<u>none</u>

SAMPLING RECORD

Sampling Method: Polegrab Sample ID: _____
 Sample Depth: _____ Dup taken? / Dup ID: Yes DUPS
 Time Sampled: _____
 Sample Appearance: Colour: brown Turbidity: Low / Medium / High
 Odour: _____

Sample Container and Preservation:
- high turbidity, high flow rate

OBSERVATIONS

Weather Conditions:
 Temperature: 9 $^{\circ}$ C
 Current Precipitation: —
 Precipitation of past 24 / 48 hrs: _____
 Notes: No stake or flagging tape at SW4. Snowmelt creating increased runoff / high flow.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: July 2nd 2013

Client: Covanta

Sampled By: Jessica, Linda

Site Location: Clarrington

SITE DATA

Time	<u>3:15</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	<u>Water level lower.</u>
Stagnant	<input checked="" type="radio"/> Yes / No
Flow Rate	

Location ID: ETWSWMP-00T

Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour

SAMPLING RECORD

Sampling Method: _____

Sample ID: EWSWMP

Sample Depth: _____

Dup taken? / Dup ID: Slw Dup

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: No sheen or odours observed at outlets pipes.

Tall vegetation surrounding pipes.

- slight milky streak in water from E-outlet. - no rainbow colour

- no controlled discharge. - no oily appearance.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: 2nd July, 2013

Client: Covanta

Sampled By: Jessica Wida

Site Location: Clarrington

SITE DATA

Time	<u>3:35 pm</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	<u>Water levels low</u>
Stagnant	<input checked="" type="radio"/> Yes <input type="radio"/> No
Flow Rate	

Location ID: SW1

Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes / <input type="radio"/> No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour

SAMPLING RECORD

Sampling Method: _____

Sample ID: SW1

Sample Depth: _____

Dup taken? / Dup ID: SW1 - Dup

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: Upstream - algae noted at culvert on other side of road - upstream of SW1.

Algae noted at SW1 location.

Organic (breaks apart) sheen noted (5"²), no oily sheen observed. No odours. Snails present. Water level low, very low flow.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: July 2nd, 2013

Client: Covanta

Sampled By: Jessica Linds

Site Location: Clarrington

SITE DATA

Time	
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	Yes <input type="radio"/> No <input checked="" type="radio"/>
Flow Rate	Medium flow -

Location ID: SW2

Logger Number	
Logger Download Time	
Photos Taken	Yes <input checked="" type="radio"/> No <input type="radio"/> (#)
Photo Location	

water level was higher than usual

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour

SAMPLING RECORD

Sampling Method: _____

Sample ID: SW

Sample Depth: _____

Dup taken? / Dup ID: Sto Dup

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: Water level was higher than usual, slightly cloudy, medium flow

Small section of pollen-like build up.

Organic debris present.

No odour, no sheen present.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: 2nd July 2013

Client: Covanta

Sampled By: Jessica, Linda

Site Location: Clarrington

SITE DATA

Time	<u>4:03pm</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	Yes / <input checked="" type="radio"/> No
Flow Rate	<u>Low flow, low water level.</u>

Location ID: SW 4

Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
							<u>light brown</u>	<u>No odour</u>

SAMPLING RECORD

Sampling Method: _____

Sample ID: SW

Sample Depth: _____

Dup taken? / Dup ID: SW Dup

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: Ducks, water spiders.

Low flow, low water level,

No silt, organic debris, tall grass on banks.

No odour

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: 2nd July 2013

Client: Covanta

Sampled By: Jessica, Linda

Site Location: Clarington

SITE DATA

Time	<u>4:35 pm.</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	Yes / <u>(No)</u>
Flow Rate	<u>Medium flow</u>

Location ID: SW 3

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

water level is lower than usual.

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour

SAMPLING RECORD

Sampling Method: _____

Sample ID: SW

Sample Depth: _____

Dup taken? / Dup ID: SW Dup

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: Tall grass on banks.

clear water, pollen/seeds present.

No silt

No odour.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: JULY 2, 2013

Client: Covanta

Sampled By: N. GORSKI & J. HANSCHEDEL

Site Location: Clarington

SITE DATA

Time	<u>1:55 PM</u>
Surveyed reference point	<u>N/A</u>
Water Depth at Staff Gauge (m)	<u>N/A</u>
Stream Width (m)	<u>N/A</u>
Stagnant	<u>(Yes) / No</u>
Flow Rate	<u>N/A</u>

Location ID: E_SWAMP_IN_OUTSIDE

Logger Number	<u>N/A</u>
Logger Download Time	<u>N/A</u>
Photos Taken	<u>Yes / No (# <u>MANY</u>)</u>
Photo Location	<u>✓</u>

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour

← N/A (SPILL RESPONSE FOLLOW-UP TARGETING PHC)

SAMPLING RECORD

Sampling Method: GRAB

Sample ID: E_SWAMP_IN_OUTSIDE

Sample Depth: SURFACE

Dup taken? / Dup ID: SW - Dup

Time Sampled: 1:55 PM

YES - E-SWAMP-IN-OUTSIDE DUP (F2-F4 BOTTLES ONLY)

Sample Appearance: Colour: LT BROWN

Turbidity: Low / Medium / High

Odour: SLIGHTLY OBTUSE

Sample Container and Preservation: (1x1L Amber)

STANDARD PRESERVATIVES FOR OIL/GREASE, F2-F4 (2x 500ml Amber), DUP (2x 500ml Amber)

OBSERVATIONS

Weather Conditions: Temperature: Overcast, 24°C

Current Precipitation: NONE

Precipitation of past 24 / 48 hrs: 0mm/0mm AT OSKAWA (CLIMATE ID: 6155875)

Notes: SAMPLED SAME LOCATION AS OUTSIDE OF BOOM AS DURING SPILL RESPONSE EFFORTS.

LIGHT/WHITE MILKY FILM/SHEEN OBSERVED AT SURFACE, SOURCE AND COMPOSITION IS UNCERTAIN. FILM/SHEEN WAS SUCCESSFULLY SAMPLED TO DETERMINE COMPOSITION.

DISTURBANCE OF BANKS AT THIS LOCATION & ELSEWHERE OUTSIDE OF

BOOM LED TO A HYDROCARBON SHEEN DETACHING FROM SOIL ON THE BANKS AND FLOATING INTO POND IN DISSEMINATED GLOBULES. THIS SHEEN WAS SUBSEQUENTLY SAMPLED USING A SERIES OF F2-F4 BOTTLES (SEE OTHER SAMPLING FORMS)

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: JULY 2, 2013

Client: Covanta

Sampled By: N. GORSKI + J. ADRIAN

Site Location: Clarington

SITE DATA

Time	<u>2:00 PM</u>
Surveyed reference point	<u>N/A</u>
Water Depth at Staff Gauge (m)	<u>N/A</u>
Stream Width (m)	<u>N/A</u>
Stagnant	<u>Yes / No</u>
Flow Rate	<u>N/A</u>

Location ID	<u>E_SWAMP_IN_INSIDE</u>
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Logger Number	<u>N/A</u>
Logger Download Time	<u>N/A</u>
Photos Taken	<u>Yes / No (# <u>N/A</u>)</u>
Photo Location	<u>✓</u>

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or µS	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour

← N/A
(SPEL RESPONSE FOLLOW UP THROUGH PHE)

SAMPLING RECORD

Sampling Method: GRAB

Sample ID: E_SWAMP_IN_INSIDE

Sample Depth: SURFACE

Dup taken? / Dup ID: SW Dup <PF>

Time Sampled: 2:00 PM

YES, E_SWAMP_IN_INSIDE DUP (F2-F4 BOTTLES ONLY)

Sample Appearance: Colour: LT BROWN

Turbidity: Low / Medium / High

Odour: SLIGHT ORGANIC ODOR

Sample Container and Preservation:

STANDARD PRESERVATIVES FOR ALL GASES (16 L AMBER), F2-F4 (2x 500 mL AMBER), DUP (2x 500 mL AMBER)

OBSERVATIONS

Weather Conditions: Temperature: OVERCAST, 24°C

Current Precipitation: NONE

Precipitation of past 24 / 48 hrs: 0mm / 0mm AT OSHAWA (CLIMATE ID: 6155875)

Notes: SAMPLED SAME LOCATION INSIDE OF BOOM AS DURING SPILL RESPONSE EFFORTS.

SPILL OBSERVED AT SURFACE AND SUCCESSFULLY SAMPLED.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: JULY 2 2013

Client: Covanta

Sampled By: N. KOSKI & J. HOSCHOW

Site Location: Clarington

SITE DATA

Time	<u>2:15 PM - #1 / #2 2:30 - #3</u>
Surveyed reference point	<u>N/A</u>
Water Depth at Staff Gauge (m)	<u>N/A</u>
Stream Width (m)	<u>N/A</u>
Stagnant	<u>Yes / No</u>
Flow Rate	<u>N/A</u>

Location ID: E_SWAMP_IN_OUTSIDE

Logger Number	<u>N/A</u>
Logger Download Time	<u>N/A</u>
Photos Taken	<u>Yes / No (u. MANY)</u>
Photo Location	<u></u>

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour

N/A
(SPILL RESPONSE FOLLOW UP TABLETS PHC)

SAMPLING RECORD

Sampling Method: GRAB

Sample ID: E_SWAMP_IN_OUTSIDE STRESS #1/#2/#3

Sample Depth: SURFACE

Dup taken? / Dup ID: SW - Dup - N/A

Time Sampled: 2:15 PM (#1-2) 2:30 (#3)

Sample Appearance: Colour: LT BROWN, MED. TURBIDITY

Turbidity: Low / Medium / High

Odour: SLIGHT ODOUR

Sample Container and Preservation:

1 700ml FZ-FY BOTTLE TAKEN AS SAMPLE (SODIUM BISULFATE PRESERVATIVE) AT THREE TIMES (#1, #2, #3)

OBSERVATIONS

Weather Conditions: Temperature: OVERCAST / 24 $^{\circ}$ C

Current Precipitation: NONE

Precipitation of past 24 / 48 hrs: 0mm / 0mm AT OSHAWA (CLIMATE STATION: 6155875)

Notes: AFTER DISTURBANCE OF BANKS AT E-SWAMP-IN-OUTSIDE, SOME SHEEN WAS OBSERVED DETACHING FROM SOIL ON THE BANKS AND FLOATING DOWN INTO POOL (PICTURES TAKEN). BOTTLES #1 & #3 WERE MORE SUCCESSFUL IN CAPTURING MORE SHEEN, #2 LESS SUCCESSFUL.

→ SHEEN WAS MULTICOLOURED & DISSEMINATED QUICKLY INTO SMALLER GLOBULES AFTER DETACHING FROM SOIL. SURFACE WAS HIT WITH STICK AND REMAINED CONSISTENT (DID NOT MOVE AWAY).

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: JULY 10 2013
 Sampled By: PW/EM

SITE DATA

Time	<u>9:30</u>
Surveyed reference point	<u>/</u>
Water Depth at Staff Gauge (m)	<u>/</u>
Stream Width (m)	<u>pond</u>
Stagnant	<input checked="" type="radio"/> Yes <input type="radio"/> No
Flow Rate	<u>0</u>

Location ID: E-SWMP-IN (INSIDE)

Logger Number	<u>/</u>
Logger Download Time	<u>/</u>
Photos Taken	Yes / No (#) <u>Y</u>
Photo Location	<u>E-SWMP-IN</u>

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour
<u>9:30</u>	<u>/</u>	<u>0.85</u>	<u>6.43</u>	<u>/</u>	<u>24.8°</u>	<u>/</u>	<u>/</u>	<u>/</u>

SAMPLING RECORD

Sampling Method: Pole Sampler
 Sample Depth: Surface
 Time Sampled: 9:30

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

Sample Appearance:
 Colour: clear
 Odour: stagnant

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

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

Notes: - trace sheen btwn booms + inlet

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: July 12 2013
 Sampled By: DW/JEM

SITE DATA

Time	<u>940</u>
Surveyed reference point	<u>/</u>
Water Depth at Staff Gauge (m)	<u>/</u>
Stream Width (m)	<u>Pond</u>
Stagnant	<input checked="" type="radio"/> Yes / No
Flow Rate	<u>none</u>

Location ID: E-SWMP-1W (OUTSIDE)

Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
<u>940</u>	<u>/</u>	<u>0.84</u>	<u>6.85</u>	<u>/</u>	<u>24.9</u>	<u>/</u>	<u>/</u>	<u>/</u>

SAMPLING RECORD

Sampling Method: Swing pole
 Sample Depth: Surface
 Time Sampled: 940
 Sample Appearance:
 Colour: clear
 Odour: _____

Sample ID: E-SWMP-1W (OUTSIDE)
 Dup taken? / Dup ID: SW Dup
 Turbidity: Low / Medium / High

Sample Container and Preservation:

- no sheeg outside boom
- stagnant odour.

OBSERVATIONS

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

Notes: _____

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: July 10 2013
 Sampled By: DW/EM

SITE DATA

Time	<u>955</u>
Surveyed reference point	<u>/</u>
Water Depth at Staff Gauge (m)	<u>/</u>
Stream Width (m)	<u>POND</u>
Stagnant	<u>Yes/No</u>
Flow Rate	<u>NONE</u>

Location ID: W-SWMP

Logger Number	<u>/</u>
Logger Download Time	<u>/</u>
Photos Taken	<u>Yes/No (#)</u>
Photo Location	<u>/</u>

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>

SAMPLING RECORD

Sampling Method: _____
 Sample Depth: _____
 Time Sampled: _____
 Sample Appearance:
 Colour: _____
 Odour: _____

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

Turbidity: Low / Medium / High

Sample Container and Preservation:

- pond at lower level
- has been pumped/discharged.
- no spon, no odour.
- slightly milk, bright blue teal colour.

OBSERVATIONS

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

Notes: _____

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: July 10 2013
 Sampled By: AW/EM

SITE DATA

Time	<u>1015</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	
Stagnant	Yes / No
Flow Rate	

Location ID: E+NSWMP-out

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes/No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>

SAMPLING RECORD

Sampling Method: _____
 Sample Depth: _____
 Time Sampled: _____
 Sample Appearance:
 Colour: _____
 Odour: _____

Sample ID: SL2
 Dup taken? / Dup ID: SL2 Dup

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:
 Temperature: ~25 $^{\circ}$ C
 Current Precipitation: No
 Precipitation of past 24 / 48 hrs: Yes

Notes: Dry area surrounding pipes / rocks
No odour / No sheen

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: July 10 2013
 Sampled By: DW / EM

SITE DATA

Time	<u>10:25</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	<u>Water level very low</u>
Stagnant	<input checked="" type="radio"/> Yes / No
Flow Rate	

Location ID: SW1

Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes / No (#)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour

SAMPLING RECORD

Sampling Method: _____
 Sample Depth: _____
 Time Sampled: _____
 Sample Appearance:
 Colour: _____
 Odour: _____

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

Turbidity: Low / Medium / High

Sample Container and Preservation:

OBSERVATIONS

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

Notes: No odour / No sheen
Algae covering majority of surface to south side. Very shallow to east side. Very limited flow.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

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

Date: July 10 2013
 Sampled By: EM/ADW

SITE DATA

Time	<u>11:10</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	
Stream Width (m)	<u>10W</u>
Stagnant	Yes / No
Flow Rate	

Location ID	<u>SW 2</u>
-------------	-------------

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

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour

SAMPLING RECORD

Sampling Method: _____ Sample ID: SW

Sample Depth: _____ Dup taken? / Dup ID: SW Dup

Time Sampled: _____

Sample Appearance: _____ Turbidity: Low / Medium / High

Colour: _____

Odour: _____

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:

Temperature: _____

Current Precipitation: _____

Precipitation of past 24 / 48 hrs: _____

Notes: No odour / No sheen
Very low water level, low flow
Debris in water
Red plant growing in water

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: July 19 2013

Client: Covanta

Sampled By: _____

Site Location: Clarington

SITE DATA

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

Location ID	<u>SW 3</u>
-------------	-------------

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour

SAMPLING RECORD

Sampling Method: _____

Sample ID: SW

Sample Depth: _____

Dup taken? / Dup ID: SW Dup

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:

No colour / No sheen
clear water, low flow
fall grass debris in water

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Client: Covanta

Site Location: Clarrington

Date: July 10 2013

Sampled By: DW/EM

SITE DATA

Time	<u>10:42</u>
Surveyed reference point	<u>1</u>
Water Depth at Staff Gauge (m)	
Stream Width (m)	<u>low</u>
Stagnant	Yes / No
Flow Rate	

Location ID	<u>SW 4</u>
-------------	-------------

Logger Number	
Logger Download Time	
Photos Taken	<u>Yes / No (#)</u>
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature °C	Turbidity	Colour	Odour

SAMPLING RECORD

Sampling Method: _____

Sample ID: SW

Sample Depth: _____

Dup taken? / Dup ID: SW Dup

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: Low water level, low flow

No odour / No sheen
round 1" foam (white) floating on surface

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: 28/06 2013

Client: Covanta

Sampled By: Jessica

Site Location: Claxington

SITE DATA

Time	<u>5:30 pm</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>~4ft</u>
Stream Width (m)	
Stagnant	<input checked="" type="radio"/> Yes / No
Flow Rate	

Location ID	<u>E-SWMP-IN</u>
Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes / No (#)
Photo Location	

E-SWMP-IN - OUTSIDE 7:30 PM
E-SWMP-IN INSIDE 7:40 PM

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity NTU	Colour	Odour
<u>INSIDE</u> <u>7:57 PM</u>		<u>892</u>	<u>8.94</u> <u>8.95</u>		<u>21.1</u> <u>21.3</u>	<u>226</u>	<u>Brow-grey turbid.</u>	<u>None</u>

INSIDE
OUTSIDE

SAMPLING RECORD

Sampling Method: Pole - grab sample

Sample ID: ESWMP-IN

Sample Depth: _____

Dup taken? / Dup ID: ESWMP-IN Dup

Time Sampled: _____

Sample Appearance:

Colour: _____

Turbidity: Low / Medium / High

Odour: _____

Sample Container and Preservation:

OBSERVATIONS

Weather Conditions:

Temperature: ~18 $^{\circ}$ C

Current Precipitation: Light Rain

Precipitation of past 24 / 48 hrs: ~3-5mm

Notes: No controlled discharge from pump.

No odour observed.

On-site @ 5pm

Spill Report: Raining at time of spill. - had been raining since noon.

Strong oily odour (similar to gas smell)

Rainbow - oily appearance on mud in puddles.

Reportedly - amount spilled was ~~about~~ about a gallon. -> Area of spill \approx 30ft x 30ft. - extent of it.

- Spilled from radiator of transformer.
- Location front entry area, west of security post.

Spill occurred at about ~~2:30pm~~ ? - Containment began at 2:30pm.
Clean up ended at 5:15pm.

- Used booms and absorbent packs.

- Site employee reported that some "got into the drain".

- Golder - noted staining on ground in area of spill and adjacent to drain.

- blackish oily substance noted near to drain under portable offices. (to north).

- two drains - both downhill (north) of spill area.

SURFACE WATER SAMPLING RECORD FORM



PROJECT INFORMATION

Project Number: 12-1151-0155

Date: 28/06/2013

Client: Covanta

Sampled By: Jessica

Site Location: Claxington

SITE DATA

Time	<u>5:55pm</u>
Surveyed reference point	
Water Depth at Staff Gauge (m)	<u>~1m</u>
Stream Width (m)	
Stagnant	<input checked="" type="radio"/> Yes <input type="radio"/> No <u>Pond</u>
Flow Rate	

Location ID	<u>W-SWMP-1N</u>
-------------	------------------

Logger Number	
Logger Download Time	
Photos Taken	<input checked="" type="radio"/> Yes / No (# <u> </u>)
Photo Location	

SAMPLING PARAMETER

Time	Dissolved Oxygen mg/L	Conductivity mS or μ S	pH pH Units	Redox Potential mV	Temperature $^{\circ}$ C	Turbidity	Colour	Odour
						<u>300 NTU</u> <u>High.</u>	<u>Brown grey turbid.</u>	<u>None.</u>

SAMPLING RECORD

Sampling Method: Pole-grab sample

Sample ID: WSWMP-1N

Sample Depth: _____

Dup taken? / Dup ID: W-SWMP-1N Dup

Time Sampled: _____

Sample Appearance: _____

Colour: _____

Turbidity: Low / Medium High

Odour: _____

Sample Container and Preservation: _____

OBSERVATIONS

Weather Conditions: Temperature: ~18 $^{\circ}$ C

Current Precipitation: Light rain

Precipitation of past 24 / 48 hrs: ~3-5mm

Notes: Rill erosion noted on banks of pond.

No controlled discharge.