City of Guelph

2013 Annual Report – Solid Waste Transfer Station & Wet-Dry Recycling Centre, C of A (Waste Disposal Site) No. A170128

Report

City of Guelph

2013 Annual Report – Solid Waste Transfer Station & Wet-Dry Recycling Centre, C of A/ECA (Waste Disposal Site) No. A170128

Prepared by:

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Project Number:

60315291

Date:

March, 2014

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March 18, 2014

Mr. Dean Wyman, Manager
Solid Waste Services Division
City of Guelph Works Department
59 Carden Street
Guelph, ON N1H 3A1

Dear Mr. Wyman:

Project No: 60315291

Regarding: 2013 Annual Report – Solid Waste Transfer Station & Wet-Dry Recycling Centre, C of A/ECA (Waste Disposal Site) No. A170128

Enclosed, please find our report for this project, addressing the requirements of the WRIC and Transfer Station's Certificate of Approval (now called and Environmental Compliance Approval (ECA)).

Please do not hesitate to call me should you have any questions about this report. Thank you for allowing AECOM to be of continued service to the City of Guelph.

Sincerely,
AECOM Canada Ltd.

Terry La Chapelle, B.Sc., P.Geo.
Senior Geologist
Terry.lachapelle@aecom.com

TLC/PW:mm
Attach.

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Patty Wong, B.Sc., P.Geo.
Senior Geologist

PROFESSIONAL GEOSCIENTIST
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PRACTISING MEMBER
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Report Reviewed By:

Terry La Chapelle, B.Sc., P.Geo.
Senior Geologist

Executive Summary

The City of Guelph Solid Waste Transfer Station and the Wet-Dry Recycling Centre are adjacent facilities that operate under a combined Amended Provisional Certificate of Approval/Environmental Compliance Approval (C of A/ECA) issued by the Ministry of Environment, dated February 10, 2011. At the request of the MOE, the annual monitoring reports have been consolidated here to produce one monitoring report for both the sites.

The following table presents a summary of the 2013 Annual Report for the City of Guelph Solid Waste Transfer Station and Wet-Dry Recycling Centre. The C of A/ECA specifies annual reporting requirements. These have been outlined in the left-hand column below, while the right hand column provides a reference to the section of this report where the reader will find further details.

A. Amended Provisional C of A (Waste Disposal Site)

C of A Annual Report Requirement (Condition N)		Report Reference and Summary
52. 63(8) 68(a)	*The City shall submit an annual report on the operation of the Site for the previous calendar year to the District Manager by March 31st of each year. This report will include the information required as follows:* *(a) the information required by Condition 63(8) of the Certificate dealing with the Composting Site;* *By March 31st following the end of each operating year, the Owner shall prepare and submit to the District Manager, an Annual Report summarizing the operation of the Composting Site covering the previous calendar year. This Annual Report shall include, as a minimum, the following information:* *A monthly mass balance of the Organic Waste received, processed and transferred from this composting site, including waste type, quantity, sources and/or disposal destinations;*	• Table 1 (Section 2.1) provides details on the organic materials received, processed and transferred from the site. 19,125 tonnes of material was received by the composting facility. Of the materials received, mixed organic materials constituted 18,164 tonnes (95%), brush, leaf and yard waste constituted 809 tonnes (4%) and residue and amendment/mulch made up the remaining 151 tonnes. During 2013, the site accepted organic material mainly from the City of Guelph and Region of Waterloo at the WRIC site. A total of 3,432 tonnes finished compost was removed from the facility in 2013. All the finished compost was shipped to a farmer in Atwood, Ontario, northwest of Guelph. A total of 500 tonnes of screening and residual compost waste from the composting process were shipped to the Transfer Station and then the St Thomas (Green Lane) Landfill site in Elgin County, Ontario or to various other locations.
68(b)	*An annual summary mass balance of the organic waste, the wood waste, the waste wood and the amendment material, received, processed and transferred from this composting site, including waste type, quantity, sources, and/or disposal destination;*	• Table 1 (Section 2.1) provides details on the organic materials received, processed and transferred from the site including amendment material. In addition to the 18,164 tonnes of mixed organic material received, 151 tonnes of amendment material/mulch in the form of brush from the City of Guelph or as wood chips from various sources was also accepted at the site. 263 tonnes of clean wood was received at the Transfer Station and sent to Greenstep Recycling.
68(c)	*An annual summary of any deficiencies, items of non-compliance or process aberrations that occurred at this composting site and any remedial/mitigative action taken to correct them;*	• As reported in Section 2.5, there were no deficiencies, items of non-compliance, or process aberrations in 2013.
68(d)	*a descriptive summary of any spills, incidents or other emergency situations which have occurred at this composting site, any remedial measures taken and the measures taken to prevent future occurrences;*	• As reported in Section 2.2, no spills took place in 2013 at the composting site.
68(e)	*A summary describing any rejected waste including quantity, waste type, reasons for rejection and origin of the rejected waste;*	• As reported in Section 2.2, there were 25 tonnes of rejected loads from the organics plant due to contamination of the loads with recycled/blue bag material. There were no other loads rejected in 2013 coming into the facility. The occasional curbside recyclables collection bag (blue bag) is included in the organics deliveries, which are separated and removed by the staff at the facility.
68(f)	*The quantity, by weight and volume of compost and residues produced and the quantity of compost and residues removed from the facility;*	• Table 1 (Section 2.1) shows that 3,432 tonnes of finished compost was removed from the facility. 500 tonnes of screening and residual compost waste from the composting process were generated.

A. Amended Provisional C of A (Waste Disposal Site)

	C of A Annual Report Requirement (Condition N)	Report Reference and Summary
68(g)	*Any environmental and operational problems, that could negatively impact the environment, encountered during the operation of the composting site or identified during the facility inspections and any mitigative actions taken;*	• There were no environmental or operational problems that negatively impacted the environment at the composting site in relation to the C of A/ECA in 2013. The compost facility operated in 2013 without any major incidents.
68(h)	*Any changes to the WRIC Environmental Emergency Plan, the Operations Manual or the Closure Plan that have been approved by the Director since the last Annual report;*	• As reported in Section 2.2, there were no changes to the WRIC Environmental Emergency Plan, the Operations Manual or the Closure Plan since the last annual report.
68(i)	*Any recommendations to minimize environmental impacts from the operation of the composting site and to improve the composting site operations and monitoring programs in this regard;*	• As discussed in Section 2.5, there were no deficiencies/non-compliance or environmental/operational issues related to the compost facility in 2013. The facility appears to be operating as designed.
68(j)	*A summary of any complaints received and the responses made, as required by the C of A (Air/Noise) for the composting site;*	• Section 2.3 discusses the four odour incidents received by staff at the Waste Resources Innovation Centre in 2013. These complaints were investigated by City of Guelph management staff. Staff conducting the investigations did not detect any odours at the complainant locations and were unable to confirm the source of the odours. Each time a complaint was received, the complainant was contacted and a letter advising the complainant of the investigation findings was hand delivered to each of them.
68(k)	*A description of the compost distribution/markets;*	• As reported in Section 2.2, all compost produced at the site was shipped to a farmer in Atwood, Ontario, northwest of Guelph.
68(l)	*Conclusions from the advanced pathogen testing as the results relate to the pasteurization temperature monitoring; and*	• Section 2.4 reports samples taken from the maturation hall of the compost stream indicate that all compost that has been shipped off of the site has passed the conditions for a Class A compost under the CCME Guidelines and the conditions within the C of A/ECA. • Temperature monitoring logs of the tunnels at the composting facility show that pasteurisation at 55 degrees C was maintained for 72 hours, as required.
68(m)	*A condition-by-condition analysis of compliance with all Conditions of this Certificate.*	• Section 2.6 reports that the City is not aware of any non-compliance issues for 2013.
52(b)	*A monthly summary of the waste and/or recyclable materials received at the Site, including quantity, source and Ontario Regulation 347 waste classes;*	• Table 4 (Section 6.1) provides details of the incoming materials. 97,414 tonnes of material was received by the site. 19,124 tonnes of organics (20% of the materials received in 2013). Recyclables and mixed dry materials constituted 36,901 tonnes (38%)[1] of the total materials received at the site. This included about 23,683 tonnes of paper products and 1,173 tonnes of plastics. There were 6,577 tonnes (7%) brush, leaves, yard waste and mixed organics received. Non-recyclable materials (mixed solid waste, organic rejected loads) constituted 40,569 tonnes (42%) of the total materials received at the site in 2013. • Materials were accepted mainly from the City of Guelph and the surrounding area. The Regulation 347 waste classes received at the site are summarized on Table 4.
52(c)	*A monthly summary of wastes and/or recyclable materials processed at the Site, including quantity and Ontario Regulation 347 waste classes.*	• Table 5 (Section 6.2) provides details on processed waste to the site. There were 30,506 tonnes of outgoing materials from the Material Recovery (MRF), mainly paper and cardboard products. 37,273 tonnes of material remained in inventory at the end of 2013. Materials that are accepted by the site are either diverted to be re-used or sent to the landfill for disposal.

1. *Table 4 paper incoming to the WRIC (23,683 tonnes)+ plastic incoming to the WRIC (1,173 tonnes)+ other recyclable incoming to the Transfer Station and the WRIC (12,046 tonnes) = 36,901 tonnes*

A. Amended Provisional C of A (Waste Disposal Site)

C of A Annual Report Requirement (Condition N)	Report Reference and Summary
52(d) A monthly summary of wastes and/or recyclable materials transferred off-Site, including quantity, destination, and Ontario Regulation 347 waste classes.	• Table 5 (Section 6.2) provides details on the outgoing materials. Of the 80,024 tonnes of outgoing material, 24,773 tonnes (31%)[2] is processed on-site through the Material Recovery facility (MRF) and 3,432 tonnes (4%) of finished compost was produced. The remaining 51,745 tonnes (66%) is shipped off-site to other destinations. • Of the 51,745 tonnes of non-processed outgoing materials received, 31,534 tonnes (61% of the outgoing materials) is sent to the St. Thomas (Green Lane) Landfill in Elgin County and 7,716 tonnes (15% of outgoing materials) is sent to the Waste Management Twin Creeks Landfill in Lambton County for disposal. 5,918 tonnes (11%) of material from the transfer station was sent to the Covanta Energy from Waste facility in Niagara Falls, New York. The remaining 6,577 tonnes (13%) of non-processed materials is marketable consisting of other recyclable materials such as shingles, construction and demolition debris, clean wood, concrete and rubble. • Of the 24,773 tonnes of marketable processed material transferred off the site from the WRIC facility. 13,343 tonnes (54%) was paper-based goods such as cardboard and newsprint, 1,937 tonnes (8%) was plastics and the remaining 9,493 tonnes (38%) was other recyclable materials such as aluminum, steel cans, glass, tires, metal, yard waste, brush and leaves. • 61% of the outbound waste/materials from the Transfer Station were shipped off-site to the St. Thomas (Green Lane) Landfill in Elgin County
52(e) An annual summary of the analytical results for the groundwater and surface water monitoring program including an interpretation of the results and any remedial/mitigative action undertaken,	• Section 8 discusses groundwater quality. Groundwater monitoring results indicate road salt effects at some up-gradient groundwater monitoring locations (5-96, 8-96, 18b-08, 19b-08, 20b-08). These are related to off-site winter road salting of the adjacent major roadways. Road salt impacts are detected in some on-site downgradient groundwater monitors (6b-96, 7-96, 13b-01, 15b-01, 17b-08). Monitors 5-96, 6b-96, 17b-08 and 19b-08 exceeded ODWS for sodium and/or chloride in 2013 as a result of road salt impacts. There were no apparent leachate impacts observed in the groundwater at the site boundary. • The nitrate ODWS has historically been exceeded at 7-96 but was within ODWS in 2013. Historically, elevated nitrate concentrations were prevalent across the site at all locations prior to development of the site. Elevated nitrates are most likely a result of long-term agricultural land use in the area and are not a result of site operations. • Exceedances of the iron ODWS, first noted in 2011, persisted throughout 2012 and into 2013 at many of the monitoring locations, with concentrations generally decreasing into 2013. Many of the monitors with iron detections were now below the laboratory detection limits by December 2013 suggesting that the iron in most monitors are now returning to background levels. These iron exceedances will be further investigated in future monitoring events, although they are not considered to be related to site operations. Aside from the sodium, chloride and iron exceedances discussed above, there were no other exceedances of the Ontario Drinking Water Standards in 2013 for the groundwater monitors sampled for the WRIC and Transfer Station monitoring programs. • As the shallow outwash water quality is not impacted by site operations, no impacts to the deeper bedrock groundwater would

2. *Total of 30,506 tonnes outgoing from the WRIC - 4,194 tonnes residue from processing – 1,539 tonnes glass residue from processing = 24,773 tonnes.*

A. Amended Provisional C of A (Waste Disposal Site)

C of A Annual Report Requirement (Condition N)	Report Reference and Summary
	be expected. No leachate impacts were detected in the bedrock monitors sampled in 2013. • Section 8.5 discusses organic groundwater results. The 2013 organic sampling showed there were detections of DEHP, naphthalene, acenaphthylene, chloroform, bromodichloromethane, 2-chlorophenol, N-nitrosodiphenylamine, benzyl butyl phthalate, m-, p-cresol, indole, phenol, o-cresol and phenanthrene in a few of the monitors. However, based on the historic detections of occasional low levels of VOC throughout the site in both upgradient and downgradient monitors, the 2013 VOC detections are not considered to be related to site operations. New monitor 23b-12 showed detections of several VOC's in the initial sample collected in July 2012 and to a lesser degree in the follow-up sample (similar to and, in some cases, lower than observed at background). No VOC's were detected in December 2012, with the exception of Chloroform, which is not considered to be related to site operations. Several low levels of organics continued to be detected during 2013. It was concluded the VOC results from July 2012 were most likely related to a very hot summer and the close proximity of this location to Stone Road. There are no sources of VOCs on the WRIC or Transfer station property as waste is handled within the covered buildings, truck boxes are covered when outside (preventing contact between the waste and precipitation) and no waste processing occurs on-site. • No other organics were detected at any of the other groundwater monitors sampled during 2013. • Section 8.7 discusses the Guideline B-7 assessment for monitor nest 22-11, located along the western property boundary. June nitrate and iron at 22b-11 in the overburden and June and December iron at 22a-11 in the bedrock exceed the Guideline B-7 limits. Historically, elevated nitrate concentrations were prevalent across the site at all locations prior to development of the site. Shallow background monitors 1b-91 and 6b-96 historically have also shown elevated nitrate concentrations in the early 1990s and late 1990s indicating that the elevated nitrates were present prior to the commencement of facility operations. Iron concentrations at some of the monitor locations were unusually high during the December 2011 monitoring event. These elevated concentrations decreased at 22a-11 during 2012 but have increased again in 2013. The elevated iron concentrations occurred in both upgradient and downgradient monitors and therefore, do not appear to be related to site operations. Only five samples have been collected from 22-11 since they were drilled in 2011 therefore, continued sampling of these locations will build a larger dataset for comparison purposes. The elevated iron concentrations occurred in both upgradient and downgradient monitors and therefore, do not appear to be related to site operations. • Section 8.8 discusses surface water quality results. Monthly monitoring of the stormwater management pond in the northwest corner of the site was conducted, with samples collected at the culvert on the west side of the pond (TP1) on nine occasions and at the discharge at the north end of the pond (TP1 (out)) on 10 occasions in 2013. SWM pond samples at both TP1 and at TP1 (out) exceeded the PWQO for zinc, iron, total phosphorus and phenols during one or more 2013 sampling events. The elevated total phosphorus is a result of agricultural land use and not a result of operations at the Transfer Station. Elevated zinc, total phosphorus and iron concentrations appear to be related to external factors since background surface water have also

A. Amended Provisional C of A (Waste Disposal Site)

C of A Annual Report Requirement (Condition N)	Report Reference and Summary
	exceeded PWQO for these parameters. Metals are a common contaminant from roadway runoff. Elevated phosphorus is typical in rural and urbanized areas. No organics were detected in the stormwater management pond during 2013. • Of the 11 sets of samples collected in 2013 at EPTS-01 (the existing Transfer Station on-site surface water pond (East Pond), the PWQO for zinc was exceeded during all the 2013 monitoring events. Zinc has consistently exceeded PWQO in the past at this location. Phenols, total phosphorus and iron have exceeded PWQO in the past but were within PWQO in 2013. All the leachate indicator parameters concentrations were within background overburden ranges. Surface water organic sampling in April and June 2013 showed low chloroform concentrations at the background surface water station, EPTS-1. Low chloroform levels gave historically occasionally been detected at this location. The East Pond shows no indications of impacts as a result of site operations. • The SW 1 (Stormwater Detention Area 2) samples at the WRIC showed elevated concentrations of some of the indicator parameters in 2013 during one or more of the four sampling events. 2013 SW1 parameter concentrations are within the range of historic concentrations at this location, except for August concentrations of potassium, BOD, COD and total phosphorus, which were higher than historic maximum concentrations. The summer (August) concentrations were generally higher than the January, April and October concentrations, likely due to seasonal influences. Zinc (four events), total phosphorus (three events), phenols (three events) and iron (one event) exceeded the PWQO during 2013. Total phosphorus, iron and zinc have historically routinely exceeded their PWQO. The phenol PWQO was historically only exceeded on seven other occasions since 1997. • The SW 2 (Stormwater Detention Area 1) samples at the WRIC showed elevated concentrations of the indicator parameters in 2013. The 2013 parameter concentrations were within the range of historic concentrations at SW2 except for phenols, COD, TKN, total phosphorus, iron, alkalinity and BOD. The high TSS concentrations in May and June, likely contributed to some of these elevated values. The May to July and December concentrations were generally higher than the concentrations of samples collected during other months, likely due to seasonal influences. Total phosphorus (all nine events), iron (eight events), phenols (six events) and zinc (six events) exceeded the PWQO during 2013. The phenol PWQO was historically only exceeded on seven other occasions since 1997. It is noted that background bedrock monitors 5-96 and 8-96 have consistently shown elevated zinc concentrations indicating that high zinc is natural in the area. • No organics were detected in SW1, SW2 or SW3 in 2013. Surface water organic sampling in April and June 2013 showed low chloroform concentrations at the background surface water station, EPTS-1. • As previously discussed, the design and operation of the Transfer Station and compost facility minimizes the potential for leachate generation from site activities.
52(f) *An annual summary of any deficiencies, items of non-compliance or process aberrations that occurred and remedial/mitigative action taken to correct them.*	• Section 11 of the report briefly discusses site compliance. As reported by the City, there were no deficiencies, items of non-compliance, or process aberrations in 2013.

A. Amended Provisional C of A (Waste Disposal Site)

C of A Annual Report Requirement (Condition N)		Report Reference and Summary
52(g)	*A summary to any changes to the Engineer's Report and/or the Design and Operations Report that have been approved by the Director since the last annual report;*	• As stated in Section 11, there have been no changes to the Engineer's Report or to the Design and Operations Report since the last annual report. There were no changes to the WRIC Environmental Emergency Plan in 2013.
52(h)	*A summary of any changes to the Design and Operations Report Design and the WRIC Environmental Emergency Plan that were made in accordance with Condition 68(1) of this Certificate;*	• As stated in Section 11, there have been no changes to the Engineer's Report or to the Design and Operations Report since the last annual report. There were no changes to the WRIC Environmental Emergency Plan in 2013.
52(i)	*A summary of any changes to the Design and Operations Report that have been approved by the Director since the last annual report;*	• As stated in Section 11, there have been no changes to the Design and Operations Report since the last annual report. There were no changes to the WRIC Environmental Emergency Plan in 2013.
52(j)	*Update on activities of the PLC; and*	• Section 9 summarizes the 2013 PLC activities, as provided by the City.

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Appendices

1. Introduction and Background

In June 2000, Guelph's City Council made the decision to seek future solid waste disposal capacity through an agreement with a landfill owner outside of the city's corporate boundaries. Since the potential disposal site was to be distant from Guelph, the City needed a Transfer Station to facilitate waste bulking from small collection vehicles into larger transport vehicles. The City constructed the Solid Waste Transfer Station adjacent to the existing Waste Resource Innovation Centre (WRIC), formerly the Wet-Dry Recycling Centre. The WRIC was designed as a composting and multi-material recovery operation for the County of Wellington and the City of Guelph. The 29.54 ha site is located at 110 Dunlop Drive in the southeast part of Guelph. Figure 1 shows the location and layout of the Transfer Station and WRIC.

The Transfer Station has been designed to manage up to 299 tonnes/day of waste, calculated on a weekly average (six days), including municipal, industrial, commercial, and institutional wastes. The Transfer Station began receiving waste on October 14, 2003.

The City carries out a number of waste management operations at the WRIC. These operations include processing of recyclables from the City's "dry" waste stream, transfer of non-compostable materials and non-recyclable waste residues to disposal off-site, a public waste drop-off area, and a household hazardous waste depot. The City composting operations were active throughout 2012 and 2013. The site is licensed to handle up to 200 tonnes of residual waste transported for disposal per day. Both the Transfer Station and WRIC facility operate under a combined Ministry of the Environment Amended Provisional Certificate of Approval C of A/ECA) #A170128, dated February 10, 2011.

Amended Provisional C of A/ECA) #A170128, Notice No. 1, dated September 22, 2011, amended Condition 58(1) with respect to the composting operation to add item 58(1)(c) on cross-contamination prevention and to add supporting reference documents to Schedule A. Amended Provisional C of A/ECA, Notice No. 2, dated November 2, 2012, provided additions to Condition 54(1) regarding the service area, approved waste types, rates and storage. Amended Provisional C of A/ECA, Notice No. 3, dated January 24, 2013, was an amendment to condition 29(4) of the C of A/ECA that provided the Public Liaison Committee to serve as a forum for their mandate for the whole site and not just for the composting site. Notice No. 3 also expanded the site service area to include New York and Michigan State. These amendments are included in Appendix E.

As part of the requirements to develop and design the WRIC, a hydrogeological assessment was conducted in 1991[3]. Further groundwater sampling at the proposed site was completed in 1992, 1994 and 1995 prior to the construction of the site[4].

The main conclusions of these reports were:

a) groundwater flow in the shallow subsurface is towards the northeast to the Correctional Centre pond and Clythe Creek; and

b) background groundwater quality in the area is considered hard with calcium, magnesium, and alkalinity the dominant ions. The concentrations of the other major ions (i.e., sodium, potassium, sulphate and chloride) were found for the most part to be low. The exception to this was the 1995 sample collected from monitor 5-91, which exhibited higher than background concentrations of sodium and chloride. The source of the sodium and chloride was considered unknown at that time. The only other parameter of concern was nitrate. This was found at consistently elevated levels at monitors 1a-91, 1b-91, 2b-91 and 3-91, from 1991 until locations 1a-91, 1b-91 and 3-91 were destroyed due to construction activities.

3. *Jagger Hims Limited; Hydrogeological Assessment, Proposed Wet/Dry Facility, Guelph, Ontario; Report prepared for the City of Guelph, October 1991.*

4. *Jagger Hims Limited; Groundwater Monitoring Program; Guelph Wet/Dry Recycling Facility; Draft Report completed for the City of Guelph, September 1995.*

A SIZE 8.5" x 11" (215.9mm x 279.4mm)

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AECOM

Transfer Station / WRIC
City of Guelph
Annual Monitoring Program

Groundwater Monitor
Location Map

Legend

Approximate Site Boundary
Fence
Monitoring Well
Surface Water Location

PROJECT NUMBER
60286226

DATE
February 2013

FIGURE
1

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In July 1997, the C of A was amended to allow the WRIC service area to be expanded.

1.1 Annual Reporting Requirements

Section N, Condition 52 of the Amended Provisional Certificate of Approval states that:

The City shall submit an annual report on the operation of the Site for the previous calendar year to the District Manager by March 31st of each year. This report will include the information required as follows:

(a) the information required by Condition 63(8) of the Certificate dealing with the Composting Site;

63(8) By March 31st following the end of each operating year, the Owner shall prepare and submit to the District Manager, an Annual Report summarizing the operation of the Composting Site covering the previous calendar year. This Annual Report shall include, as a minimum, the following information:

68(a) A monthly mass balance of the Organic Waste received, processed and transferred from this composting site, including waste type, quantity, sources and/or disposal destinations;

68(b) An annual summary mass balance of the organic waste, the wood waste, the waste wood and the amendment material, received, processed and transferred from this composting site, including waste type, quantity, sources, and/or disposal destination;

68(c) An annual summary of any deficiencies, items of non-compliance or process aberrations that occurred at this composting site and any remedial/mitigative action taken to correct them;

68(d) A descriptive summary of any spills, incidents or other emergency situations which have occurred at this composting site, any remedial measures taken and the measures taken to prevent future occurrences;

68(e) A summary describing any rejected waste including quantity, waste type, reasons for rejection and origin of the rejected waste;

68(f) The quantity, by weight and volume of compost and residues produced and the quantity of compost and residues removed from the facility;

68(g) Any environmental and operational problems, that could negatively impact the environment, encountered during the operation of the composting site or identified during the facility inspections and any mitigative actions taken;

68(h) Any changes to the WRIC Environmental Emergency Plan, the Operations Manual or the Closure Plan that have been approved by the Director since the last Annual report;

68(i) Any recommendations to minimize environmental impacts from the operation of the composting site and to improve the composting site operations and monitoring programs in this regard;

68(j) A summary of any complaints received and the responses made, as required by the C of A (Air/Noise) for the composting site;

68(k) A description of the compost distribution/markets;

68(l) Conclusions from the advanced pathogen testing as the results relate to the pasteurization temperature monitoring; and

68(m) A condition-by-condition analysis of compliance with all Conditions of this Certificate.

52(b) *A monthly summary of the waste and/or recyclable materials received at the Site, including quantity, source and Ontario Regulation 347 waste classes;*

52(c) *A monthly summary of wastes and/or recyclable materials processed at the Site, including quantity and Ontario Regulation 347 waste classes.*

52(d) *A monthly summary of wastes and/or recyclable materials transferred off-Site, including quantity, destination, and Ontario Regulation 347 waste classes.*

52(e) *An annual summary of the analytical results for the groundwater and surface water monitoring program including an interpretation of the results and any remedial/mitigative action undertaken*

52(f) *An annual summary of any deficiencies, items of non-compliance or process aberrations that occurred and remedial/mitigative action taken to correct them.*

52(g) *A summary to any changes to the Engineer's Report and/or the Design and Operations Report that have been approved by the Director since the last annual report;*

52(h) *A summary of any changes to the Design and Operations Report Design and the WRIC Environmental Emergency Plan that were made in accordance with Condition 68(1) of this Certificate;*

52(i) *A summary of any changes to the Design and Operations Report that have been approved by the Director since the last annual report;*

52(j) *Update on activities of the PLC*

The current C of A/ECA for the site is included in Appendix E.

2. Composting Facility

The original compost facility was shut down in 2006. The City commissioned a new compost facility design, which was completed by the summer of 2011. This facility currently processes only City of Guelph and Region of Waterloo organic material.

2.1 Material Received, Processed and Transferred

As per Section N, Condition 68(8)(a) and (b), Table 1 presents a summary of the waste volumes received, processed and transferred from the site. 19,125 tonnes of material was received by the composting facility. Of the materials received, mixed organic materials constituted 18,164 tonnes (95%), brush, leaf and yard waste constituted 809 tonnes (4%) and residue and amendment/mulch made up the remaining 151 tonnes. During 2013, the site accepted organic material mainly from the City of Guelph and Region of Waterloo at the WRIC site. Amendment material was received in the form of brush from the City of Guelph or as wood chips from other sources.

A total of 3,432 tonnes finished compost was removed from the facility in 2013. All the finished compost was shipped to a farmer in Atwood, Ontario, northwest of Guelph. A total of 500 tonnes of screening and residual compost waste from the composting process were shipped to the Transfer Station and then the St Thomas (Green Lane) Landfill site in Elgin County, Ontario or to various other locations.

Table 1. 2013 Monthly Summary of Incoming and Outgoing Material, Organics Compost Facility

Incoming Material	Jan Tonnes	Feb Tonnes	March Tonnes	Apr Tonnes	May Tonnes	June Tonnes	July Tonnes	Aug Tonnes	Sept Tonnes	Oct Tonnes	Nov Tonnes	Dec Tonnes	Yearly Total
Mixed Organics	1,671.3	1,230.9	1,377.9	1,574.5	1,501.0	1,376.7	1,455.8	1,469.4	1,564.0	1,664.9	1,838.1	1,439.8	18,164.2
Yardwaste	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brush	48.8	7.3	36.7	67.9	66.8	43.5	57.7	83.2	62.3	162.2	110.6	62.3	809.2
Ammendmant/Mulch	0.0	66.2	0.0	0.0	0.0	0.0	0.0	0.0	21.2	29.3	8.2	26.3	151.1
Overs/Hamilton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Month	1,720.2	1,304.5	1,414.6	1,642.3	1,567.7	1,420.2	1,513.5	1,552.5	1,647.5	1,856.3	1,956.9	1,528.3	19,124.5

Outgoing Mixed Waste	Jan Tonnes	Feb Tonnes	March Tonnes	Apr Tonnes	May Tonnes	June Tonnes	July Tonnes	Aug Tonnes	Sept Tonnes	Oct Tonnes	Nov Tonnes	Dec Tonnes	Yearly Total
Finished Compost	284.5	244.8	294.9	165.0	143.6	600.2	147.4	241.4	285.1	306.9	170.0	548.4	3,432.2
Overs	0.0	74.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	74.2
Screening Waste	39.6	18.8	36.3	27.6	34.5	45.0	57.3	17.3	24.8	37.9	35.5	27.6	402.1
Residual Compost Waste	5.8	16.1	23.5	0.5	0.0	0.0	6.4	37.4	8.2	0.0	0.0	0.0	97.9
Total Month	329.9	353.8	354.6	193.2	178.1	645.3	211.2	296.1	318.1	344.7	205.5	576.1	4,006.5

2.2 Deficiencies/Non-Compliance and Environmental/Operational Issues

No spills occurred in 2013 at the composting site.

There were 25 tonnes of rejected loads from the organics facility due to contamination of the loads with recycled/blue bag material. These were removed to the transfer facility for final disposal. There were no other loads rejected in 2013 coming into the facility. The occasional curbside recyclables collection bag (blue bag) is included in the organics deliveries, which are separated and removed by the staff at the facility.

There were no environmental or operational problems that negatively affected the environment at the composting site in relation to the C of A/ECA in 2013. The compost facility operated in 2013 without any major incidents.

There were no changes to the WRIC Environmental Emergency Plan, the Operations Manual or the Closure Plan since the last annual report.

2.3 Public Complaints

There were four complaints received by staff at the Waste Resources Innovation Centre in 2013. All of the complaints were related to odour. All complaints were investigated by site management staff. Staff conducting the investigations did not detect any odours at the complainant locations and were unable to confirm the source of the odours.

Each time a complaint was received, the complainant was contacted and a letter advising the complainant of the investigation findings was hand delivered.

2.4 Enhanced Pathogen Testing and Operations Summary

Samples taken from the maturation hall of the compost stream indicate that all compost that has been shipped off of the site has passed the conditions for a Class A[5] compost under the CCME[6] Guidelines and the conditions within the C of A/ECA.

To reduce the health risks of pathogenic organisms, yard waste must attain a temperature of 55 degrees C for a period of three days (72-hours) using in-vessel composting methods. The compost material goes through a series of tunnels to get to its finished state. There are seven tunnels at the facility. When material is in a tunnel the temperature in each of those tunnels is measured every five minutes and the logs are stored within a supervisory control and data acquisition (SCADA) system. The operator provides a weekly report which contains a snap shot of the tunnel temperatures. The Operator also takes readings of the curing piles that are maturing in the maturation building. The spreadsheet for the weekly readings of the compost temperatures and all the weekly reports for the snapshots of tunnel temperatures are available upon request. Temperature monitoring logs of the tunnels at the composting facility show that pasteurisation at 55 degrees C was maintained for 72 hours.

5. *Category A = Unrestricted use. Compost that can be used in any application (i.e., agricultural, residential gardens, horticultural operations, nursery industry, other businesses.*
6. *CCME = Canadian Council of Ministers of the Environment, 2005: Guidelines for Compost Quality, PN 1340.*

2.5 Site Operation Recommendations

There were no confirmed deficiencies/non-compliance or environmental/operational issues related to the compost facility in 2013. The facility is operating as designed.

2.6 Compliance with the Conditions of the Certificate of Approval

Section N, 52(a) refers to reporting requirements associated with the Composting site. Section 63 (8)(m) requires:

A condition-by-condition analysis of compliance with all Conditions of this Certificate.

The City provided the following statement with respect to this condition:

"A condition by condition analysis of compliance of all conditions of this Certificate of Approval was done and the City is not aware of any non-compliance issues for 2013.

The Executive Director of Planning & Building, Engineering and Environment and the General Manager of Solid Waste Resources continue to put a very high priority on compliance with applicable laws. Staff training continues to be provided both in-house and by external providers, and included inspections, reporting, due diligence, environmental regulations, competent person, contingency plans, emergency procedures, certificate of approval conditions, spills, TDGA, laboratory packing and other relevant topics."

3. Ground and Surface Water Monitoring Program

3.1 Groundwater Monitoring Program

Groundwater levels are measured at all monitoring locations on a quarterly basis each year. During 2013, groundwater level measurements were conducted on; April 26, June 17, September 25 and December 1. As per Section N Condition 32 of the C of A, groundwater sampling was conducted two times in 2013; in June (dry period, late spring) and in December (wet period, late fall). Each of the 2013 sampling events included analyses for leachate indicator parameters, general chemistry and organics. Tables 2 and 3 below summarize the groundwater monitoring program and analytical parameters, respectively.

Table 2. Groundwater Monitoring Program

Location	April	June	September	December
13a-01	•	S	•	S
13b-01	•	S	•	S
14a-01	•	S	•	S
14b-01	•	S	•	S
15a-01	•	S	•	S
15-b-01	•	S	•	S
16a-08	•	S	•	S
16b-08	•	S	•	S
17a-08	•	S	•	S
17b-08	•	S	•	S
18a-08	•	S	•	S
18b-08	•		•	
19a-08	•	S	•	S
19b-08	•		•	S
20a-08	•	S	•	S
20b-08	•	S	•	S
21-08	•	S	•	S
22a-11	•	S	•	S
22b-11	•	S	•	S
23a-12	•	S	•	S
23b-12	•	S	•	S

Notes: • = Water Levels Only / S = Sampling and Water Levels

Table 3. Analytical Parameter List

Leachate Indicator Parameters	• Biological Oxygen Demand (BOD) • Chemical Oxygen Demand (COD) • Total Kjeldahl Nitrogen (TKN) • Ammonia as Nitrogen (NH3-N) • Total Phosphorus (Total P) • Total Suspended Solids (TSS) for surface water and leachate only • Total Sulphate (SO4) • Phenols	• Chloride (Cl) • Sodium (Na) • Calcium (Ca) • Boron (B) • Total Iron (Fe) • Phosphorus (P) • Zinc (Zn) • Nitrate (NO3) and Nitrite (NO2)
General Parameters	• pH • Conductivity • Alkalinity	• Magnesium (Mg) • Potassium (K)
Organics	• EPA 624,625 (ATG 16+17+18 & ATG 19+20)	

The organic compound parameter list for the ATG MISA Groups are as follows:

Misa Group 16	**Misa Group 19**	
1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethylene 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3-Dichlorobenzene 1,4-Dichlorobenzene Bromodichloromethane Bromoform Bromomethane Carbon Tetrachloride Chlorobenzene Chloroform Chloromethane Cis-1,3-Dichloropropylene Dibromochloromethane 1,2-Dibromoethane Methylene Chloride Tetrachloroethylene trans-1,2-Dichloroethylene Trans-1,3-Dichloropropylene Trichloroethylene Trichlorofluoromethane Vinyl chloride	Acenaphthene 5-Nitroacenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)Pyrene Benzo(b)Fluoranthene Benzo(g,h,i)perylene Benzo(k)Fluoranthene Biphenyl Camphene 1-Chloronaphthalene 2-Chloronaphthalene Chrysene Dibenzo(a,h)Anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)Pyrene Indole 1-Methylnaphthalene	2-Methylnaphthalene Naphthalene Perylene Phenanthrene Pyrene Benzyl Butyl Phthalate bis(2-ethylhexyl)Phthalate Di-N-butylPhthalate Di-N-octylPhthalate 4-Bromophenyl phenyl Ether 4-Chlorophenyl Phenyl Ether bis(2-chloroisopropyl)Ether bis(2-Chloroethyl)Ether Diphenyl ether 2,4-Dinitrotoluene 2,6-Dinitrotoluene bis(2-chloroethoxy)Methane Diphenylamine N-Nitrosodiphenylamine N-Nitrosodi-N-propylamine
Misa Group 17	**Misa Group 20**	
Benzene Ethylbenzene Styrene Toluene o-Xylene m-Xylene and p-Xylene	2,3,4,5-Tetrachlorophenol 2,3,4,6-Tetrachlorophenol 2,3,5,6-Tetrachlorophenol 2,3,4-Trichlorophenol 2,3,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4-Dimethylphenol 2,4-Dinitrophenol 2,4-Dichlorophenol	2,6-Dichlorophenol 4,6-Dinitro-o-Cresol 2-Chlorophenol 4-Chloro-3-methylphenol 4-Nitrophenol m-,p-Cresol o-Cresol Pentachlorophenol Phenol
Misa Group 18		
Acrolein Acrylonitrile		

Section F, Monitoring Program

Section F of the C of A/ECA discusses the ground and surface water monitoring program as described below:

Condition 32 and 33 (Groundwater)

32. Groundwater shall be sampled on semi-annual basis (spring and fall).

33. The analysis of samples collected in accordance with Condition 32 shall seek to identify chloride, nitrate and a suite of compounds characteristic of waste at the site. Sampling frequency and parameters for analysis may be adjusted upon the approval of the District Manager, as groundwater information becomes available.

Groundwater monitoring was conducted at all locations in June and December 2013. The results of the groundwater monitoring are discussed in Sections 8.4 to 8.7.

3.2 Surface Water Monitoring Program

The objectives of the surface water monitoring program are outlined in the C of A/ECA in Section F, Condition 35. These are:

(a) *The City shall annually review and update the existing surface water sampling program, designed to detect and quantify any impacts originating from the site;*

(b) *A surface water sampling program shall be implemented to ensure early detection of contaminants in the event that such contaminants escape the site. Surface water shall be sampled monthly for the following conventional parameters: BOD, TSS, ammonia, nitrogen, TKN, total phosphorus and phenolics. For all other parameters surface water shall be sampled on a semi-annual basis (spring and fall). The analysis shall seek to identify chloride, nitrate and a suite of organic and inorganic compounds characteristic of waste generated at the site;*

(c) *Sampling frequency and parameters for analysis may be adjusted upon the approval of the District Manager, as surface water information become available;*

(d) *Surface water shall be sampled at the discharge location of the final surface water detention pond;*

(e) *The City shall ensure that all stormwater which comes in contact with waste material is treated or discharged into the sanitary sewer; and*

(f) *the City shall annually review and update the detailed maintenance schedules for the infiltration trenches and stormwater detention ponds.*

During 2013, monthly monitoring of surface water runoff into Detention Ponds 1 (SW2, SW3) and 2 (SW1) was completed. Samples were collected in January and April to November at SW2 and January, April, May and August to December at SW3 from Detention Pond 1. For the remaining months in 2013, no water remained in the detention ponds after rain events or they were dry by the end of each month or they were frozen/snow laden. 2013 samples were collected at SW1 in Detention Pond 2 in January, April, August and October. The results of the surface water monitoring are discussed in Section 8.8.

Surface water sampling is undertaken on a monthly basis in the stormwater management pond (SWM) for the parameters (excluding organics) shown in Table 3. Organic sampling of the detention, SWM and East pond surface water stations was conducted in April 2013. During each month, sampling will be undertaken when surface water runoff conditions occur (weather permitting). If no surface water events occur, sampling will be undertaken at the end of the month regardless. Measurements of discharge, surface water runoff events and overall conditions of the detention ponds (e.g., dry, or stagnant water) will be documented on a weekly basis throughout each month. Two surface water stations in the SWM pond were established by the City staff; TP1, located at the culvert along the western shore of the pond adjacent to the access road and TP1 (out), located at the discharge at the north end of the pond. 2013 monthly inorganic samples were collected from TP1 in January, April, May, June and August to December and TP1 (out) in January and April to December.

The existing surface water pond ("East Pond" in Figure 1) was sampled in January and April to December 2013 (for inorganic parameters shown on Table 3). The East Pond setting is similar to the Transfer Station SWM and the WRIC ponds (influenced by road salting and within similar overburden soils) though it is within a different catchment area. As suggested by the MOE, surface water quality from the samples collected from the staff gauge in the East Pond (designated EPTS-01) can be considered as background surface water quality as it is upstream of both facilities[7] and will be used as comparison to the on-site surface water features.

A ditch located between the stormwater management pond and the East Pond is designed to receive pond overflow and direct it in a northwesterly direction beneath Dunlop Drive.

As requested by the MOE, a revised surface monitoring program was recommended for the WRIC in December 2013. A summary of the response to the MOE, including the revised monitoring are provided in Section 8.9. However, no comments have been received on this recommendation pending the completion of the design and recommended surface water program for the new Public Drop-Off facility (PDO).

4. Wet-Dry Recycling Facility Operations

4.1 HHW Waste Screening Procedures and Acceptance Criteria

The information presented in this section was reported by the City of Guelph. Household hazardous waste materials can only be received at the City of Guelph Depot in accordance with the conditions specified on amended C of A/ECA #A170128.

Purpose

This procedure is designed to assist the employees at the Household Hazardous Waste (HHW) Depot in the screening of waste that is brought to the depot and to prevent the acceptance of items not permitted by C of A/ECA #A170128. Adherence to these conditions is mandatory in order to ensure the operating permit is not revoked as a result of non-compliance issues.

Scope

These procedures are for employees at the Household Hazardous Waste (HHW) Depot and their Supervisor. The Depot is restricted to accepting only spent household consumer commodity goods that are widely available to the general public in quantities and concentrations typically found at conventional retail outlets.

7. *Memorandum from Lynnette Latulippe (MOE) to Bill Shields (City of Guelph), Re: Annual Monitoring Report – 2009 Guelph Wet-Dry Recycling Centre and Waste Transfer Station, dated February 7, 2011.*

Definitions

Household Hazardous Waste Depot .... A collection centre which accepts household hazardous waste from residents, which consist of but not limited to, paint, waste oil, thinners, household cleansers, etc., with a capacity of less than fifty-five (55) drums of waste.

Industrial/Commercial/Institutional Waste ...... Waste from businesses, medical centres, etc. Such waste is not accepted at the HHW.

PCBs .... Polychlorinated biphenyls. The import, manufacturing and re-sale of materials containing PCB's was banned in Canada in 1977, but legislation allowed the continued use of previously acquired products until the end of their functional life.

Residential Waste .... Waste generated by an individual or a family at the place where the individual or the family lives.

TDG .... Transportation of Dangerous Goods. This is a set of rules to follow regarding the transportation of dangerous substances, including how the materials are to be contained and labelled.

WHMIS.. The Workplace Hazardous Materials Information System (WHMIS) is Canada's national hazard communication standard. The key elements of the system are cautionary labelling of containers of WHMIS "controlled products", the provision of material safety data sheets (MSDSs) and worker education and training programs.

Conditions

1. The Depot is restricted to accepting HHW waste from residents within the City of Guelph or County of Wellington only. This information shall be documented on the Waste Ticket Form prior to acceptance of the HHW materials and must include all contact information necessary to validate residency status.
2. Spent consumer commodity goods that are widely available to the general public in quantities and concentrations typically found at conventional retails outlets, examples include:
   - Canadian Tire products; and
   - Home Depot products.
3. No industrial, commercial or institutional hazardous waste shall be received at this facility. Waste materials originating from these sources are items that would not be readily available to the general public nor would be considered consumer commodity. Examples include:
   - Laboratory reagents from the local University;
   - Large pesticide containers typically sold to farmers; and
   - Chemical agents in containers greater than 20 L in capacity.
4. The following are not acceptable under any circumstance:
   - Radioactive wastes;
   - Explosives and ammunition;
   - Pathological wastes (sharps however, are permitted if they are placed in a rigid plastic container, soaked in bleach overnight, drained, and labelled);

- Unknown wastes; and
- Polychlorinated biphenyls (PCBs).

5. Any unacceptable materials inadvertently received at the HHW or other areas on the WRIC site, must be handled and disposed of in accordance with applicable legislation. The HHW Co-ordinator is to be contacted immediately upon discovery for processing and handling of these unacceptable materials.

Additional Information

1. All waste received shall be clearly identified either by the labels of the original consumer packaging or if no labels are present, by the resident dropping the material off. The materials must be in a clear container and the contents identifiable by the HHW attendant. Materials identified by the homeowner will be labelled by City of Guelph staff prior to acceptance and laboratory packing.
2. Only propane in containers typically available to the public is acceptable [Small 1 kg tanks up to barbeque size containers (20 kg)].
3. The City of Guelph HHW depot reserves the right to reject any waste materials which if received could jeopardize the operational permits held by the site.

Procedures

1. Always wear the appropriate PPE (personal protective equipment) to handle the waste items.
2. All waste containers brought to the Depot shall be sealed prior to acceptance and must be surrendered by the resident. Unacceptable activities include:
   - Decanting gasoline for the purpose of returning jerry-cans to the homeowner; and
   - Decanting pesticides from small portable pumps.
3. Hazardous waste material characteristic ranking will determine the order in which waste is handled. Many items will have the properties of two or more hazards and items with more than one hazard must be placed in the highest hazards characteristic class. Use the following in order of highest to lowest precedence of hazard:
   1. Radioactive;
   2. Poisonous gases;
   3. Flammable gases;
   4. Non-flammable gases;
   5. Biohazardous materials;
   6. Poisonous liquid;
   7. Pyrophoric materials;
   8. Self-reactive;
   9. Flammable liquids;
   10. Flammable solids;
   11. Combustible materials; and
   12. Miscellaneous hazardous materials.
4. Refused items shall be recorded in the Waste Rejection section of the HHW Waste Ticket Form with reasons for the refusal documented. Offer the resident a list of Alternate Disposal Options. (See HHW Operations Manual).
5. Abandoned wastes will be recorded on an Unacceptable Waste Log. (See HHW Operations Manual).
6. Items of concern (extremely dangerous, toxic, explosive, biohazardous, infectious, or radioactive materials) shall be brought to the attention of the Supervisor of Governance and Compliance.
7. The resident will be contacted within three days in order to trace the whereabouts of any items of concern and to ensure that the material was properly disposed of. If required, the Ministry of Environment, City of Guelph Police Department, Fire Department or the Community Emergency Management Co-ordinator may also need to be notified.

8. Wastes containing PCB's or suspect PCB materials are not acceptable at the City of Guelph HHW depot, however should such material be suspected or identified after drop-off or in the case of illegal dumping, the following steps shall be taken:

    1. The PCB or suspect PCB waste materials shall be set aside in a secure area, along with the ticket identifying the resident that brought these materials to the depot if it was not illegally dumped.

    2. The material must be sampled and set for analysis to an accredited laboratory to determine the PCB concentration.

    3. Analytical results over 50 ppm confirm the waste to be PCBs.

    4. Upon confirmation of the presence of PCB waste, The City of Guelph shall obtain Directors Instructions from the Ministry of the Environment after which arrangements shall be made for removal and disposal.

Training

All HHW employees must be trained in WHMIS, TDG, Spills Response, Competent Person, and First Aid to perform these procedures.

Applicable Legislation and References

- OHSA Regulation 860 Workplace Hazardous Material Information System.
- O. Reg. 347 *General Waste Management Transportation of Dangerous Goods Act*, 2002.

5. Waste Transfer Station Operations

5.1 Facility Inspection and Routine Maintenance

The following information was reported by the City of Guelph. The facility is inspected on an ongoing basis by site employees. Corrective maintenance is carried out as required. There were no environmental or operational problems reported during 2013.

A log of all security and grounds inspection noting the condition of the fences, litter, birds, vermin and vectors and any off-site discharges is recorded daily. Routine maintenance is conducted at the site that includes litter pick-up, dust control, rodent control and clean-up of external roads within 1 km of the facility. The compactor is cleaned and inspected weekly when in use. Inspection of the inside floor drains, oil and grit separator, etc., are conducted weekly. The floor drain in the loading ramp is pumped and cleaned every three weeks. Maintenance was conducted on the holding tanks, floor drains and oil and grit separator once per month. The overhead doors are oiled every three weeks. All preventative maintenance performed on equipment are filed under the equipment number (hard copy) as well as recorded electronically in the Synergen program to indicate that the required maintenance has been completed.

A log book recording the weekly inspection of the detention ponds, ditches and facility inspections is kept on-site. Weekly inspections were recorded in 2013.

5.2 Contaminant Sources

5.2.1 Site Design and Operations

To determine if the Transfer Station is having an impact on the ground and surface water in the area, it is important to examine what are the potential sources of impact. The site has been designed to minimize the possible sources of impacts and limit the risk of their emission to the environment, as discussed below.

Waste is dumped from incoming collection vehicles onto an indoor tipping floor located within the transfer building. The transfer building is a steel framed, metal clad building with a reinforced, surface-hardened slab-on-grade floor. The tipping floor is curbed such that liquid discharges onto the floor cannot readily flow off of the floor to the building exterior. It is drained by floor drains and routed through an oil-water separator, with the provision to divert flows to holding tanks prior to reaching the pumping station through the sanitary sewer. Spill cleanup materials (e.g., sorbents) are kept on hand and any liquid spills on the tipping floor are cleaned up immediately. Washing of spilled materials into the floor drain system is avoided to the greatest degree possible. In the event of any potential for leachate or liquid discharge from the building, the shut-off valve for the stormwater management pond will be closed to prevent any off-site discharge.

No waste processing is undertaken in the Transfer Station, with the exception of removal of recyclable material that arrives in incoming waste loads (i.e., metal, wood, cardboard). Truck boxes (both incoming waste and transfer loads out) are tarped when outside of the transfer building to prevent odour and dust emissions as well as to prevent contact between the waste and precipitation that could potentially produce impacted runoff.

The Transfer Station building and the scale house are serviced with a connection to the City sanitary sewer. Domestic sewage from the washrooms in the transfer building and the scale house are discharged directly to the sewage pumping station. The stormwater management pond has a valved connection to the pumping station, which will permit any stormwater that becomes impacted to be discharged to the sanitary sewer system. The site is graded such that all runoff drains to the stormwater management pond. As all waste handling occurs within the Transfer Station building, runoff from the site will be initially considered to be unimpacted.

Ditches are located on both sides of the driveway to collect road runoff and to convey upstream runoff to the pond. A culvert conveys flow from the ditch on the west side of the driveway to the ditch on the east side and ultimately to the pond. MOE approved dust suppressant and road salt for the internal paved areas may be used occasionally.

6. Incoming and Outgoing Waste and/or Recyclables

6.1 Summary of Incoming Materials

As per Section N, Condition 52(b) of the amended C of A, Table 4 is a monthly summary of the incoming materials received at the site during 2013, based on data recorded by City staff.

As shown on Table 4, 97,414 tonnes of material was received by the site. The compost facility received 19,124 tonnes of organics (20% of the materials received in 2013). Recyclables and mixed dry materials constituted 36,901 tonnes (38%)[8] of the total materials received at the site. This included about 23,683 tonnes of paper products[9] and 1,173 tonnes of plastics[10]. There were 6,577 tonnes[11] (7%) brush, leaves, yard waste and mixed organics received. Non-recyclable materials (mixed solid waste organic rejected loads) constituted 40,569 tonnes (42%) of the total materials received at the site in 2013. 263 tonnes of clean wood was accepted at the Transfer Station.

The on-site Household Hazardous Waste (HHW) depot serves residents of the City of Guelph and the County of Wellington. The depot accepted 19,053 drop offs of materials during 2013. A monthly summary of the 2013 drop off numbers are shown on the table below.

Public	Drop Offs
January	1,000
February	659
March	974
April	1,504
May	2,330
June	2,084
July	2,234
August	2,237
September	1,672
October	1,911
November	1,609
December	839
Totals	**19,053**

The City also runs a Bicycle Re-Use Program during which 393 bicycles were collected in 2013. Residents bring their used bikes that they were intending to throw out, into the WRIC at the HHW Depot. These bikes are inspected by the employees and if they are suitable for use with only minimal repairs (these are done by the residents taking the bikes) the resident sign a waiver and take the bikes for use at home. The program is run year round with the total bicycles collected in 2013 at 76 during the January to April period, 214 from May to October and 73 from November to December.

8. *Table 4 paper incoming to the WRIC (23,683 tonnes)+ plastic incoming to the WRIC (1,173 tonnes)+ other recyclable incoming to the Transfer Station and the WRIC (12,046 tonnes) = 36,901 tonnes*
9. *Table 4 incoming mixed papers (1196 tonnes) + commingle (1443 tonnes) + single stream bagged (5727 tonnes) + single stream loose (12932 tonnes) + OCC baled (22 tonnes) + OCC loose (2314 tonnes) + OWP fine/loose (27 tonnes) + ONP#6 baled (18 tonnes) + ONP#6 loose (3 tonnes) = 24,684 tonnes*
10. *Table 4 incoming HDPE#2 (0.5 tonnes) + mixed plastics (1172 tonnes) = 1173 tonnes*
11. *Table 4 incoming transfer station mixed organics (11 tonnes) + transfer station yard waste (28 tonnes) + transfer station brush (17 tonnes) + WRIC brush (1618 tonnes) + WRIC leaves (1532 tonnes) + WRIC yard waste (3370 tonnes) = 6,577 tonnes*

Table 4. 2013 Monthly Summary of incoming Material

Transfer Station Incoming Material

Incoming Material	Jan Tonnes	Feb Tonnes	March Tonnes	Apr Tonnes	May Tonnes	June Tonnes	July Tonnes	Aug Tonnes	Sept Tonnes	Oct Tonnes	Nov Tonnes	Dec Tonnes	Yearly Total
Mixed Solid Waste	2,736.39	2,186.03	2,571.22	3,610.96	4,483.00	3,565.38	4,251.58	3,754.48	3,669.47	3,872.59	3,344.39	2,498.84	40,544.33
Mixed Organics	0.00	1.70	0.00	4.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.74	10.94
Yardwaste	13.24	3.88	0.00	0.00	4.36	0.00	0.00	0.00	0.00	0.00	6.90	0.00	28.38
Brush	0.00	0.00	2.19	0.48	0.00	0.00	0.23	14.22	0.00	0.00	0.00	0.28	17.40
Leaves	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00
C & D	109.65	78.71	96.90	177.92	179.76	204.64	183.25	327.01	156.62	228.43	161.39	59.11	1,963.39
Medical Waste	0.95	1.81	0.91	1.69	1.01	1.34	2.52	1.11	1.29	1.08	2.45	0.65	16.81
MRF Residue	535.45	396.32	369.32	478.02	503.86	258.68	327.56	257.84	261.08	316.86	275.42	213.60	4,194.01
MRF Glass Residue	142.47	93.91	129.06	157.27	220.25	112.14	146.58	89.82	90.20	102.86	168.49	85.99	1,539.04
Shingles	32.37	9.30	39.09	136.17	377.72	301.90	385.48	374.87	418.59	389.58	210.95	98.80	2,774.82
Clean Wood	12.32	14.36	19.66	51.29	39.80	27.62	13.91	14.26	20.87	21.00	19.91	8.31	263.31
Drywall	11.10	27.17	11.70	23.72	29.14	12.55	18.53	10.10	22.11	16.54	18.97	9.97	211.60
Rubble/Brick/Toilets	16.87	4.65	8.55	26.09	97.16	30.30	49.59	39.74	11.94	21.18	37.57	11.21	354.85
Screening Waste	39.56	18.79	36.31	27.58	34.51	45.03	57.31	17.33	24.76	37.87	35.45	27.64	402.14
Residual Compost Waste	5.83	16.05	23.45	0.54	0.00	0.00	6.44	37.38	8.24	0.00	0.00	0.00	97.93
Organic Rejected Load	0.00	0.00	0.00	1.04	4.06	6.24	10.63	1.50	0.00	0.00	0.00	1.13	24.60
Total Month	3,656.20	2,852.68	3,308.36	4,697.27	5,974.63	4,565.82	5,453.61	4,939.66	4,685.17	5,007.99	4,281.89	3,020.27	52,443.55

WRIC (MRF Recycling /PDO Facility) Incoming Material

Incoming Material	Jan Tonnes	Feb Tonnes	March Tonnes	Apr Tonnes	May Tonnes	June Tonnes	July Tonnes	Aug Tonnes	Sept Tonnes	Oct Tonnes	Nov Tonnes	Dec Tonnes	Yearly Total
Mixed Papers	114.10	75.24	141.16	147.71	96.63	89.98	89.48	70.23	82.46	87.53	128.88	72.85	1,196.25
Commingle	315.66	348.89	165.84	94.56	74.52	78.05	68.05	89.34	62.66	98.60	27.07	19.50	1,442.74
Single Stream Bagged	585.46	422.18	524.67	562.29	571.00	502.59	493.07	519.69	506.24	518.23	287.30	234.58	5,727.30
Single Stream Loose	1,459.35	1,232.25	946.93	1,390.69	1,299.98	676.61	1,154.48	649.21	646.74	1,090.95	1,031.99	1,352.92	12,932.10
Single Stream Baled	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PET #1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HDPE #2	0.00	0.11	0.00	0.06	0.00	0.00	0.10	0.00	0.10	0.00	0.12	0.00	0.49
Mixed Plastics	0.00	0.00	0.00	0.00	96.40	151.28	218.30	310.20	208.36	78.78	94.37	14.51	1,172.20
OCC - Baled	0.91	5.70	0.00	3.28	1.08	0.00	0.52	0.00	5.11	2.25	1.09	2.28	22.22
OCC - Loose	163.67	186.15	253.48	247.09	200.98	185.55	171.56	196.09	187.44	184.81	143.77	192.98	2,313.57
OWP/Fine - loose	21.11	0.00	0.00	0.10	0.00	2.55	0.00	0.00	3.05	0.00	0.00	0.00	26.81
ONP#6 Baled	0.00	0.00	0.00	0.00	0.00	0.00	18.40	0.00	0.00	0.00	0.00	0.00	18.40
ONP#6 Loose	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.24	0.00	0.00	3.24
ONP#8 Loose	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ONP#8 Bales	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scrap Metal	25.43	30.94	0.00	43.96	62.84	21.92	63.53	47.01	23.17	48.69	29.00	34.02	430.51
Electronics	46.42	5.12	9.92	30.80	29.40	15.83	26.47	30.21	15.65	27.85	9.97	4.95	252.59
Tires	2.25	1.76	1.01	3.00	6.74	3.26	3.17	2.75	3.85	3.52	3.38	1.64	36.33
Clothing	0.64	0.31	0.75	0.71	1.17	0.93	0.91	1.07	0.64	0.54	0.72	0.29	8.68
Brush	0.00	0.00	0.00	161.69	360.18	206.46	332.66	356.85	81.70	41.08	77.68	0.00	1,618.30
Leaves	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,531.66	0.00	1,531.66
Yardwaste	0.00	0.00	0.00	196.36	682.27	438.18	355.98	271.15	212.36	373.02	780.33	60.47	3,370.12
Total Month	2,735.00	2,308.65	2,043.76	2,882.30	3,483.19	2,373.19	2,996.68	2,543.80	2,039.53	2,559.09	4,147.33	1,990.99	32,103.51

Table 4. 2013 Monthly Summary of incoming Material (continued)

Organics Compost Facility Incoming Material

Incoming Material	Jan Tonnes	Feb Tonnes	March Tonnes	Apr Tonnes	May Tonnes	June Tonnes	July Tonnes	Aug Tonnes	Sept Tonnes	Oct Tonnes	Nov Tonnes	Dec Tonnes	Yearly Total
Mixed Organics	1,671.31	1,230.92	1,377.91	1,574.46	1,500.99	1,376.70	1,455.77	1,469.37	1,564.02	1,664.86	1,838.14	1,439.77	18,164.22
Yardwaste	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Brush	48.84	7.32	36.70	67.87	66.75	43.49	57.68	83.17	62.32	162.19	110.56	62.29	809.18
Ammendmant/Mulch	0.00	66.24	0.00	0.00	0.00	0.00	0.00	0.00	21.18	29.25	8.15	26.25	151.07
Overs/Hamilton	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Month	1,720.15	1,304.48	1,414.61	1,642.33	1,567.74	1,420.19	1,513.45	1,552.54	1,647.52	1,856.30	1,956.85	1,528.31	19,124.47

Facility Totals	103,671.53
Residue from MRF and Organic Plant	6,257.72
Overall Site Total	97,413.81

Notes: *All volumes in tonnes*

Overall Site Total = (Transfer Station Annual Tonnage + WRIC Annual Tonnage + Compost Facility Annual Tonnage) - (Transfer Station Residue from MRF and Organics)

MRF = Materials Recovery Facility

PDO = Public Drop Off

Single Stream = all recyclable products mixed together (bottles, cans, paper, cardboard, etc.)

OCC = Old Corrugated Cardboard

OWP = Office Waste Paper (also known as Fine Paper)

Overs/Hamilton or residual compost waste= a type of residue created during the composting process

Incoming HHW is sent to hazardous waste haulers for disposal or recycling. The City's Paint Plus Re-Use Program was conducted between April 23 and October 12, 2013. A monthly summary of the amounts of HHW (separated by waste class) received at the site for the Paint Plus Re-Use Program for 2013 are tabulated below.

Material/Month	April	May	June	July	August	September	October	Total
Paints and Coatings Non-aerosol; #145 (L)	186.5	1233	1121	969	1123	442	258	5,333
Paints and Coatings Aerosol; # 331 (kg)	1.5	19.3	32.2	153	33.5	21	7	267.5
Solvents # 213 (L)	7	50	65	53	101	4	11	291
Antifreeze (L)	2	22	4	23	18	6	1.5	79
Propane Cylinders (kg)	1.5	12	12	9	2.5	1	0	38
Cleaners/Detergents #148 (L)	5	60	62	111	71	35.5	20	364
Car Products #213 (L)	0	11	17	35	11	10	4.5	88
Non-Paint Aerosols #331 (kg)	0	0.12	1.07	9	4.7	2	5	22
Motor Oil (L)	8	22.5	30.2	26	21	14	12	134
Plaster/Cement/Grout (kg)	0	23	40	13	2	21	13	112
Client Count	**28**	**189**	**196**	**172**	**181**	**76**	**42**	**884**

A total of about 182,349 L and 21,782 kg of household special wastes[12] were received in 2013. In addition, 949 20-lb. propane tanks, 3,980 1-lb. propane cylinders, 9,476 (30,420 ft) fluorescent tubes, 362 fire extinguishers, 89 compressed gas tanks and 10 oxygen welding tanks were received in 2013. All materials accepted at the HHW depot are re-used, recycled or shipped off-site for disposal.

As shown on Table 4, the source of the bulk of the materials received was primarily mixed solid waste of domestic origin. Waste accepted by the site originated mainly from the City of Guelph and the surrounding area, the County of Wellington, Dufferin County and the United States. The Transfer Station can accept waste from anywhere in Ontario, New York and Michigan States as long as it is within the acceptable daily tonnage limit.

There were no rejected and no suspect loads received during 2013.

6.2 Summary of Wastes/Recyclables Processed and Outgoing

Materials that are accepted by the site are either processed (composted), diverted to be re-used or sent to the waste Transfer Station for disposal. Section N, Condition 52(c) requires monthly reporting of processed materials was the site, which are presented on Table 5. Of the 80,024 tonnes of outgoing material, 24,773 tonnes (31%)[13] is processed on-site through the Material Recovery facility (MRF) and 3,432 tonnes (4%) of finished compost was produced. 74.22 tonnes goes from the organic compost plant to Overs. The remaining 51,745 tonnes (66%) is shipped off-site to other destinations. In 2013, the HHW facility received and diverted a total of about 182,349 L and 21,782 kg of household special wastes, in addition to 949 20-lb. propane tanks, 3,980 1-lb. propane cylinders, 9,476 (30,420 ft) fluorescent tubes, 362 fire extinguishers, 89 compressed gas tanks and 10 oxygen welding tanks.

12. *Paints, flammables, aerosols, acids, bases, pesticides, oxidizers, batteries (alkaline, car, household), pharmaceuticals, motor oil, glycol. Sharps, peroxide, mercury*

13. *Total of 30,506 tonnes outgoing from the WRIC - 4,194 tonnes residue from processing – 1,539 tonnes glass residue from processing = 24,773 tonnes.*

Table 5. 2013 Monthly Summary of Outgoing Materials

Transfer Station Outgoing Materials

Outgoing Mixed Waste	Jan Tonnes	Feb Tonnes	March Tonnes	Apr Tonnes	May Tonnes	June Tonnes	July Tonnes	Aug Tonnes	Sept Tonnes	Oct Tonnes	Nov Tonnes	Dec Tonnes	Yearly Total
Mixed Solid Waste	3,362.01	2,594.83	2,911.07	4,132.47	5,262.48	4,156.50	4,687.91	4,101.35	4,155.15	4,294.88	4,038.43	2,779.13	46,476.21
C & D	124.01	64.10	54.37	201.21	45.59	192.59	145.66	265.33	128.03	149.18	48.28	88.34	1,506.69
Shingles	27.97	0.00	0.00	233.18	312.62	327.61	313.48	333.45	402.86	447.69	193.56	99.05	2,691.47
Clean Wood	0.00	9.96	34.45	8.36	86.91	19.34	19.20	0.00	10.27	9.90	9.45	50.36	258.20
Drywall	0.00	16.09	10.04	27.90	40.64	10.34	0.00	31.60	0.00	0.00	75.21	0.00	211.82
Concrete, Rubble	32.16	0.00	0.00	0.00	90.40	197.72	85.03	71.56	19.71	27.66	63.17	13.03	600.44
Total Month	3,546.15	2,684.98	3,009.93	4,603.12	5,838.64	4,904.10	5,251.28	4,803.29	4,716.02	4,929.31	4,428.10	3,029.91	51,744.83

WRIC (MRF Recycling & PDO Facility) Outgoing Materials

Outgoing Mixed Waste	Jan Tonnes	Feb Tonnes	March Tonnes	Apr Tonnes	May Tonnes	June Tonnes	July Tonnes	Aug Tonnes	Sept Tonnes	Oct Tonnes	Nov Tonnes	Dec Tonnes	Yearly Total
Single Stream Loose	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Single Stream Baled	0.00	0.00	0.00	0.00	0.00	34.74	0.00	0.00	0.00	0.00	0.00	0.00	34.74
Tires	2.25	1.76	1.01	3.00	6.74	3.26	3.17	2.75	3.85	3.52	3.38	1.64	36.33
PET #1	86.05	119.42	64.02	79.51	96.29	83.83	79.97	100.53	38.05	113.22	74.56	73.96	1,009.41
HDPE #2	28.65	19.25	37.44	16.78	34.66	18.95	20.13	37.51	57.43	37.15	42.39	43.48	393.82
Mixed Plastics Baled	5.39	18.68	17.47	20.24	39.07	19.70	102.56	59.07	59.40	38.47	0.00	19.79	399.84
Aluminum Baled	38.26	0.00	21.32	39.02	14.89	0.00	19.25	37.92	17.23	0.00	20.24	12.80	220.93
OCC Baled	415.17	336.23	430.97	514.70	414.90	390.90	381.99	297.94	325.73	303.87	334.00	296.60	4,443.00
ONP #6 Baled	387.82	245.72	236.35	219.03	202.42	320.40	277.30	218.80	189.32	320.18	420.80	175.88	3,214.02
ONP#7 Baled	24.47	0.00	0.00	0.00	21.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.46
ONP #8 Baled	600.36	542.09	542.39	567.55	580.66	401.21	365.61	350.92	323.76	391.03	419.61	445.34	5,530.53
OWP/Fine Paper	38.37	0.00	0.00	0.00	17.70	0.00	0.00	0.00	0.00	0.00	18.30	0.00	74.37
Tubs and Lids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.51	39.02	36.93	20.24	18.66	134.36
Steel Cans Baled	108.26	21.42	148.23	72.16	43.03	63.85	47.85	40.67	44.51	42.62	86.37	22.21	741.18
Polycoat/Tetra Pak	0.00	0.00	20.08	0.00	0.00	0.00	17.71	0.00	0.00	21.10	0.00	0.00	58.89
Mixed Glass	149.95	151.98	155.54	155.25	34.87	68.65	76.76	73.84	64.99	113.17	68.71	66.54	1,180.25
Scrap Metal	25.43	30.94	0.00	43.96	62.84	21.92	63.53	47.01	23.17	48.69	29.00	34.02	430.51
Electronics	46.42	5.12	9.92	30.80	29.40	15.83	26.47	30.21	15.65	27.85	9.97	4.95	252.59
Clothing	0.64	0.31	0.75	0.71	1.17	0.93	0.91	1.07	0.64	0.54	0.72	0.29	8.68
Mixed Recyclables	39.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.98
Empty Oil Containers	0.22	0.12	0.18	0.23	0.31	0.29	0.28	0.26	0.27	0.24	0.41	0.15	2.96
Yard Waste	0.00	0.00	0.00	196.36	682.27	438.18	355.98	271.15	212.36	373.02	780.33	60.47	3,370.12
`	0.00	0.00	0.00	161.69	360.18	206.46	332.66	356.85	81.70	41.08	77.68	0.00	1,618.30
Leaves	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,531.66	0.00	1,531.66
Residue (from processing)	535.45	396.32	369.32	478.02	503.86	258.68	327.56	257.84	261.08	316.86	275.42	213.60	4,194.01
Glass Residue(from process)	142.47	93.91	129.06	157.27	220.25	112.14	146.58	89.82	90.20	102.86	168.49	85.99	1,539.04
Total Month	2,675.61	1,983.27	2,184.05	2,756.28	3,367.50	2,459.92	2,646.27	2,293.67	1,848.36	2,332.40	4,382.28	1,576.37	30,505.98

Table 5. 2013 Monthly Summary of Outgoing Materials (continued)

Organic Compost Plant Outgoing Materials

Outgoing Mixed Waste	Jan Tonnes	Feb Tonnes	March Tonnes	Apr Tonnes	May Tonnes	June Tonnes	July Tonnes	Aug Tonnes	Sept Tonnes	Oct Tonnes	Nov Tonnes	Dec Tonnes	Yearly Total
Finished Compost	284.52	244.75	294.86	165.03	143.63	600.24	147.43	241.40	285.06	306.86	170.04	548.42	3,432.24
Overs	0.00	74.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.22
Screening Waste	39.56	18.79	36.31	27.58	34.51	45.03	57.31	17.33	24.76	37.87	35.45	27.64	402.14
Residual Compost Waste	5.83	16.05	23.45	0.54	0.00	0.00	6.44	37.38	8.24	0.00	0.00	0.00	97.93
Total Month	329.91	353.81	354.62	193.15	178.14	645.27	211.18	296.11	318.06	344.73	205.49	576.06	4,006.53

Facility Totals	86,257.34
MRF & Organic Residue to Site Transfer Station	6,233.12
Overall Site Total	80,024

Tonnages of incoming and outgoing materials will not be equal as some mass is lost through evaporation and processing. Table 6 is reconciliation of the incoming and outgoing materials and materials processed from the site.

Table 6. Summary of Incoming, Outgoing and Processed Quantities

Recyclable and Other Materials Processed in 2013	(tonnes)
Quantity Received (Table 4: Incoming 2013)	97,414
Quantity in Inventory from Prior Year (2012)	19,881
Quantity Sold (Table 5)	80,024 – 46,476 = 33,548
Quantity of Mixed Solid Waste Sent to Landfill (Table 5)	46,476
Quantity in Inventory at the End of 2013	(97,414 + 19,881) – 33,548 – 46,476 = 37,273

There is a difference of 37,273 tonnes between incoming and outgoing wastes/materials. This can largely be attributed to several factors:

- material in the organic facility that is still in the composting stage;
- stored recyclable material not yet processed;
- baled recyclable product awaiting shipment; and
- construction and demolition material including shingles, drywall, clean wood and rubble awaiting shipment.

Table 5 also shows a monthly summary of the outgoing materials shipped off from the transfer station during 2013 as per Section N, Condition 52(d) of the amended C of A/ECA. Of the 51,745 tonnes of non-processed outgoing materials received, 31,534 tonnes (61% of the outgoing materials) is sent to the St. Thomas (Green Lane) Landfill in Elgin County and 7,716 tonnes (15% of outgoing materials) is sent to the Waste Management Twin Creeks Landfill in Lambton County for disposal. 5,918 tonnes (11%) of material from the transfer station was sent to the Covanta Energy from Waste facility in Niagara Falls, New York. The remaining 6,577 tonnes (13%) of non-processed materials is marketable consisting of other recyclable materials such as shingles, construction and demolition debris, clean wood, concrete and rubble.

In 2013, 24,773 tonnes of marketable processed material transferred off the site from the WRIC facility. 13,343 tonnes (54%) was paper-based goods such as cardboard and newsprint, 1,937 tonnes (8%) was plastics and the remaining 9,493 tonnes (38%) was other recyclable materials such as aluminum, steel cans, glass, tires, metal, yard waste, brush and leaves. As reflected in the volumes above, the majority of the marketable materials sold were paper products.

The WRIC achieved a 100% diversion rate for organic (yard, leaf and brush) and a 42.5% rate[14] of diversion for the remaining materials accepted at the site in 2013.

Most of the HHW materials were shipped by Photech Environmental, St. Catharines (the waste removal contractor for 2013) for disposal or re-use.

14. *Diversion rate (excluding yard waste) = Incoming for Transfer Station and WRIC (90,039 tonnes) – Outgoing MSW from Transfer Station (51,745 tonnes)/Incoming (90,039 tonnes) x 100 = 42.5%.*

Outgoing household hazardous waste materials were manifested to Photech and disposed of by the companies identified below for recycling and re-use.

Waste Types	List of Intended Receivers
Paints	• Photech Environmental Solutions Inc.
Oil Filters	• Safety Kleen, Breslau, ON
Bulk Oil/Antifreeze	• Safety Kleen, Breslau, ON
Pesticides	• Clean Harbours, Thorold, ON
Pharmaceuticals	• Phase Separation Solutions
Oxidizers/Acids/Bases	• Stablex Canada Inc., Quebec
Pathological Wastes/Syringes	• Stericycle, Toronto, ON
Car Batteries	• Benmet Steel & Metal
Fluorescent Tubes/Lamps	• Aevitas
Household Batteries/Mercury	• Raw Materials Corp.
Propane Tanks	• Simcoe Energy & Technical Services
Aerosols	• Peintures Recuperees Du Quebec
Organics/Flammables	• Newalta Industrial Services Inc., ON

Destinations/buyers for dry recyclable processed materials include:

Material	Destination, Major Buyers
Shredded Yard Waste	• Budget Transport, Try Recycling
Corrugated Cardboard	• Norampac, Solvay
Shingles	• Tri Recycling
Newsprint	• Continental Paper Grading, Canada Fibers
Fine Paper	• Cascades
Steel Cans	• Triple M Metals
Aluminum Cans	• Connecticut Metals
PET Bottles (#1)	• Plastrec, Ecotex, ReMM, Canadian Plastics
HDPE (#2 plastics)	• Entropex, Canadian Plastics
Mixed Plastic (# 4,5, 7)	• Entropex
Scrap Metal / White Goods	• Triple M Metals
Tires	• Envirocan
Scrap Wood, Drywall	• Greenstep Environmental
Brush	• Waste Management, On-site Organic Plant

7. Leachate Quality

7.1 Leachate Indicators

To determine the potential leachate quality that may be generated from the Transfer Station, the leachate quality from the City of Guelph closed Eastview Road Landfill was examined. Prior to closure in 2003, this landfill accepted a similar mix of waste as the Transfer Station. Groundwater monitoring has been routinely conducted on this site since 1991. Leachate quality is measured by a series of groundwater monitors in the waste and in the outwash layer beneath the waste. In general, the leachate quality is characterized by elevated concentrations of chloride, boron, phenols (critical leachate parameters), sodium, potassium, magnesium, iron, manganese, ammonia and alkalinity (leachate indicator parameters). Also, BOD, COD and oil and grease have been found to be elevated. Though monitoring continues at the site, leachate quality up to 2009 was only considered since leachate strength is expected to decrease over time with closure of the landfill. Table 7 provides a summary of the historic leachate concentrations (1997 to 2009) for the leachate monitors.

Table 7. Summary of Leachate Quality from the Waste Monitors, Eastview Landfill

Parameters		Avg.	Min.	Max.
General	• pH	7.68	7.09	8.63
	• Conductivity (µS)	14,364	3,880	21,500
	• Alkalinity (mg/L)	6,195	2,900	9,050
	• Hardness (mg/L)	2,161	1,010	2,900
Critical Indicators	• Chloride (mg/L)	1,841	101	2,660
	• Boron (mg/L)	22.8	6.22	47
	• Phenol (µg/L)	100	0.72	830
Leachate Indicators	• Calcium (mg/L)	96	33	221
	• Sodium (mg/L)	1,468	424	2,300
	• Magnesium (mg/L)	468	144	661
	• Potassium (mg/L)	794	149	1,410
	• Iron (mg/L)	11	1.1	41.4
	• Manganese (mg/L)	0.10	0.027	0.688
	• Ammonia (mg/L)	583	0.05	1,200

With regard to the Transfer Station, downgradient water quality is compared to background water quality for the critical leachate indicator parameters, as identified above, to determine potential impacts from site operations.

The Transfer Station operation is not expected to generate any significant quantities of leachate because all waste handling operations are conducted in an indoor environment within the transfer building. The Design and Operations plan incorporates a number of features to protect the groundwater and surface water resources. This includes features such as a completely contained waste tipping floor and collection system and operating procedures that ensure that waste is handled indoors in a closed environment and is not stored on-site for any length of time. Nevertheless, it is still appropriate to examine water quality at the site for indicators of leachate affects to confirm that all of the safeguards are functioning.

7.2 Petroleum Indicators

The Transfer Station operations do not involve the use, storage or handling of significant quantities of potential contaminants, other than machine fuel/lubricants (the only on-site equipment that requires fuelling is a front-end loader) and occasional dust suppressant chemicals. If these are handled with normal, reasonable precaution (according to the regulations) then the risk of groundwater contamination is very low. Established procedures for spills response and contingency are in place. BTEX analysis results are examined to determine if there is any indication of hydrocarbon contamination. Downgradient water quality is discussed in Sections 5.4 and 5.5.

8. Groundwater, Leachate and Surface Water

A ground and surface water monitoring program is conducted on the sites as outlined in Section 2.

8.1 Groundwater Elevation and Flow Directions

The C of A/ECA requires collection of water levels four times per year. Groundwater levels were collected in April, June, September and December during 2013. Groundwater elevations were measured at 19 locations that included a total of 34 monitors. The monitors are outlined below with the geological unit they are measuring. Groundwater elevations are appended. Hydrographs for each location are presented in Appendix A.

Monitor	Geological Unit	Groundwater Zone
2a-91	Sandy Silt Till	Not Used
2b-91	Sandy Outwash	Water Table
5-96	Dolostone Bedrock	Water Table/Bedrock
6a-96	Dolostone Bedrock	Bedrock
6b-96	Sandy Outwash	Water Table
7-96	Sandy Outwash	Water Table
8-96	Dolostone Bedrock	Water Table/Bedrock
9-96	Sandy Outwash	Water Table
10-00[1]	Dolostone Bedrock	Bedrock
11a-01[1]	Dolostone Bedrock	Bedrock
11b-00[1]	Gravelly Outwash	Water Table
12a-00[2]	Dolostone Bedrock	Bedrock
12b-00	Gravelly Outwash	Water Table
13a-01[3]	Dolostone Bedrock	Bedrock
13b-01[3]	Gravelly Outwash	Water Table
14a-01[3]	Dolostone Bedrock	Bedrock
14b-01[3]	Gravelly Outwash	Water Table

Monitor	Geological Unit	Groundwater Zone
15a-01[3]	Dolostone Bedrock	Bedrock
15b-01[3]	Gravelly Outwash	Water Table
16a-08[3]	Dolostone Bedrock	Bedrock
16b-08[3]	Gravelly Outwash	Water Table
17a-08[3]	Dolostone Bedrock	Bedrock
17b-08[3]	Gravelly Outwash	Water Table
18a-08[3]	Dolostone Bedrock	Bedrock
18b-08[3]	Gravelly Outwash	Water Table
19a-08[3]	Dolostone Bedrock	Bedrock
19b-08[3]	Gravelly Outwash	Water Table
20a-08[3]	Dolostone Bedrock	Bedrock
20b-08[3]	Gravelly Outwash	Water Table
21-08	Dolostone Bedrock	Water Table/Bedrock
22a-11[3]	Dolostone Bedrock	Bedrock
22b-11[3]	Gravelly Outwash	Water Table
23a-12	Gravelly Outwash	Water Table
23b-12	Dolostone Bedrock	Bedrock

Notes: (1) Locations recommended by MOE.
(2) Replaces 3-97.
(3) Locations on Transfer Station Property.

The bedrock groundwater flow is discussed first as the understanding of the geology controlling this flow is important to the shallow water table flow. In general, the groundwater flow is similar to previous years (Figure 2). Groundwater flow is generally from southwest to northeast (bedrock high) and northeast to southwest (from Watson Road) coming into the site from both directions. It is expected that flow would ultimately merge and be directed northerly based on the assessment of the bedrock surface topography, which suggests that the bedrock is deepening to the north. This is important as previous hydrogeological assessments in the area suggest that the bedrock low observed in this area is a former paleo river valley (incised bedrock low) that trends to the north. Therefore, it would be expected that the groundwater flow would follow this feature. The 2008 monitoring nests (bedrock and overburden) were placed to the east of the facility (BH18-08, BH19-08 and BH20-08) to confirm the geology and groundwater flow in this area. Southeast of the Transfer Station, the bedrock elevation is highest at BH20-08, sloping to the northwest towards the paleo river valley. A more detailed assessment of the geology in the area incorporating the 2008 borehole data was provided in the 2009 Annual report (AECOM, 2010), which confirms that there is a pronounced incised bedrock low that trends through the site to the north. The addition of the new location on Stone Road (BH23-12), also suggest that the flow in the incised bedrock low is generally to the north.

A SIZE 8.5" x 11" (215.9mm x 279.4mm)

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DO NOT SCALE THIS DOCUMENT. ALL MEASUREMENTS MUST BE OBTAINED FROM STATED DIMENSIONS.

AECOM

Transfer Station / WRIC
City of Guelph
Annual Monitoring Program

Bedrock Groundwater Flow
(June 2013)

Legend

	Approximate Site Boundary
—x—x—	Fence
	Monitoring Well
(166.45)	Bedrock Groundwater Elevation
170	Bedrock Groundwater Contour

PROJECT NUMBER
60315291

DATE
March 2014

FIGURE
2

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In general, the shallow groundwater flow beneath the site is similar to previous years (Figure 3) though flows have been refined and confirmed based on the groundwater elevation information from the new monitors installed in 2008 and the updated geological model assessment in 2009. Shallow groundwater flow in the sandy outwash is expected to follow the bedrock topography and be similar to the bedrock groundwater flow. Overall, the shallow flow is similar, directed into the site from the bedrock high on the southwest area of the site and from along Watson Road. It is also expected that flow would ultimately merge and be directed northerly within the alignment of the incised bedrock low. The 2008 drilling also identified a bedrock high (similar to the high to the west) southeast of the site in the vicinity of 20a-08, between which the bedrock trends. The shallow water table elevation is generally similar to BH19b-08 to apparently slightly lower (BH19b-08 was 315.88 mASL, whereas BH23b-12 was 315.85 mASL in June 2013). The slight difference is most likely related to the actual positioning in the bedrock low as the new location intercepted the bedrock at a deeper elevation than at BH19 indicating that BH19 is most likely higher up on the edge the bedrock low. Though this is the case, the overall trend of the bedrock low is to the northwest.

In their review of the 2006 Annual Monitoring report, the MOE commented that though water levels are collected four times per year, only one data set was used to plot the groundwater contour map. It should be noted that for our assessment of groundwater flow conditions, each set of water level data are plotted and reviewed. However, for reporting purposes, only one set of data are presented as flow contours from season to season (and from year to year) as flows have been quite similar. Should significant differences between the seasonal flow conditions be noted, they would be identified and discussed.

8.2 WRIC Detention Pond 1 (SW 3) Monitoring

In 2013, the pond at SW 3 was inspected monthly with samples collected when possible. The table below briefly outlines the conditions at Detention Pond 1 (SW 3) during the 2013 monthly monitoring events.

Month	Conditions	Sampling Date
January	Sample collected	**January 30, 2013**
February	Dry	**No Sample**
March	Dry	**No Sample**
April	Sample collected	**April 18, 2013**
May	Sample collected	**May 28, 2013**
June	Dry	**No Sample**
July	Dry	**No Sample**
August	Sample collected	**August 7, 2013**
September	Sample collected	**September 24, 2013**
October	Sample collected	**October 31, 2013**
November	Sample collected	**November 19, 2013**
December	Sample collected	**December 5, 2013**

No further effects are expected at SW 3 since compost is no longer stored on the pad and has not been since 2006. Composting did occur on the site during 2012 and 2013 however, all composting activities occurred indoors. In the past when the water quality was sampled at SW 3 (or CL-1 leachate), it showed elevated concentrations of conductivity, potassium, BOD, COD, TKN, ammonia, total phosphorus, chloride, sodium and iron. In 2013, SW3 parameter concentrations are generally much lower than pre-2007 concentrations in the absence of compost inputs. Though concentrations were still lower than pre-2007, 2013 parameter concentrations tended to be highest in April and November/December, possibly due to flushing of residual leachate impacts combined with road salt impacts at this station and have been apparent during previous thaw events and early spring sampling events. Parameter concentrations were generally similar to past results.

A SIZE 8.5" x 11" (215.9mm x 279.4mm)

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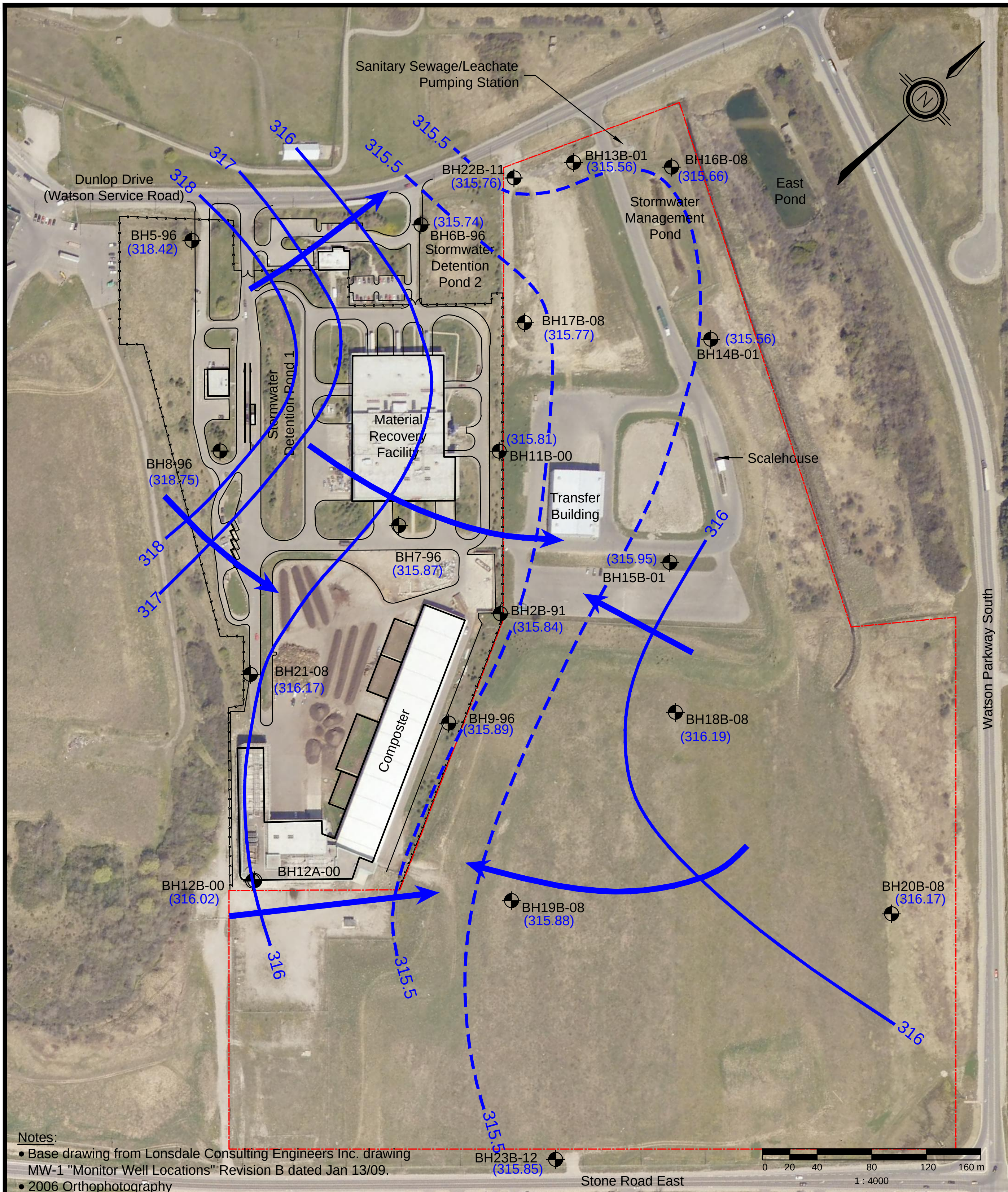

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AECOM

Transfer Station / WRIC
City of Guelph
Annual Monitoring Program

Shallow Groundwater Flow
(JUNE 2013)

Legend

- Approximate Site Boundary
- Fence
- Monitoring Well
- (317.67) Shallow Groundwater Elevation
- 317 Shallow Groundwater Contour

PROJECT NUMBER
60315291

DATE
March 2014

FIGURE
3

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There were no organics detected during the April 2013 organics sampling of SW3. Historically, only low levels of a few organics have occasionally been detected in the surface water samples.

As suggested by the MOE, SW3 quality was compared to the water quality from the samples collected from the staff gauge in the East Pond (designated EPTS-01). The East Pond can be considered as background surface water quality as it is upstream of both facilities[15]. Most indicator parameters were elevated at SW3 in 2013 compared to historic concentrations in the East Pond. Elevated concentrations may be related to residual leachate inputs in the clay-lined pond, which is expected to continue to flush out over time. Although this was the case, all water collected from the compost pad into the pond was directed to the sanity sewer.

8.3 Groundwater Monitoring

8.3.1 Transfer Station

The monitoring program for the site includes three overburden monitors (in outwash materials) 13b-01, 14b-01 and 15b-01 and three bedrock monitors 13a-01, 14a-01 and 15a-01. The MOE completed a review of the 2004 and 2005 Annual Monitoring reports for the Eastview Landfill and the Transfer Station. The MOE recommended installation of additional monitoring locations to better address the geological setting with respect to the groundwater flow. Based on the MOE review comments, six monitoring nest locations (BH16-08 to BH21-08) were completed in 2008, at the locations shown on Figures 1 to 3. These monitors consist of overburden outwash (16b-08, 17b-08, 18b-08, 19b-08, 20b-08) and bedrock monitors (16a-08, 17a-08, 18a-08, 19a-08, 20a-08). These monitors were incorporated into the routine monitoring program in 2008. Based on the confirmation of groundwater flow at the site, the MOE recommended that a new monitoring location be established at the northerly boundary to serve as a Guideline B7 (RUP) boundary compliance point. This location was completed in 2011 and consists of a deep bedrock and shallow overburden outwash monitor (22a-11 and 22b-11). A further location along Stone Road was completed in the summer of 2012, as recommended to the MOE, to better assess the potential effects, if any, from the soils that had been stored on site. This location also consists of a deep bedrock and shallow overburden outwash monitor (23a-12 and 23b-12).

8.3.2 WRIC

Baseline groundwater monitoring was conducted from 1991 to 1995, prior to construction at the WRIC site (monitor locations 1a-91, 1b-91, 2a-91, 2b-91, 3-91 and 5-91). Monitoring of the groundwater at the WRIC Facility commenced in April 1996 at the remaining monitoring locations that were not destroyed during construction (Figure 1). In late 1996, replacements for the monitors that were destroyed were completed and added to the program. The present monitoring program, initiated in 1999 after MOE approval, is twice per year (June and December).

8.3.3 Groundwater Quality

Groundwater sampling was conducted for both the Transfer Station and the WRIC in June and December 2013. Groundwater quality results are appended.

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15. Memorandum from Lynnette Latulippe (MOE) to Bill Shields (City of Guelph), Re: Annual Monitoring Report – 2009 Guelph Wet-Dry Recycling Centre and Waste Transfer Station, dated February 7, 2011.

8.3.3.1 Background Outwash Water Quality

Background outwash groundwater quality has historically been measured at locations 14 and 15 on the adjacent eastern property. Location 15 is now considered a downgradient location due to the construction of the compost pad to the east. Groundwater flow is directed towards the site from these areas. Recent monitors BH18b-08, BH19b-08 and BH20b-08, located southeast of the Transfer Station and 16b-08, located north of the Transfer Station are also representative of background outwash conditions based on the groundwater flow patterns in this area. BH18b-08 was dry and 19b-08 had insufficient volume of water for sampling and therefore, were not sampled in June 2013. In December 2013, BH18b-08 was dry therefore, no samples were collected from this monitor in 2013. New monitor 23b-12 is a background location and included in this discussion. Water quality for the indicator parameters are summarized in the table below.

Monitor		Alkalinity (ppm)	Chloride (ppm)	Sodium (ppm)	Calcium (ppm)	Magnesium (ppm)	Potassium (ppm)
14b-01	Historical Range	267 – 438	22.3 – 280	0.1 – 170	0.2 – 140	0.05 – 38	0.2 – 2.6
	2013 Average	405	165.5	99	160	38.5	2.25
16b-08	2008-2012 Range	318 – 597	10 – 260	23 – 150	89 – 170	27 – 51	1.1 – 3.1
	2013 Average	470	84	76.5	128.5	38.5	1.8
18b-08	2008-2011 Range*	284 - 423	8 - 19	190 - 270	29 - 60	12 - 18	2.1 – 5.5
19b-08	2008-2012 Range	289 – 666	7 – 60	160 – 480	23 – 85	10 – 25	4.5 – 11
	Dec 2013	650	16	220	45	14	10
20b-08	2008-2012 Range	235 – 296	7 – 170	3.5 – 58	78 – 110	25 – 32	1.1 – 3.3
	2013 Average	270	79.5	36.5	95.5	28	1.45
23b-12	2012 Range	330 - 380	140 - 190	120	120 - 130	35 - 40	4.2 - 5
	2013 Average	360	130	90.5	125	31	3.2

Note: Historical Ranges include all data up to and including 2012, except where specified.
**Only two samples have been collected from monitor 18b-08: March 2008 and June 2011*

Monitors 18b-08, 19b-08, 20b-08 and 23b-12 have chemistry similar to monitors 14b-01, located northeast of the WRIC though a few parameters at 19b-08 were notably higher than the other overburden background monitors. Monitor 19b-08 showed elevated concentrations of alkalinity, potassium, sodium and boron. Sulphate concentrations at 19b-08, which were previously elevated, were within the range of concentrations at the other overburden background monitors in 2013. Sulphate concentrations were also elevated at monitor 18b-08 though this monitor has only been sampled twice due to persistent dry conditions. The cause of these elevated concentrations is unknown, however, since these monitors are upgradient of the site, the elevated concentrations are not a result of site activities. December COD at 19b-08 was lower than the historic minimum concentration. June total phosphorus at 20b-08 was higher than the historic maximum concentration. The December alkalinity and TKN at 23b-12 were higher than the historic maximum concentrations and December iron was lower than the historic minimum concentration. Since most of these monitors have a fairly limited dataset, some variability in parameter concentrations is expected. Alkalinity appears to be showing an increasing trend over time at 19b-08.

Elevated iron at 14b-01, 16b-08, 19b-08 and 20b-08 were noted since December 2011 but appear to have decreased in 2013 with the iron concentrations at these monitors below the laboratory detection limits in December 2013. The cause of the increase in iron concentrations is unknown. As these elevated concentrations were apparent in the background monitors, it is concluded that they are not a result of site operations.

Elevated sodium and chloride concentrations at 19b-08 have decreased since the first few sampling events such that the December 2012 and 2013 sodium and chloride concentrations were comparable at about 240 mg/L and 9 mg/L, respectively, compared to the 2008 averages of 415 mg/L and 49 mg/L. The 2013 16b-08, 20b-11 and 23b-08 chloride concentration are within the range of concentrations found at 14b-01.

The 2013 parameter concentrations at monitor 14b-01 were within the historic range of concentrations at this monitor for both sampling events, except for June magnesium, calcium and zinc and December total phosphorus which were higher than the historic maximum concentrations. COD concentrations at 14b-01 were showing a decreasing trend since peaking in 2004-2003 such that the 2012 concentrations were about 11 mg/L, similar to lower than the other background overburden monitors. However, the December 2012 COD concentration was 46 mg/L, the highest recorded at this location but are low again in 2013 (4 mg/L to 8.1 mg/L). Monitor 14b-01 has shown elevated sodium and chloride concentrations, most likely related to road salting along Watson Parkway. The June 2013 chloride concentration of 250 mg/L was at the ODWS. The average 2013 indicator parameter concentrations at monitor 14b-01 were generally higher than the average 2012 concentrations.

Monitor 16b-08 is located near the northwest corner of the of the Transfer Station site by the stormwater management pond. Indicator parameter concentrations are within the range of concentrations for the other background overburden monitors though they tend to be at the high end of the range. The 2013 parameter concentrations at monitor 16b-08 are within their historic ranges. With the longer term data, this location appears to exhibit a seasonal increase in road salt effects (based on chloride and sodium) in the spring.

8.3.3.2 Background Bedrock Water Quality

Background bedrock groundwater quality is measured at locations 5-96 (northwest) and 8-96 (west) on the bedrock high along the western portion of the WRIC site from where groundwater flows into the immediate area of the WRIC. As well, groundwater quality in the bedrock below the site was measured at location 6a-96, 14a-01, 16a-08, 18a-08, 19a-08 and 20a-08, as well as new upgradient monitor 23a-12. Background bedrock groundwater quality is typically hard with more elevated concentrations of the major ions, most noticeably alkalinity and calcium. These types of concentrations are associated with dolostone, which is made up of calcium and magnesium carbonate. The average concentrations of these parameters observed in 2013, along with the historical ranges at these locations are provided below.

Also, provided in this table are the 2013 averages from the downgradient bedrock WRIC site monitors (10-00, 11a-00) installed in late 2001 and late 2011 (22a-11) on the Solid Waste Transfer Station property, the bedrock monitors (13a-01, 15a-01, 17a-08, 18a-08, 19a-08, 20a-08).

	Monitor		Alkalinity (ppm)	Chloride (ppm)	Sodium (ppm)	Calcium (ppm)	Magnesium (ppm)	Potassium (ppm)
Background	**5-96**	Historical Range[1]	278 – 380	112 – 474	71.9 – 263	83.7 – 134	24.2 – 38.4	3.9 – 6
		2013 Average	275	845[2]	410[2]	104	22.5	4.1
	8-96	Historical Range	264 – 356	37.2 – 332	17.6 – 171	87 – 123	31 – 43.4	1.73 – 3.1
		2013 Average	295	96.5	63	92	32.5	2.45
	14a-01	Historical Range	215 – 263	4.8 – 28	9.1 – 27.4	63.5 – 86	22.4 – 29	1 – 2
		2013 Average	245	22	25.5	75	26	1.25
	16a-08	2008-2012 Range	232 – 251	28 – 39	2.1 – 42	76 – 88	26 – 30	1.8 – 3.6
		2012 Average	235	31.5	2.25	81	27	1.75
	18a-08	2008-2012 Range	233 – 258	16 – 57	4 – 89	65 – 100	27 – 34	1.1 – 3
		2013 Average	240	16	4.25	84	28	1.15
	19a-08	2008-2012 Range	234 – 246	27 – 70	12 – 47	94 – 110	33 – 37	1.2 – 1.5
		2013 Average	240	72.5	29.5	110	34.5	1.5
	20a-08	2008-2012 Range	236 – 262	16 – 37	4 – 56	72 – 88	26 – 31	1 – 1.8
		2013 Average	245	16	4.8	82	27	1.05
	23a-12	2012 Range	230 - 250	24 – 30	11 - 15	85 - 97	28 - 34	0.95 – 1.3
		2013 Average	235	27.5	13	96	33	1.25

	Monitor		Alkalinity (ppm)	Chloride (ppm)	Sodium (ppm)	Calcium (ppm)	Magnesium (ppm)	Potassium (ppm)
Downgradient	6a-96	Historical Range	206 – 420	140 – 345	70 – 176	89 – 158	23 – 42	2 – 16.4
		2013 Average	285	155(2)	105(2)	94.5	25	2.85
	10-00	Historical Range	236 – 267	17 – 44.9	7.7 – 14	79 - 95.1	27 – 32	1 – 2
		2013 Average	245	31	11.5	93.5	30	1.15
	11a-00	Historical Range	225 – 263	4 – 24	4.3 - 25.9	62 - 83.2	23 – 28	1 – 3
		2013 Average	230	22.5	5.7	72.5	26	1.8
	13a-01	Historical Range	241 – 272	83.9 – 111	38 – 49	90 – 112	31 – 38.8	2 – 2.9
		2013 Average	250	96	43	97	33.5	2.4
	15a-01	Historical Range	243 – 271	42 – 63	7.7 – 24	88 – 129	29 – 39	1 – 2
		2013 Average	255	65	20.5	95	30.5	1.15
	17a-08	2008-2012 Range	225 – 248	27 – 39	10 – 67	64 – 85	26 – 32	1.4 – 2.2
		2013 Average	235	43	13.5	82.5	31.5	1.7
	21-08	2008-2012 Range	260 – 290	4 – 54	7.5 – 34	73 – 87	24 – 32	0.86 – 1.2
		2013 Average	275	5	8.5	75.5	25	0.95
	22a-11	2011-2012 Range	212 - 260	49 - 130	16 – 78	94 - 110	20 - 35	1.4 - 1.6
		2013 Average	235	52	16.5	90.5	32	1.8

Note: 1. Historical Ranges only include data from 1997 up to 2003 due to continued increasing chloride and sodium values after 2003.
2. Road salt impact.
Historical Ranges include all data up to and including 2012, except where specified.

Generally, the average 2013 concentrations fall within the historical ranges at the background locations, with the following exceptions.

The 2013 average concentrations of sodium and chloride at monitor 5-96 continue to show significant road salt impacts. The sodium and chloride concentrations at 5-96 have shown a significant increase in recent years from less than 140 mg/L and 300 mg/L pre-2003, respectively to about 410 mg/L and 845 mg/L in 2013. The effects are found to be seasonal with the dry weather (June) sampling period usually showing higher sodium and chloride concentrations as compared to the wet weather sampling periods. As well, there have been historical road salt effects observed at location 6a-96 and 8-96. Sodium and chloride at monitor 5-96 are above the ODWS. Sodium and chloride are elevated (but within ODWS) at monitor 6a-96. The elevated sodium and chloride concentrations at monitors 5-96 and 6a-96 are due to road salt impacts.

The 2013 chloride concentrations at 17a-08 were both slightly higher than the maximum historic concentration. The former maximum historic chloride concentration was 39 mg/L compared to 2013 concentrations of 41 mg/L and 45 mg/L. Examination of the calcium and chloride concentrations over time at 17a-08 shows a subtle increasing trend. An anomalous hit of iron was noted in June, returning to normal levels in December. In December, magnesium and calcium were also higher than historic maximum concentrations at 17a-08, which is related to the slight increasing trend in chloride. An anomalous hit of total phosphorus in June was noted at 18a-01, returning to more normal levels in December. The June 2013 potassium concentration at 16a-08 and the June and December calcium concentrations at 22a-11 were slightly lower than the historic minimums at these locations. The December chloride concentration at monitor 19a-08 of 72 mg/L was slightly higher than the historic maximum chloride concentration of 70 mg/L.

Unusually high iron concentrations in the December 2011 samples were noted at monitors 2b-91, 5-96, 6b-96, 11b-00, 12a-00, 13b-01, 14b-01, 15b-01, 16a-08, 16b-08, 17a-08, 17b-08, 18a-08, 19a-08 and 21a-08. These elevated iron results occurred across the site in both upgradient and downgradient and overburden and bedrock monitors. Elevated iron concentrations continued in 2012 except at 5-96 and 12a-00 which showed 2012 iron concentrations similar to historic. Iron concentrations in the remaining monitors decreased to below the laboratory detection limits by December 2013 except for 16a-08, 17a-08, 18a-08 and 19a-08. The iron concentrations at these four monitors remain slightly elevated though at lower concentrations than December 2011. Iron concentrations were above the ODWS in June 2013 at 2b-91, 11b-00, 13b-01, 14b-01, 15b-01, 17a-08, 17b-08, 18a-08, 19a-08 and 21a-08 and in June and December at 16a-08. City sampling staff were asked if there have been any changes to sampling protocols, equipment or site conditions in 2011. No changes occurred so it is unknown as to the cause of the increase in iron concentrations. As these elevated concentrations are apparent in the background monitors, it is concluded that they are not a result of site operations.

When the water quality from the monitors located along the eastern boundary of the WRIC (10-00, 11a-00) and in the Transfer Station property (13a-01, 14a-01, 15a-01, 16a-08, 17a-08) are compared to the historical monitors to the west, there is a difference in bedrock water quality observed. With the exception of alkalinity, the concentrations of the major ions are generally lower indicating a less mineralized water. This difference in water quality is attributed to the bedrock units they are completed in. As stated earlier, there is a bedrock high to the west of the site. This high is dominated by the dolostone units of the Guelph Formation. The bedrock topography dips steeply from this high, across the WRIC site, towards a deeply incised bedrock valley low. This valley cuts into the underlying Gasport Formation (formerly the Amabel). Monitors are installed in this formation or at the contact of this formation at the eastern boundary of the WRIC facility. Overall, water quality from this lower formation is found to be less mineralized, which is confirmed by sampling of these monitors.

Monitor 22a-11 is located downgradient in the bedrock low and constructed as a piezometer in the bedrock (total depth of 24.4 m below ground surface, 293 mASL). The five samples collected at the site shows parameter concentrations within the range of other downgradient bedrock monitors. Chloride and sodium concentrations are slightly elevated suggesting possible road salt impacts, as observed further up-gradient.

Monitor 23a-12 is located upgradient of the site and is representative of background conditions. The five samples collected from the site show parameter concentrations are at the high end of the range of other background groundwater monitors.

8.4 Downgradient Groundwater Quality

8.4.1 Shallow Outwash Groundwater Quality

Monitors along the eastern property boundary of the WRIC and within the paleo-valley in this same area are downgradient of operations at the Transfer Station and the WRIC based on shallow groundwater flows (Figure 3). The table below compares downgradient water quality at monitors 2b-01, 6b-96, 7-96, 11b-00, 13b-01, 15b-01, 17b-08 and 22b-11 to the Ontario Drinking Water Standards (ODWS), leachate quality (from the Closed Eastview Road Landfill) and background outwash water quality from monitors BH14b-01, 16b-08, 18b-08, 19b-08 and 20b-08.

	Monitor		Critical Leachate Indicators				Other Leachate Indicators			
			Boron (mg/L)	***Phenols (μg/L)***	***Alkalinity (mg/L)***	***Chloride (mg/L)***	***Sodium (mg/L)***	***Calcium (mg/L)***	***Magnesium (mg/L)***	***Potassium (mg/L)***
Leachate		ODWS	5.0		30 – 500	250	200			
		Historical Range (1997-2009)	6.22 – 47	0.72 – 830	2,900 – 9,050	101 – 2,660	424 – 2,300	33 – 221	144 – 661	149 – 1,410
		Average (1997-2009)	22.8	100	6,195	1,841	1,468	96	468	794
Downgradient	**2b-91**	Historical Range	< 0.005 – 0.028	< 0.72 – 6	166 – 362	3 – 17	1.8 – 5.2	52.2 – 90	21.8 – 39	0.69 – 1
		2013 Average	0.019	< 1	250	2	2.4	71	23	0.795
	6b-96	Historical Range	0.02 – 0.078	< 0.72 – 11	246 – 412	90.3 – 815	53.1 – 467	85.9 – 217	20.5 – 47	5.36 – 18
		2013 Average	0.033	< 1	320	275	200	110	24.5	8.05
	9-96	Historical Range	0.01 – 0.063	< 0.72 – 4	85 – 348	5 – 83.7	1.48 – 34	29 – 100	6.9 – 34	0.3 – 3.9
		2013 Average	0.0195	< 1	135	17	21	42.5	12	5.45
	7-96	Historical Range	0.03 – 0.102	< 0.72 – 12	224 – 378	54.3 – 397	28.7 – 212	95.1 – 226	28 – 52.7	8.5 – 27
		2013 Average	0.042	< 1	310	120	76.5	100	26.5	9.75
	11b-00	Historical Range	0.04 – 1.9	< 1 – 7	185 – 279	54 – 192	26.8 – 150	44 – 103	12 – 28.4	1 – 2.2
		2013 Average	0.21	< 1	290	180	140	89	22.5	1.7

	Monitor		Critical Leachate Indicators				Other Leachate Indicators			
			Boron (mg/L)	***Phenols (μg/L)***	***Alkalinity (mg/L)***	***Chloride (mg/L)***	***Sodium (mg/L)***	***Calcium (mg/L)***	***Magnesium (mg/L)***	***Potassium (mg/L)***
Downgradient *continued*	**13b-01**	Historical Range	0.01 – 0.1	< 1 – 12	287 – 506	7 – 200	4.8 – 88	84.7 – 160	28 – 45	1 – 2.5
		2013 Average	0.0285	< 1	430	86	43.5	140	28.5	1.9
	15b-01	Historical Range	< 0.01 – 0.08	< 1 – 10	200 – 544	4 – 270	2 – 130	73.4 – 210	18.7 – 53	0.92 – 2
		2013 Average	0.021	< 1	375	54	33	140	29	0.995
	17b-08	2008-2012 Range	0.015 – 0.026	< 1	304 – 357	230 – 620	160 – 330	110 – 190	28 – 48	2.1 – 3.1
		2013 Average	0.02	< 1	330	310	210	110	28.5	1.95
	22b-11	Range 2011-2012	0.014 – 0.024	< 1	230 - 340	46 - 59	13 - 48	96 - 110	22 - 32	1.3 - 1.6
		2012 Average	0.0265	< 1	270	124	88	92	20.5	1.65
Background	**14b-01**	Historical Range	< 0.01 – 0.05	< 1 – 13	267 – 440	22.3 – 280	0.1 – 170	0.2 – 140	0.05 – 38	0.2 – 2.6
		2013 Average	0.0235	< 1	405	166	99	160	38.5	2.25
	16b-08	2008-2012 Range	< 0.01 – 0.034	< 1 - < 5	318 – 597	10 – 260	23 – 150	89 – 170	27 – 51	1.1 – 3.1
		2013 Average	0.026	< 1	470	84	76.5	128.5	38.5	1.8
	18b-08	March 2008	0.07	< 1	284	8	270	29	12	2.1
		June 2011	0.10	<1	424	19	190	60	18	5.5
	19b-08	2008-2012 Range	0.1 – 0.27	< 1	289 – 666	7 – 60	160 – 480	23 – 85	10 – 25	4.5 – 8.6
		December 2013	0.14	< 1	650	16	220	45	14	10
	20b-08	2008-2012 Range	< 0.01 – 0.018	< 1 – 8.9	235 – 296	7 – 170	3.5 – 58	78 – 110	25 – 32	1.1 – 3.3
		2013 Average	< 0.0115	< 1	270	79.5	36.5	95.5	28	1.45

Note: Historical Ranges includes all data up to and including 2012, except where specified.
ODWS = Ontario Drinking Water Standards.

Alkalinity concentrations at 2b-91 have increased compared to the pre-2003 average of 183 mg/L. The average 2013 alkalinity concentration was 250 mg/L and has remained at a similar concentration since about 2009. Sulphate concentrations have been decreasing over time from about 30 mg/L in the mid-1990s to its current 2013 concentration of 6 mg/L. Recent chloride concentrations since 2008 have been about 2 mg/L compared to pre-2008 concentrations of about 10 mg/L. No other trends in indicator parameter concentrations were noted at 2b-91. Of note are the low nitrate concentrations since 2008 of less than 1.5 mg/L. Historically, nitrate concentrations frequently exceeded the ODWS at 2b-91.

Outwash at monitors 6b-96 (northeast corner) and 7-96 (central) as well as at the historical monitor 3-97 (southwest corner), which was destroyed during the construction of the SUBBOR pilot facility and replaced with monitor 12b-00, are upgradient of the WRIC and Transfer Station. These locations are along the flow path that trends from the southwest to the northeast and receives groundwater inputs from the bedrock high to the west. This water quality is typified by concentrations of the major ions that are elevated above the background outwash but for the most part lower than the bedrock concentrations. This is anticipated as the more ionized water from the bedrock to the west would mix with the less ionized waters in the overburden.

Monitor 6b-96 usually shows lower concentrations of chloride and sodium than observed in the background bedrock at monitor 5-96. These sodium and chloride concentrations tend to show a seasonal trend, usually highest in the early spring, suggesting they are attributed to road salting of the surrounding area. Monitor 5-96 has been showing increasing chloride concentrations over time from about 200 mg/L up to 2002 to around 800 mg/L in the late-2000s, likely in response to long-term road salting in the area. Monitor 12b-00 shows lower sodium and chloride concentrations compared to 6b-96 and 7-96, likely due to the absence of road salt sources upgradient of this location.

As shown on the above table, indicator parameter concentrations observed in the background and downgradient outwash monitors on the Transfer Station/WRIC property are considerably lower than typical leachate concentrations from the closed Eastview Road Landfill. Chloride and sodium at 17b-08 (June and December 2013) exceeded ODWS. These exceedances are due to road salt impacts. Monitor 17b-08 is in the shallow outwash, downgradient of Transfer Station. The sodium and chloride concentrations at 17b-08 are within the more recent range of concentrations of the background WRIC bedrock monitors 5-96 and 6a-96, which have been impacted by road salt. Elevated sodium and chloride at 17b-08 suggests road salt impacts by lateral dispersion at this location. Other leachate indicator parameter concentrations are within background outwash ranges for the Transfer Station indicating no impacts.

Though nitrate concentrations at monitor 7-96 historically have regularly exceeded the ODWS, they were within ODWS in 2013 with concentrations of 6.8 mg/L and 5.3 mg/L. Elevated nitrate has occurred historically, including prior to the start-up of the WRIC facility and is most likely a result of past agricultural land use. There were no other exceedances of ODWS for the shallow groundwater monitors in 2013 for the parameters tested, except for iron (previously discussed).

At 13b-01, both sodium and chloride have shown increasing trends since 2004, peaking in 2008 and slowly declining since then. These elevated concentrations are likely due to road salt impacts as this monitor is located adjacent to the access road to the Transfer Station and Dunlop Road. The 2013 sodium and chloride concentrations are slightly higher than the 2012 concentrations. Since indicator parameter concentrations at monitor 13b-01 remain within background concentrations, it has been concluded that there are no leachate impacts.

At monitor 15b-01, sodium and chloride showed a noticeable increasing trend from about 2007 to 2010 peaking at an average of 108 mg/L and 195 mg/L, respectively from about an average concentrations of 11 mg/L and 29 mg/L, in 2007. Sodium and chloride began to decrease in 2011 from these highs to a current average concentration of 33 mg/L and 54 mg/L In 2013, as well, this monitor also showed a subtle increasing trend in alkalinity, peaking in 2008 at about 496 mg/L and gradually decreasing to an average concentration of 375 mg/L in 2013. These increases are likely related to the construction of the paved pad immediately south (discussed below). This monitor had previously been considered an upgradient background location due to its location east of the WRIC and south of the Transfer Station. However, in the mid-2000s, a large paved pad was constructed southeast of this monitor location. The pad is sloped such that surface water runoff is captured by a catch basin located near the middle of the pad and directed to the storm sewer. This pad was originally intended for storage of leaf compost but was being used to store construction and demolition material (roofing shingles, clean wood, drywall, rubble). The change in water quality at this location may be due to a combination of road runoff impacts from the Transfer Station access road to the northwest, a reduction of infiltration (and therefore, dilution) with the installation of the paved pad as well as the road salt from the south, as observed in the background monitors.

Monitor 22b-11, completed in November 2011, is representative of downgradient overburden conditions based on its location along the western site boundary. The 22b-11 water quality is similar to 20b-08. Elevated average sodium and chloride at concentrations of 88 mg/L and 124 mg/L, respectively, reflect road salt impacts due to its location immediately adjacent to Dunlop Drive.

We conclude from this assessment, there have been no leachate impacts to the shallow groundwater in the vicinity of the WRIC and Transfer Station as a result of site operations in 2013.

8.4.2 Downgradient Bedrock Groundwater Quality

The interpreted bedrock groundwater flow directions (Figure 2) indicate that monitors 6a-96, 10-00, 11a-01, 13a-01, 15a-01, 17a-08 and 22a-11 are downgradient of the active Transfer Station and WRIC area, within or on the edge of the paleo-valley trending through the site.

The bedrock groundwater quality was compared to Ontario Drinking Water Standards (ODWS), as applicable. Sodium and chloride exceed ODWS at background bedrock monitor 5-96 due to road salt impacts. There are no other exceedances of ODWS in 2013 for the bedrock groundwater monitors for the parameters tested (except for iron, previously discussed).

As the shallow outwash water quality is not impacted by site operations, no impacts to the deeper bedrock groundwater would be expected nor observed.

8.5 Groundwater Organics Results

Groundwater monitors were analyzed for organics during both the June (dry) and December (wet) monitoring events at monitoring locations 2, 6, 11, 12, 13, 14, 15, 16, 17, 20, 22 and 23 and monitors 5-96, 7-96, 8-96, 9-96, 10-00, 18a-08, 19a-08 and 21a-08.

Monitors 12a-00 and 23b-12 had detections of bis(2-ethylhexyl) Phthalate (DEHP) during the December 2013 monitoring event at concentrations of 4 μg/L and 15 μg/L, respectively. Previously, DEHP detections had been observed at monitor 12a-00 in June 2007 at a concentration of 6 μg/L and at 12b-12 in July 2012 at a concentration of 5 μg/L. It has historically been detected at both upgradient and downgradient monitors in since 1997. Historic DEHP detections ranged from 0.73 μg/L to 120 μg/L. DEHP is prevalent in the environment due to their use in plastics. There is no ODWS for DEHP. Since DEHP has sporadically been detected at monitors across the site, we have concluded that it is not related to site operations.

Naphthalene was detected at 6a-96 (0.3 μg/L), 20b-08 (0.4 μg/L) and 23a-12 (0.9 μg/L) in 2013. It was previously detected at 15a-01 (1.8 μg/L) and 15b-01 (13 μg/L) in December 2012 and at CL-1 (leachate) at a concentration of 0.7 μg/L in June 2000 and in June 1998 (0.2 μg/L). There is no ODWS for naphthalene.

Bromodichloromethane was detected at monitors 2a-91 (0.16 μg/L), 6a-96 (0.19 μg/L), 11b-00 (0.22 μg/L and 0.14 μg/L) in 2013. Monitors 6a-96 and 11b-00 had detections of bromodichloromethane (0.17 μg/L to 0.3 μg/L) in 2012 during both monitoring events. A low concentration (0.12 μg/L) of bromodichloromethane was observed historically at 6a-96 in December 2011. Bromodichloromethane was previously detected at monitor 11b-00 in 2010 at a concentration of 1.4 μg/L and during both 2011 monitoring events at concentrations of 0.39 μg/L and 0.5 μg/L but had not previously been detected at this location. It had previously been detected in 2010 at 17b-08 (2.9 μg/L) and in 2002 at CL-1 in the leachate (0.4 μg/L). Bromodichloromethane can be found in chlorinated drinking water as a disinfection by-product. In the past, they were used as a solvent, a flame retardant and in the manufacture of other chemicals. There is no ODWS for this parameter and it also considered not related to site operations.

Low concentrations of chloroform were detected at 2a-91 (0.44 μg/L), 6a-96 (0.48 μg/L), 11b-00 (0.19 μg/L and 0.42 μg/L), 17b-08 (0.59 μg/L and 0.62 μg/L), 22b-11 (0.1 μg/L and 0.13 μg/L) and 23b-12 (0.14 μg/L and 0.12 μg/L) in 2013. Monitors 6a-96, 11b-00 and 17b-08 also showed low levels of chloroform in 2010, 2011 and 2012. Chloroform was also detected at a concentration of 0.11 μg/L at 22a-11 in June 2012. A low concentration of chloroform (0.2 μg/L) was detected at monitor 6a-96 in 2009. The laboratory detection limit for chloroform is 0.1 μg/L. Low chloroform (0.3 μg/L) was also detected during 2008 and both 2007 sampling events at this same monitor. Chloroform has historically been detected at low levels at monitors 6a-96, 6b-96 and 11b-00, in the overburden and bedrock with no elevated indicator parameter concentrations indicating that these occasional detections are not a result of activities on the site. There is no ODWS for chloroform.

Monitor 9-96 was not sampled in 2010 and 2011 due to inaccessibility due to construction activities in the area. Monitor 9-96 did not show any detection of 1,1,1-Trichloroethane in 2012 and 2013. Persistent low levels of 1,1,1-Trichloroethane had previously been detected at this location. Historically 1,1,1-Trichloroethane has not been detected in any of the monitors on the Transfer Station or the WRIC site indicating that it was localized and was not moving beyond the monitor area. Concentrations will continue to be monitored in the future to determine that it no longer is present.

2-Chlorophenol at a concentration of 0.4 μg/L was detected at 14b-01 in June 2013, just above the detection limit of 0.3 μg/L. 2-Chlorophenol has historically not been detected on the site. Sources of 2-Chlorophenol are disinfectants and pesticides. It has no ODWS. Since it has only been detected on this one occasion and at just above the detection limit, it is uncertain if this was a real detection.

N-nitrosodiphenylamine at a concentration of 5 μg/L was detected at 13b-01 in December 2013. N-nitrosodiphenylamine has historically not been detected on the site. This parameter was formerly used as a rubber additive. It has no ODWS.

Several organics were detected in December 2013 at 20b-08 including benzyl butyl phthalate (0.5 μg/L), naphthalene, m-,p-cresol (7.6 μg/L), indole (5 μg/L), phenol (30 μg/L) and o-cresol (7.6 μg/L). None of these parameters have ODWS. Based on the groundwater flow (Figure 3), this location is upgradient of site and therefore these organic detections are not a result of site activities.

Monitor 23b-12 was completed to better understand groundwater flow in the area and to assess potential water quality at the boundary along Stone Road. A sample was taken after the monitors were completed on July 5, 2012. Several VOC compounds were detected including BTEX (Benzene, Toluene, Ethylbenzene and Xylenes), 2-Methylnaphthalene, Tetrachloroethylene, Bis(2-ethylhexyl)phthalate, Chloroform and Dibromochloromethane. Several of these compounds have historically been detected in the background locations. Of note for this sample was the presence of 2-Methylnaphthalene, which is known to come from automobile exhaust. Where applicable, all concentrations were still well below the ODWS. To confirm these results, a sample was completed on July 19, 2012. This sample had significantly less detections which only included Benzene, Toluene, Xylenes and Tetrachloroethylene. All of the concentrations were at or just above the detection limit and, in most cases, were lower than those observed at the background monitor 14b-01 in June 2012. No VOC's were detected from the sample completed in December 2012, as part of the routine monitoring, with the exception of a trace concentration of Chloroform. As stated earlier, Chloroform is not considered to be related to site operations as it is routinely observed across the site including background wells. It is most likely that the July 2012 detections are related to very hot summer conditions and the close proximity of this monitor to Stone Road. During 2013, acenaphthylene (0.3 μg/L), phenanthrene (0.4 μg/L), napththalene, chloroform and bis(2-ethylhexyl)phthalate were detected at this monitor. As these compounds are observed at other monitors on site, including other background locations, organic detections are not a considered a results of site activities.

No other organics were detected at any of the monitors that are part of the WRIC and Transfer Station monitoring program in 2013.

Historically, there have been occasional low level detections of organics at both upgradient and downgradient monitors. Because the detection limits for organic compounds are very low, it is not unusual to have sporadic low level organic detections at sites where organic samples are frequently collected. The presence of persistent organics at one location combined with elevated indicator parameter concentrations and/or increasing trend in parameter concentrations would trigger more intense scrutiny of water quality results. This has not been the case for the organic detections at this site.

Trip blank and a field blanks were collected with each organic monitoring event for QA/QC purposes. No organics were detected in any of the QA/QC samples collected in 2013.

8.6 General Groundwater Quality Discussion

Overall, the groundwater chemistry during 2013 was similar to previous years.

In 2007, nitrate and nitrite analysis was re-instated into the routine monitoring program for both the sites as per the MOE's recommendations. Historically, nitrates were included in the monitoring program but were removed since elevated nitrate concentrations were prevalent across the site at all locations prior to development of the site. This was once again confirmed in 2013. There were no exceedances of the nitrate ODWS in 2013. Shallow background monitors 1b-91, 6b-96 and 7-96 historically have shown elevated nitrate concentrations in the early 1990s (up to 32 mg/L at 1b-91) and late 1990s (up to 53.5 mg/L at 7-96) indicating that the elevated nitrates were present prior to the commencement of facility operations.

Monitors 5-96, 6b-96, 17b-08 and 19b-08 exceeded ODWS for sodium and/or chloride in 2013 as a result of road salt effects. Exceedances of the iron ODWS occurred at many of the monitoring locations during December 2011 and persisted throughout 2012, though at lower concentrations with many of the monitors with iron concentrations below the laboratory detection limits by December 2013 suggesting that the iron effects that occurred during late 2011 are now returning to background levels. These elevated iron concentrations will continue to be investigated further in future monitoring events. There were no other exceedances of the Ontario Drinking Water Standards in 2013.

As observed in the past, sporadic low level detections of organics were observed in both upgradient and downgradient monitors across the site in 2013. Because the detection limits for organic compounds are very low, it is not unusual to have sporadic low level organic detections at sites where organic samples are frequently collected. These occasional detections do not appear to be related to site operations. The presence of persistent organics at one location combined with elevated indicator parameter concentrations and/or an increasing trend in parameter concentrations would trigger more intense scrutiny of water quality results. In previous monitoring reports, we had recommended discontinuation of the organic sampling from the groundwater monitoring program for all historical locations. In the MOE review of the 2009 Annual Monitoring report (Groundwater Review), the reviewer did not support the discontinuation of the organic groundwater sampling program since an impact assessment with respect to the requirements of Guideline B-7 had not yet been completed. Further additional monitoring is required to better assess the new location with respect to the VOC detections observed in July 2012. As recommended, organic sampling events now include a trip blank and a field blank collected with each organic monitoring event for QA/QC purposes. No organics were detected in any of the QA/QC samples collected in 2013.

In conclusion, there were no observable effects attributed to the WRIC and the Transfer Station on the groundwater quality beneath the site. No effects were observed at the site boundaries. Road salt effects continue to be observed at location 5-96, 8-96 (upgradient of site), 7-96 and 9-96 (on-site) and are related to off-site as well as potential on-site activities.

8.7 Guideline B-7 Assessment

MOE Guideline B-7 (formerly Policy 15-08 referred to as the Reasonable Use Policy) applies the reasonable use approach to groundwater quality management at waste management sites. Guideline B-7 describes acceptable levels of contaminants in the groundwater at site boundaries, based on the Ontario Drinking Water Standards (ODWS) and natural background conditions. In addition, it is used to determine whether any remedial action is warranted. The Guideline B7 limits were calculated using the formula outlined in the MOE's Procedure B-7-1 (MOEE 1994a and 1994b).

The basic methodology to assess groundwater quality in relation to Guideline B7 limits (reasonable use guidelines), is to compare the shallow and bedrock downgradient groundwater quality to the calculated maximum concentrations. The leachate indicator parameters used in the assessment are either health related or aesthetic parameters specified in the ODWS. Based on the MOE reasonable use approach from Guideline B-7, the maximum concentrations (**Cm**) allowed at the site boundaries are calculated from the drinking water quality criteria (**Cr)** and background concentrations (**Cb**) based on the formula provided in Procedure B-7-1. Guideline B7 allows for some incremental impact to occur on the neighbouring property, relative to background. Input for a given chemical parameter includes the background concentration, the Ontario Drinking Water Standards (MOE, 2000), and a safety factor that was established by the MOE based on human health and aesthetic considerations.

As part of the MOE review on the 2009 Annual Monitoring report, it was recommended that Guideline B-7 be applied to this site as the geological model and groundwater flow have been confirmed, which is generally north-easterly. Monitor 22a-11 (bedrock) and 22b-11 (overburden) were installed at the downgradient northwestern property boundary adjacent to Dunlop Drive to be utilized for an impact assessment with respect to the requirements of Guideline B-7[16]. As recommended by the MOE reviewer[17], the number of monitors considered for calculation of the median background concentrations was expanded to include the more recent monitors. The median historic concentrations from background overburden monitors 12b-00, 14b-01, 16b-08, 18b-08, 19b-08, 20b-08 and 23b-12 and from background bedrock monitors 5-96, 8-86, 14a-01, 16a-08, 18a-08, 19a-08, 20a-08 and 23a- 12 were used to calculate the maximum concentration levels presented in Tables 8 and 9, respectively.

$$C_m = C_b + F \times (C_{ODWS} - C_b)$$

where, C_m is the maximum concentration,

C_b is the median background concentration,

C_{ODWS} is the maximum concentration (dependant on water use),

F is a constant – 0.5 mg/L for aesthetic parameters, 0.25 mg/L for health related parameters.

Table 8. Guideline B-7 Calculated Maximum Parameter Concentrations - Overburden

Parameter	C_b	F	C_{ODWS}	C_m
Nitrate (mg/L)	0.9	0.25	10	3.18
Boron (mg/L)	0.03	0.25	5	1.27
Sodium (mg/L)	42.5	0.5	200	121
Chloride (mg/L)	57.2	0.5	250	154
Sulphate (mg/L)	43	0.5	500	272
Iron (mg/L)	0.115	0.5	0.3	0.21

Note that monitors 5-96, 8-86 and 19b-08 show elevated sodium and chloride concentrations due to road salt impacts, however, these conditions are representative of this area.

Table 9. Guideline B-7 Calculated Maximum Parameter Concentrations – Bedrock

Parameter	C_b	F	C_{ODWS}	C_m
Nitrate (mg/L)	0.31	0.25	10	2.73
Boron (mg/L)	0.02	0.25	5	1.27
Sodium (mg/L)	29.6	0.5	200	115
Chloride (mg/L)	55.4	0.5	250	153
Sulphate (mg/L)	50	0.5	500	275
Iron (mg/L)	0.02	0.5	0.3	0.16

16. *Memorandum from Lynnette Latulippe (MOE) to Bill Shields (City of Guelph), Re: Annual Monitoring Report – 2009 Guelph Wet-Dry Recycling Centre and Waste Transfer Station Groundwater Review, dated February 7, 2011.*
17. *Memorandum from Abdul Quyum (MOE) to Kevin Noll (MOE), Re: Annual Monitoring Report – 2012 Guelph Wet-Dry Recycling Centre and Waste Transfer Station, Guelph, Ontario, dated April 25, 2013.*

Maximum allowable concentrations (C_m) are compared to the 2013 groundwater quality results from 22-11 in Table 10.

Table 10. Summary of 2013 MOE Guideline B-7 (Reasonable Use) Calculations at the Northwest Boundary

Parameters in mg/L		Overburden			Bedrock		
		Cm	Monitor 22b-11		Cm	Monitor 22a-11	
			Jun 2013	Dec 2013		June 2012	Dec 2012
Health Related Parameters	Nitrate	3.18	***3.9***	3.0	2.73	< 0.1	0.12
	Boron	1.27	0.028	0.025	1.27	0.02	0.025
Aesthetic Parameters	Sodium	121	93	83	115	16	17
	Chloride	154	150	98	153	49	55
	Sulphate	272	28	23	275	88	85
	Iron	0.21	***0.23***	< 0.02	0.16	***1.2***	***1.2***

Bold, italicized concentrations in Table 10 exceed Guideline B-7 limits. June nitrate and iron at 22b-11 in the overburden and June and December iron at 22a-11 in the bedrock exceed the Guideline B-7 limits. Historically, elevated nitrate concentrations were prevalent across the site at all locations prior to development of the site. Shallow background monitors 1b-91 and 6b-96 historically have also shown elevated nitrate concentrations in the early 1990s (up to 32 mg/L at 1b-91, prior to the facility operations) and late 1990s (up to 44 mg/L at 6b-96) indicating that the elevated nitrates were present prior to the commencement of facility operations. As previously discussed, iron concentrations at some of the monitor locations were unusually high during the December 2011 monitoring event. These elevated concentrations decreased at 22a-11 during 2012 but have increased again in 2013. The elevated iron concentrations occurred in both upgradient and downgradient monitors and therefore, do not appear to be related to site operations. Only five samples have been collected from 22-11 since they were drilled in 2011 therefore, continued sampling of these locations will build a larger dataset for comparison purposes.

Strictly speaking, Guideline B-7 is in place to assess groundwater impacts leaving the site for protection of downgradient users. There are no downgradient well users as the surrounding area is municipally serviced.

8.8 Surface Water Monitoring

8.8.1 Transfer Station

In 2013, monthly inorganic surface water sampling of the stormwater management pond (SWM) for the parameters shown on Table 3 occurred when water was present. The SWM pond was routinely checked during 2013. When water was present, samples were collected at the culvert on the west side of the pond (TP1 on Figure 1) and at the discharge at the north end of the pond (TP1 (out) on Figure 1) on a monthly basis. The water in the SWM pond at TP1 and TP1 (out) was sampled in January, April, May, June and August to December in 2013. TP1(out) was sampled in July 2013, as well.

The existing on-site surface water pond ("East Pond" on Figure 1) is also included in the monitoring program. Water quality from the East Pond is considered representative of background surface water quality as it does not receive any inputs from the facilities. It was recommended in the 2011 annual monitoring report that the monitoring frequency of the East Pond be increased to monthly to coincide with those occasions when samples are collected from the on-site SWM ponds. If no samples are collected from the any of the SWM pond locations, no sample from the East Pond for that month is required. East Pond surface water samples (designated EPTS-01) were collected in January and April to December. The 2013 surface water results for the leachate indicator parameters are tabulated below, and the testing results are presented in Appendix C.

Surface water results were compared to Provincial Water Quality Objectives (PWQO), background surface water quality (EPTS-01) and background overburden water quality. At EPTS-01, the PWQO for zinc was exceeded during all 11 monitoring events in 2013. Zinc has consistently exceeded PWQO in the past at this location. Phenols, total phosphorus and iron have exceeded PWQO in the past but were within PWQO in 2013. All the leachate indicator parameter concentrations were within background overburden ranges.

Location	Date	Critical Leachate Indicators			Other Leachate Indicators				
		Boron (ppm)	*Phenols (ppm)*	*Chloride (ppm)*	*Alkalinity (ppm)*	*Sodium (ppm)*	*Calcium (ppm)*	*Magnesium (ppm)*	*Potassium (ppm)*
PWQO/		0.2	0.001	-	-	-	-	-	-
Background Overburden(1)		0.005 – 0.063	< 0.001 – 0.013	3 – 280	85 – 438	0.1 – 170	0.2 – 140	0.05 – 39	0.2 – 3.9
Background Overburden(2)		<0.01 – 0.27	< 0.001	7 – 620	235 – 666	3.5 – 480	23 – 190	10 – 51	1.1 – 11
TP1	30-Jan-13	0.011	< 0.001	270	49	220	18	2.7	1.7
	18-April-13	0.021	0.0023	330	190	240	79	14	2.7
	28-May-13	0.038	< 0.001	82	110	74	44	6.1	1.5
	27-June-13	0.065	< 0.001	65	190	54	70	9	1.5
	7-Aug-13	0.02	< 0.001	3	29	2.8	13	1.5	1.6
	24-Sept-13	0.028	< 0.001	100	270	64	89	17	4.8
	31-Oct-13	0.022	< 0.001	12	71	12	25	2.4	2.3
	19-Nov-13	0.021	< 0.001	62	320	56	94	20	2.9
	5-Dec-13	< 0.01	0.0039	38	150	35	51	9	2.1
	Historic Range	< 0.01 – 0.10	<0.001 – 0.018	3 - 760	29 - 320	2.8 - 450	11 - 98	1.4 - 27	0.75 - 16
TP1 (out)	30-Jan-13	0.013	< 0.001	400	61	300	34	4.8	2.6
	18-April-13	0.024	0.0023	240	94	190	36	4.5	1.8
	28-May-13	0.019	< 0.001	180	150	150	57	6	3.9
	27-June-13	0.032	< 0.001	30	120	31	42	4	1.9
	25-July-13	0.037	< 0.001	14	82	12	33	3.4	3
	7-Aug-13	0.028	< 0.001	58	140	32	46	7.2	12
	24-Sept-13	0.024	< 0.001	43	180	35	54	8.8	3.1
	31-Oct-13	0.017	0.0023	10	52	8.8	17	2.2	2.4
	19-Nov-13	0.022	< 0.001	30	160	28	52	8.9	3.9
	5-Dec-13	0.012	0.0027	30	130	25	44	6.5	2.9
	Historic Range	< 0.01 – 0.11	< 0.001 – 0.007	5 - 1300	50 - 390	5 - 820	16 - 160	0.8 - 29	1.5 - 45
EPTS-01	30-Jan-13	0.012	< 0.001	44	220	32	76	20	1.4
	18-April-13	0.011	< 0.001	64	210	50	73	19	1.2
	28-May-13	< 0.01	< 0.001	35	220	26	79	22	1.4
	21-June-13	0.013	< 0.001	35	230	25	74	20	1.4
	27-June-13	0.016	< 0.001	39	240	27	78	22	1.4
	25-July-13	0.017	< 0.001	32	240	23	77	21	1.5
	7-Aug-13	0.017	< 0.001	30	220	20	75	20	1.5
	24-Sept-13	0.021	< 0.001	37	260	23	74	20	1.5
	31-Oct-13	0.015	< 0.001	32	260	19	79	20	1.4
	19-Nov-13	0.02	< 0.001	34	270	23	85	23	1.7
	5-Dec-13	0.012	< 0.001	36	270	21	80	22	1.5
	Historic Range	<0.01 – 0.19	<0.001 – 0.002	26 – 190	169 – 334	13 – 120	68 – 160	19 – 27	1 – 2

Note: (1) Range of background overburden water quality from 1997 to 2012 for monitors 2b-91, 9-96 and 14b-01.
(2) Range of background overburden water quality from 2008-2012 for monitors 12b-00, 16b-08, 18b-08, 19b-08, 20b-08 and 23b-12

For the SWM pond samples at TP1, the PWQO was exceeded for total phosphorus and iron for all 9 events, zinc exceeded PWQO for 8 events and phenols for two events of the 9 events. For the SWM pond samples at TP1(out), the PWQO was exceeded for total phosphorus for 9 of the ten 2013 events, iron for six of the ten events, phenol for three events and zinc for two events. The PWQO for total phosphorus, iron, phenols and zinc have routinely to occasionally been exceeded at these locations in the past. The elevated total phosphorus is a result of former agricultural land use and not a result of operations at the Transfer Station. Elevated zinc, total phosphorus and iron concentrations appear to be related to external factors since background surface water have also exceeded PWQO for these parameters. Metals are a common contaminant from roadway runoff. Elevated phosphorus is typical in rural and urbanized areas. The 2013 concentrations are within the range of historic background overburden quality. 2013 indicator parameter concentrations are within the range of background surface water concentrations, except for TP1 and TP1(out) for phenols (two and three occasion, respectively), chloride (two occasions each), sodium (two and three occasions, respectively) and potassium (five and eight occasions, respectively). Baseline water quality information collected prior to building the WRIC had historically shown elevated total phosphorus concentrations and occasional elevated phenols, sodium, magnesium and potassium concentrations. Therefore, the elevated parameter results are due to the effects of former land use and not a result of operations at the Transfer Station.

The results for the indicator parameters from TP1, TP1(out) and EPTS-01 for each monitoring event were compared to each other for direct quality comparison to background. During all 2013 sampling events, potassium concentrations at TP1 and TP1(out) were elevated compared to background surface water concentrations at EPTS-01. Boron was elevated at TP1 and TP1(out) in May, June, August, September, October and November but elevated only at TP1 in January and April and only at TP1(out) in July (no July sample was collected at TP1). Sodium was elevated at TP1 and TP1(out) in January, April, May, June, September, November and December but elevated only at TP1(out) in August. Chloride was elevated at TP1 and TP1(out) in January, April, May and September but elevated only at TP1 in June, November and December and at TP1(out) in August. Phenol was elevated at TP1 and TP1(out) in April and December but elevated only at TP1(out) in October. Alkalinity was elevated at TP1 and TP1(out) in September but elevated only at TP1 in November. Alkalinity was elevated at TP1 and TP1(out) in September but elevated only at TP1 in November. Calcium was elevated at TP1 only in April, September and November. Elevated parameter concentrations are not attributed to the Transfer Station as site handling and maintenance practices would deter potential surface water impacts

2013 parameter concentrations at TP1 and TP1(out) were within the range of historic concentrations. The SWM Pond shows elevated sodium and chloride concentrations suggesting road salt influences from the adjacent access road.

Organic samples were collected from the surface water locations in April and June 2013. The background station EPTS-1 showed chloroform detections in April and June 2013 at concentration of 0.14 μg/L and 0.9 μg/L. Chloroform was previously detected at this location in June 2004 (0.9 μg/L), April and June 2007 (0.3 μg/L and 0.6 μg/L), June 2008 (1.9 μg/L), June 2009 (0.8 μg/L), June 2010 (0.6 μg/L) and June 2011 (0.3 μg/L). There is no PWQO for chloroform. As these detections are at the background surface water station, they are not related to site operations. There were no organic detected at TP1 or TP1 (out) in 2013.

8.8.2 WRIC

Monitoring of surface water at the WRIC commenced in March 1996. As required in the C of A/ECA, this monitoring was to be on a monthly basis for a short parameter list and on a quarterly basis for the full leachate parameter list (updated in 1999), as outlined in Section 3. There are two surface water sampling stations at the site, designated as SW 1 located at the off-site discharge point in Stormwater Detention Area 2 and SW 2 located in the Stormwater Detention Area 1 (Figure 1). Surface water runoff from the site is directed to a series of on-site stormwater catch basins. Excess water from Stormwater Detention Area 1 flows to Stormwater Detention Area 2 where it would ultimately discharge via a pond outlet structure in the northwest portion of the pond to the York-Watson Stormwater Detention Area.

East Pond water quality will serve as background surface water for comparison purposes. There is no baseline surface water analysis (prior to site operations), so any impacts due to runoff from the WRIC would be difficult to determine at the discharge point SW 1, due to the potential for other sources of non-facility impacts. These sources include runoff from the surrounding agricultural lands and road systems.

During mid-1998, the surface water monitoring program was re-designed to better understand contributions from runoff directly related to the site and not stagnant pond conditions. Surface water sampling is still undertaken on a monthly basis. However, more detailed recordings on discharge and overall conditions (such as dry or stagnant water) are undertaken. As well, the monthly sampling is to be undertaken during runoff conditions (weather permitting), and if no event occurs, are to be sampled at the end of the month regardless.

Below is a discussion of the surface water monitoring at station SW 1 and SW 2 during 2013. Samples were collected from both Detention Pond 2 (SW 1) and from Detention Pond 1 (SW 2) on January 30, April 18, August 7 and October 31. No other surface water samples were collected due to frozen or dry conditions. The table below briefly outlines the surface water monitoring events for the past year at these surface water stations.

Month	Discharge Events	Conditions	Sampling Date
January	No Discharge	SW1 and SW2 – Snow covered	**January 30, 2013**
February	No Discharge	SW1 and SW2 – Dry	**No Sample**
March	No Discharge	SW1 and SW2 – Dry	**No Sample**
April	No Discharge	SW1 and SW2 – Standing Water	**April 18, 2013**
May	No Discharge	SW1 (Dry-no sample), SW2 – Muddy	**May 28, 2013**
June	No Discharge	SW1 (Dry-no sample), SW2 – Muddy	**June 27, 2013**
July	No Discharge	SW1 (Dry-no sample), SW2 – Muddy	**July 25, 2013**
August	No Discharge	SW1 and SW2 – Clear	**August 7, 2013**
September	No Discharge	SW1 (Dry-no sample), SW2 – Clear	**September 24, 2013**
October	No Discharge	SW1 – Cloudy, SW2 – Clear	**October 31, 2013**
November	No Discharge	SW1 (Dry-no sample), SW2 – Algae Present	**November 19, 2013**
December	No Discharge	SW1 and SW2 – Dry	**No Sample**

A comparison of the four samples collected at SW1 (Stormwater Detention Area 2) in 2013, to the site indicator parameters, showed elevated phenol (April, August, October), chloride (January, April, August), sodium (January) and potassium (all four events) compared to background surface water quality at the East Pond (EPTS-01). Conductivity, alkalinity, magnesium, sulphate and calcium concentrations are much lower at SW1 compared to the East Pond. 2013 SW1 parameter concentrations are within the range of historic concentrations at this location, except for August concentrations of potassium, BOD, COD and total phosphorus, which were higher than historic maximum concentrations. During sampling, it was noted that there were a lot of organics at the SW1 location. The Provincial Water Quality Objectives (PWQO) were exceeded for all four sampling events for zinc, for total phosphorus and phenols during three of the four sampling events and for iron for one sampling event. The total phosphorus and iron PWQO have routinely been exceeded in the past at this location. Zinc has occasionally exceeded PWQO in the past. The phenol PWQO has only been exceeded during two sampling events prior to 2011. Iron and total phosphorus PWQO have only rarely been exceeded at the background surface water station though phenols PWQO was slightly exceeded in the December 2011 background sample. The zinc PWQO is consistently exceeded at the background surface water station. Occasionally elevated parameter concentrations at SW1 are a result of road salt impacted runoff from the adjacent internal roadways and/or occasional stagnant water conditions in the pond.

SW2 quality results were compared to the background East Pond parameter concentrations, where samples were collected from both locations. All indicator parameters were elevated at SW2 (Stormwater Detention Area 1) compared to background surface water in May. On occasion, several of the indicator parameters, such as chloride, sodium and potassium, were above background concentration, similar to what has historically been observed. Total phosphorus exceeded the PWQO during all monitoring events in 2013. Iron exceeded the PWQO during eight of the nine monitoring events in 2013. Phenols exceeded the PWQO during six of the eight monitoring events in 2013[18].

18. Phenols were not analyzed during the January 2013 sampling event.

Zinc exceeded the PWQO on six occasions during 2013. Total phosphorus, iron and zinc have historically routinely exceeded their PWQO. The phenol PWQO was historically only exceeded on seven other occasions since 1997. It is noted that background bedrock monitors 5-96 and 8-96 have consistently shown elevated zinc concentrations indicating that high zinc is natural in the area. All surface water quality results are appended.

The requirements of the C of A/ECA specify surface water organics analysis once annually (typically in June). Our 2008 annual report recommended organic samples at SW 1 and SW 2 earlier in the year to avoid frequent dry conditions that typically occur in June. Organic sampling was completed in April 2013. No organics were detected in SW1 or SW2 in 2013.

As requested by the MOE, a revised surface monitoring program was recommended for the WRIC in December 2013. A summary of the response to the MOE, including the revised monitoring are provided is Section 8.9. However, no comments have been received on this recommendation pending the completion of the design and recommended surface water program for the new Public Drop-Off facility (PDO). As this is the case, the current monitoring program will continue.

8.9 Adequacy of Program and Proposed Changes

In conclusion, there were no observable effects attributed to the WRIC and the Transfer Station on the groundwater quality beneath the site. Monitors 5-96, 6b-96, 17b-08 and 19b-08 exceeded ODWS for sodium and/or chloride in 2013 as a result of road salt effects.

There were detections of DEHP, naphthalene, acenaphthylene, chloroform, bromodichloromethane, 2-chlorophenol, N-nitrosodiphenylamine, benzyl butyl phthalate, m-, p-cresol, indole, phenol, o-cresol and phenanthrene in a few of the monitors during 2013. However, based on the historic detections of occasional low levels of VOC throughout the site in both upgradient and downgradient monitors, most of the 2013 VOC detections are not considered to be a result site operations.

The MOE recommended installation of a well nest along the downgradient property boundary to be utilized for impact assessment with respect to the requirements of Guideline B-7[19]. Monitoring nest 22-11 with a bedrock and overburden monitor was installed in November 2011 and the Guideline B-7 analysis was completed. June nitrate and iron at 22b-11 in the overburden and June and December iron at 22a-11 in the bedrock exceed the Guideline B-7 limits. Historically, elevated nitrate concentrations were prevalent across the site at all locations prior to development of the site. Shallow background monitors 1b-91 and 6b-96 historically have also shown elevated nitrate concentrations in the early 1990s and late 1990s indicating that the elevated nitrates were present prior to the commencement of facility operations. As previously discussed, iron concentrations at some of the monitor locations were unusually high during the December 2011 monitoring event. These elevated concentrations decreased at 22a-11 during 2012 but have increased again in 2013. The elevated iron concentrations occurred in both upgradient and downgradient monitors and therefore, do not appear to be related to site operations. Only five samples have been collected from 22-11 since they were drilled in 2011 therefore, continued sampling of these locations will build a larger dataset for comparison purposes.

In previous monitoring reports, we had recommended discontinuation of the organic sampling from the groundwater monitoring program for all historical locations. In the MOE review of the 2009 Annual Monitoring report (Groundwater Review), the reviewer did not support the discontinuation of the organic groundwater sampling program since an impact assessment with respect to the requirements of Guideline B-7 had not yet been completed.

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19. Memorandum from Lynnette Latulippe (MOE) to Bill Shields (City of Guelph), Re: Annual Monitoring Report – 2009 Guelph Wet-Dry Recycling Centre and Waste Transfer Station Groundwater Review, dated February 7, 2011.

This Guideline B-7 assessment was completed (discussed above) and found that there were no impacts at the western downgradient site boundary as a result of site operations therefore, we request removal of the organic sampling from the groundwater monitoring program. Further, increased sampling for organics (twice per year) over the last two years, as a result of the dirt stock pile and addition of location 23-12, has been completed by the City to better assess any potential contributions from the stock pile. These data, as discussed in the report, continue to indicate that sporadic hits of organics occur across the site (upgradient and downgradient), which are not related to any on-site activity. As well, at of the end of 2013, all contaminated soils along with the majority of the stock pile have been removed from the site.

The East Pond setting is similar to the Transfer Station SWM and the WRIC ponds (influenced by road salting and within similar overburden soils) though it is within a different catchment area. The East Pond will be used as a background surface water station for water quality from the on-site surface water features. Monthly surface water samples were collected from the East Pond in 2013 (where possible) to coincide with those occasions when samples are collected from the on-site SWM ponds. If no samples are collected from the any of the SWM pond locations, no sample from the East Pond for that month is required.

The 2013 Transfer Station surface water monitoring program shows that there have been no leachate impacts to the SWM pond as a result of operations at the Waste Transfer Station. The 2013 SWM Pond results from TP1 and TP1(out) showed all indicator parameter concentrations (except magnesium) exceeded background surface water concentrations at EPTS-01 on one or more occasion in 2013 at one or both locations. Parameter concentrations at TP1 and TP1(out) were within historic concentrations for each location and within background overburden concentrations. Elevated concentrations are not attributed to the Transfer Station as site handling and maintenance practices would deter potential surface water impacts. Elevated sodium and chloride concentrations suggest road salt impacts from the adjacent access road. Surface water organic sampling in April and June 2013 showed low chloroform concentrations at the background surface water station, EPTS-01. There were no organics detected at TP1 or TP1(out) in 2013. Historically, only low levels of a few organics have occasionally been detected in the surface water samples. As previously discussed, the design and operation of the Transfer Station minimizes the potential for leachate generation from site activities.

The 2013 WRIC surface water monitoring program shows occasionally elevated parameter concentrations at SW1 and SW2, due to road salt influenced runoff from the adjacent internal roadways, occasional elevated TSS conditions in the pond and/or seasonal influences. The total phosphorus, phenols, zinc and iron PWQO were exceeded during one or more sampling events at the Stormwater Detention Ponds, as they have occasionally to routinely been exceeded in the past. It is noted that background bedrock monitors 5-96 and 8-96 have consistently shown elevated zinc concentrations indicating that high zinc is natural in the area.

The MOE provided surface water review comments on the 2012 Annual Monitoring report through Memorandum[20] and e-mail correspondence on September 20 and October 31, 2013. As part of their comments, the MOE reviewer questioned the effectiveness of the surface water monitoring program and monitoring of the Stormwater Detention Pond 2 (SD2). AECOM provided written response to these concerns, which are summarized below.

The MOE has requested that surface water monitoring should continue as other activities, other than the composting facility, occur at the site that may affect run-off. They have further requested, as per Condition 35(a) that the program be re-evaluated and updated to ensure that all samples and measurements are taken at a time and in a location characteristic of the quality and quantity of the effluent streams over the time period being monitored.

20. Memorandum from Craig Fowler (MOE) to Kevin Noll (MOE), Re: Guelph Waste Resource Innovation Centre, dated May 30, 2013.

Surface water runoff from the site is directed to either the Central detention pond 1, which includes runoff from the western portion of the site and former compost pad or detention pond 2, which receive runoff from the eastern portion of the site and any flow from detention pond 1. Further, detention pond 1 would also be the point of discharge offsite should it ever be required. Although runoff from the site can occur, the majority of the site is underlain by permeable sand and gravel outwash material increasing the potential for surface water infiltration into the groundwater. As stated in the June 26, 2013 response, this is most likely the reason why there is little water in the ponds after rain events to be sampled (i.e., any water collected in the ponds quickly infiltrates into the groundwater).

Further to the above, and mentioned in the June 26, 2013 response, no discharge has occurred from the site after around 1999. It should be noted that in a response to a surcharge of the sewers in 2000, due to high precipitation that occurred in the spring of that year, the discharge point from detention pond was closed to ensure that no effected surface water could leave the site. Since this time, the discharge point has remained closed as no discharge has been required from the pond (i.e., there is never enough water, if any, in the pond to warrant offsite discharge). If detention pond 2 should fill with water such that discharge may be required samples would be collected to ensure it met the Provincial Water Quality Objectives and appropriate Canadian Water Quality Guidelines.

With respect to the current monitoring program, the intent is to assess the ponds throughout the month including during rain/storm events to determine if flow is occurring and if so, to sample any water that may be in the ponds by the end of each month. This is undertaken by City staff each month whereas they routinely assess the ponds during periods of rain and/or storm event for flow and if flow is observed sampling would take place. As stated in the AECOM June 16, 2013 response, we confirmed to the MOE surface water reviewer that the month end sampling is done to comply with the monitoring conditions, although they were generally under pond/stagnant conditions as City staff have not observed any flow during observed rain events. Notwithstanding the current program, the MOE has requested that a re-evaluation of the program be completed to ensure representative samples are collected.

Based on the follow-up comments, the MOE has agreed to the monitoring of Stormwater Detention Pond 2 (SD2) during and after precipitation events with water quality sampling only if discharge is required. The MOE has also requested that if this monitoring is to proceed that documentation regarding the operations of the pond should be provided in order to address, capacity, freeboard and the trigger level at which the pond will be discharged.

A detailed assessment of the storm water ponds is contained in the “Storm & Sanitary Drainage Assessment Report for the City of Guelph Waste Resource Innovation Centre, dated August 2007 (GLL70-176). The physical characteristics of Pond SD2, as outlined in Table 3.5 of the drainage assessment report, are provided in the table below.

Depth / Stage (m)	Storage Volume (m^3)	Pond Outflow 400 mmϕ. (m^3/s)1	Pond Outflow 900 mm ϕCSP (m^3/s)1	Comments
0	75	0000	0.000	Pond invert
0.2	470	0.149	0.293	400 mm orifice set at + 0.15 m above invert
0.45	870	0.224	0.535	
1.0	1870	0.334	1.254	Maximum pond depth

Notes: 1. Units were incorrectly stated as L/s in the report (GLL70-176) as values in report are correctly report in m^3/s.

Based on the detailed site assessment, it was determined that the Pond SD2 outlet could accommodate the peak flow generated by a 100 year storm (i.e., predicted outflow is 1.2 m^3/s versus 1.33 m^3/s pre development levels). However, it was concluded through modelling, that due to the modification to the system, which included the blockage of the outlet at SD2, that that there could be surface flooding in the low lying areas for storm events in excess of a 5 year storm. Although this has not been observed at the site to-date, it is recommended that the trigger water level in the pond be set based on the theoretical calculation for a 5 year storm, in order to be conservative.

Therefore, the trigger water level is to be set at 0.46 m as per the theoretical volume calculated in Pond SD2 of 890 m^3 from a 5 year storm (Table 3.6 in the drainage assessment report).

Based on the above information, the following surface water monitoring program is recommended:

- Assess Storm Water Detention Pond 2 on a monthly basis/ and or during periods of rain/storm events (where practical);
- Install a staff gauge at the point of discharge from SD2 to record observed levels;
- When a target level of 0.46 m above pond invert is reached, discharge would be required;
- Water quality sampling should be completed, prior to any discharge, to insure all applicable Provincial Water Quality Objectives (PWQO) and Canadian Water Quality Guidelines (CWQG) are met.
- If applicable guidelines are met off site discharge should be completed until below the outlet invert. Upon reaching this level, the outlet should then be closed.

Further to the above, the storm water management pond (TP) on the transfer station property will continue to be sampled on the monthly frequency, under non stagnant conditions, based on current proposed upgrades to the transfer station facility. As part of this, sampling of the background station EPTS-01 should also continue on a monthly basis.

If the more detailed documentation continues to demonstrate there is minimal to no flow occurring, it is recommended that the surface water program be discontinued at the site.

9. Public Liaison (PLC) Activities

The following is a summary of the PLC activities in 2013, as provided by the City.

The city ensured that meetings were held on a quarterly basis. The PLC has been informed and provided an opportunity to comment on all ECA amendments that were submitted to the Ministry in 2013.

10. WRIC Contingency Plans

The City has detailed contingency plans in place for the site prepared by the Environmental Services Department, Solid Waste Resources. The 2008 Emergency and Contingency Plan and the 2006 Contingency Plan documents (WRIC Contingency Programs, WRIC Business Continuity Plan, WRIC Emergency Plan, WRIC Fire Safety Plan) were reviewed by AECOM.

The pertinent items identified by the C of A/ECA are summarized below.

10.1 Spills

The WRIC has a Spills Handling and Reporting procedure in place. This procedure applies to all areas, employees and contractors at the WRIC. The procedure defines spills: minor, major, moderate and hazardous materials. The Spills procedure then outlines how to clean up a minor spill and who must be notified in the case of moderate or major spills.

In the event of a minor spill, the plan indicates that appropriate personal protective equipment should be worn and absorbents used to soak up the spill. Absorbed material should be transported to the Transfer Station for disposal.

The plan also covers procedures to follow in the event of a moderate or major spill. The City of Guelph Operations Department, the Environmental Protection Officer at the Wastewater Treatment Plant and the MOE Spills Action Centre must be notified, also in the event of a major spill, the Fire Department, Police, Operations Department, or City of Guelph Emergency Operations Control Group may need to be notified. The plan indicates that all necessary steps should be taken to eliminate possible ignition sources and prevent the spill from leaving the area or entering a watercourse. The plan notes that an Employee Incident Report must be completed once the cleanup is underway. Finally, the plan provides sources of additional information and applicable legislation and references.

10.2 Fire or Similar Emergency

The WRIC has comprehensive plans in place in case of fire or similar emergency documented in the WRIC Fire Safety Plan and the WRIC Emergency Plan. The Fire Safety Plan includes site mapping, floor plans for each of the on-site buildings (including locations of fire alarms and extinguishers), procedures to be followed in the event of a fire/emergency, staff responsibilities and contacts in the event of a fire/emergency, procedures for fire drills, prevention and monitoring equipment maintenance.

The Emergency Plan includes many of the elements incorporated into the Fire Safety Plan plus emergency communications procedures, locations of emergency supplies, emergency equipment information and procedures related to specific emergency situations. The original Fire Safety Plan was reviewed and approved by the City Fire Department.

10.3 Composting Facilities

The Organic Waste Processing Facility operated from mid-February to December 2012. There is a 2012 contingency plan that now includes the waste processing facility, approved in late 2011.

10.4 Power or Equipment Failure

Procedures related to power failure are discussed in the Emergency and Contingency Plan and the WRIC Emergency Plan. In the event of a minor power outage, a portable generator is available at the closed Eastview Road Landfill site. There is currently no contract for a company to supply the WRIC with a generator in the event of a major power outage. However, arrangements are in place for an outside power generation unit for the WRIC Administration Building if it is being used as an Operations Control Centre. If electricity is unavailable for more than a 24-hour period, the WRIC would be required to re-direct waste materials. Emergency procedures have also been assessed for on-site facilities should the power failure be accompanied by flood or freezing conditions.

Procedures as a result of loss of on-site facilities are addressed in the Emergency and Contingency Plan as well as the WRIC Business Continuity Plan. Recommended procedures associated with the loss of each of the facilities are documented. Ultimately, management will assess the course of action to restore the facilities and re-gain normal operations. A new generator has been installed at the Organic Waste Processing Facility.

10.5 Odour

Twice daily odour monitoring is conducted by qualified Solid Waste Resources (SWR) staff. Odour complaints from the public are investigated through the SWR Environmental Complaint Investigation Procedure in compliance with Condition 46 of the C of A. Control measures may include closing doors, cleaning up standing water and/or spills, other housekeeping measures, making changes to the processes or removal of the odour source to the landfill. If the odour persists, a portion of the operation or the entire site may be closed until the issue is resolved.

In response to the odour survey report completed by the MOE in 2012, the City prepared an action plan to address the potential for off-site odours.

10.6 Aircraft Hazards/Bird Control

The Guelph Air Park is located within three km of the site. The most obvious aircraft hazard, as it relates to the operation of the WRIC, is the nuisance bird population. Daily monitoring of the number of birds occurs as part of the site inspections. A maximum number of birds on-site was determined in the bird hazard evaluation referred to in the C of A. Continual housekeeping measures, such as litter pick up around the site, at the yard waste pile and compost area, occur at the site to deter the attraction of birds and vermin. Should nuisance birds become an issue at the site, trained birds-of-prey or other mitigative measures will be considered. If necessary, the site operations may cease until the issue is resolved.

Dust, steam, smoke or any airborne vapour may pose an aircraft hazard due to decreased visibility. Operations are conducted in a manner to minimize emissions.

10.7 Un-Authorized Waste

Non-compliant loads are rejected at the scale house prior to entering the site. If un-authorized, hazardous or inappropriate waste is inadvertently accepted, the material will be loaded back on the vehicle (if it has not left the site) or the material will be placed in the appropriate bin for removal by a licensed hauler to an appropriate disposal site. The waste will be transported off-site as soon as arrangements can be made with a certified disposal company. If possible, the vehicle that brought the non-compliant load will be charged for the disposal fee.

10.8 Groundwater/Surface Water Contamination

The site and operational procedures are designed such that there will be minimal impacts on the environment. In the event of a surface water impact, the on-site SWM detention ponds have valves that can stop off-site flow. A Spills Contingency Plan (discussed in Section 10.1) is in place to handle spills. Dry and wet waste received and handled at the site is conducted in indoor covered areas with impermeable floor surfaces and materials stored outside are covered such that impacted runoff is not generated.

Nevertheless, should water quality results suggest that there are impacts to the ground or surface water, the monitor locations/surface water stations will be re-sampled within a reasonable period of time to confirm results. As well, the area immediately adjacent and upgradient of the impacted location will be inspected for possible contaminant sources. Equipment and floor drains may also be inspected to determine if repairs are required. These repairs will be completed immediately. Should the repairs be such that normal operation is not possible, this portion of the operation will be shut down until maintenance is complete. If the contamination is a result of failure in the infrastructure that cannot be repaired under normal maintenance procedures, a remedial plan will be developed to prevent further impacts.

10.9 Quality/Fungal Contamination

If issues arise regarding air quality or fungal contamination, the appropriate qualified professional will be contracted to investigate the cause and recommend remedial measures. Remedial measures may include a change/alteration of operations or suspension of operations in the affected area(s).

All staff receive and are trained on the procedures contained within the WRIC Emergency Plan and WRIC Fire Safety Plan. The WRIC Business Continuity Plan is for use only by City Management staff due to personal information within the document. Contingency Plans are available at the WRIC for review by the Ministry.

11. Summary of Site Operational Changes and Compliance

As reported by the City, there were no deficiencies, items of non-compliance, or process aberrations in 2013. There have been no changes to the Engineer's Report[21] or to the Design and Operations Report[22] since the last annual report. There were no changes to the WRIC Environmental Emergency Plan in 2013.

12. Conclusions

The site operations at the Solid Waste Transfer Station and Wet-Dry Recycling Centre do not appear to have any negative impacts on the ground and surface water quality in the vicinity of the site.

The following conclusions are provided based on the findings of the 2013 program:

Composting Site

a) The total tonnage of organic waste received at the composting site in 2013 was 19,125 tonnes. The organic waste was mostly from the City of Guelph and Wellington County.

b) A total tonnage of 3,432 tonnes of finished compost was produced and shipped to a farmer in Atwood, Ontario, northwest of Guelph in 2013. A total of 500 tonnes of screening and residual compost waste from the composting process were shipped to the Transfer Station and then the St Thomas (Green Lane) Landfill site in Elgin County, Ontario or to various other locations.

c) The total tonnage of wood waste ("clean wood") and amendment/mulch material received at the site in 2013 was about 263 tonnes and 151 tonnes, respectively. Wood waste was received mostly from the City of Guelph. Amendment material was received from the City of Guelph and Speedside Construction Limited.

d) There were four odour incidents received by staff at the Waste Resources Innovation Centre in 2013. All complaints were investigated by site management staff. Staff conducting the investigations did not detect any odours at the complainant locations and were unable to confirm the source of the odours.

e) Compost samples indicate that all compost that has been shipped off of the site has passed the conditions for a Class A compost under the CCME Guidelines and the conditions within the C of A. Temperature monitoring logs of the tunnels at the composting facility show that pasteurisation at 55 degrees C was maintained for 72 hours, as required.

f) There were no confirmed deficiencies/non-compliance or environmental/operational issues related to the compost facility in 2013. The facility is operating as designed.

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21. Engineer's Report for the City of Guelph Waste Recycling Innovation Centre prepared by Golder Associates dated July 20, 2010.

22. The Design and Operations Report for the City of Guelph Material Recovery Facility prepared by Golder Associates, dated January 12, 2010. The Design and Operations Report for the City of Guelph Waste Transfer Station prepared by Golder Associates, dated January 12, 2010. The Design and Operations Report for the City of Guelph WRIC Public Drop Off and Municipal Hazardous and Special Waste Facilities prepared by Golder Associates, dated January 12, 2010.

Operations

a) The total tonnage of waste accepted by the site in 2013 was 97,414 tonnes. By the end of 2013, 80,024 tonnes were shipped off-site with 30,506 tonnes of outgoing materials from the Material Recovery facility (MRF).

b) Of the 51,745 tonnes of non-processed outgoing materials received at the Transfer Station in 2013, 31,534 tonnes (61% of the outgoing materials) is sent to the St. Thomas (Green Lane) Landfill in Elgin County and 7,716 tonnes (15% of outgoing materials) is sent to the Waste Management Twin Creeks Landfill in Lambton County for disposal. 5,918 tonnes (11%) of material from the transfer station was sent to the Covanta Energy from Waste facility in Niagara Falls, New York. The remaining 6,577 tonnes (13%) of non-processed materials is marketable consisting of other recyclable materials such as shingles, construction and demolition debris, clean wood, concrete and rubble.

c) In 2013, 24,773 tonnes of marketable processed material was transferred off the site from the WRIC facility. 13,343 tonnes (54%) was paper-based goods such as cardboard and newsprint, 1,937 tonnes (8%) was plastics and the remaining 9,493 tonnes (38%) was other recyclable materials such as aluminum, steel cans, glass, tires, metal, yard waste, brush and leaves. As reflected in the volumes above, the majority of the marketable materials sold were paper products.

d) The Emergency and Contingency Plan for the site were reviewed and the items pertinent to the C of A are summarized in this document.

e) No remedial or mitigative actions were required at the WRIC Facility or the Transfer Station in 2013 based on findings from the monitoring program.

Groundwater Elevations and Flows

a) Shallow groundwater flow beneath the majority of the site is in a north-easterly direction. To the west of the site, groundwater flows out of a bedrock high into the outwash beneath the site before being directed to the northeast. The 2008 drilling identified a bedrock high southeast of the site in the vicinity of 20a-08. The 2012 drilling further refined flow directions.

b) The bedrock groundwater flow pattern is similar to the overlying shallow groundwater system. Groundwater flow is from west to east and east to west coming into the site area from both directions and ultimately to the north following the former paleo river valley (incised bedrock low) that trends to the north.

Leachate

a) Historically, WRIC Monitoring results from SW3 was used the characterize compost leachate inputs. SW3 receives mostly runoff from the former compost pad. SW3 is no longer representative of direct compost leachate. In the past SW3 (or CL-1 leachate), showed elevated concentrations of conductivity, potassium, BOD, COD, TKN, ammonia, total phosphorus, chloride, sodium and iron. SW3 parameter concentrations are generally much lower than pre-2007 concentrations in the absence of compost runoff. In 2013, SW3 parameter concentrations are generally much lower than pre-2007 concentrations in the absence of compost inputs. Though concentrations were still lower than pre-2007, 2013 parameter concentrations tended to be highest in April and November/December, possibly due to flushing of residual leachate effects combined with road salt impacts at this location, which have been apparent during previous thaw events and early spring sampling events. This water was ultimately directed to the sanitary sewer.

b) There were no organics detected during the April 2013 organics sampling of SW3. Historically only low levels of a few organics have occasionally been detected in the surface water samples.

Groundwater

a) Groundwater monitoring results indicate road salt effects at some up-gradient groundwater monitoring locations (5-96, 8-96, 18b-08, 19b-08, 20b-08). These are related to off-site winter road salting of the adjacent major roadways. Road salt impacts are detected in some on-site downgradient groundwater monitors (6b-96, 7-96, 13b-01, 15b-01, 17b-08, 19b-08). Monitors 5-96, 6b-96, 17b-08 and 19b-08 exceeded ODWS for sodium and/or chloride in 2013 as a result of road salt impacts. There were no apparent leachate impacts observed in the groundwater at the site boundary.

b) There were no exceedances of the nitrate ODWS in 2013. Historically, elevated nitrate concentrations were prevalent across the site at all locations prior to development of the site. Elevated nitrates are most likely a result of long-term agricultural land use in the area and are not a result of site operations.

c) Exceedances of the iron ODWS occurred at many of the monitoring locations during the December 2011 and persisted throughout 2012, though at lower concentrations with many of the monitors with iron concentrations below the laboratory detection limits by December 2013 suggesting that the iron in most of the monitors are now returning to background levels. These elevated iron concentrations will continue to be investigated further in future monitoring events. Aside from the sodium, chloride and iron exceedances discussed above, there were no other exceedances of the Ontario Drinking Water Standards in 2013 for the groundwater monitors sampled for the WRIC and Transfer Station monitoring programs.

d) The 2013 organic sampling showed there were detections of DEHP, naphthalene, acenaphthylene, chloroform, bromodichloromethane, 2-chlorophenol, N-nitrosodiphenylamine, benzyl butyl phthalate, m-, p-cresol, indole, phenol, o-cresol and phenanthrene in a few of the monitors. However, based on the historic detections of occasional low levels of VOC throughout the site in both upgradient and downgradient monitors, the 2013 VOC detections are not considered to be related to site operations. New monitor 23b-12 showed detections of several VOC's in the initial sample collected in July 2012 and to a lesser degree in the follow-up sample (similar to and, in some cases, lower than observed at background). No VOC's were detected in December 2012, with the exception of Chloroform, which is not considered to be related to site operations. Several low levels of organics continued to be detected during 2013. It was concluded the VOC results from July 2012 were most likely related to a very hot summer and the close proximity of this location to Stone Road. There are no sources of VOCs on the WRIC or Transfer station property as waste is handled within the covered buildings, truck boxes are covered when outside (preventing contact between the waste and precipitation) and no waste processing occurs on-site.

e) No other organics were detected at any of the other groundwater monitors sampled during 2013.

f) A Guideline B-7 assessment for the overburden and the bedrock was completed for the new monitor nest 22-11, located along the western property boundary. June nitrate and iron at 22b-11 in the overburden and June and December iron at 22a-11 in the bedrock exceed the Guideline B-7 limits. Historically, elevated nitrate concentrations were prevalent across the site at all locations prior to development of the site. Shallow background monitors 1b-91 and 6b-96 historically have also shown elevated nitrate concentrations in the early 1990s and late 1990s indicating that the elevated nitrates were present prior to the commencement of facility operations. As previously discussed, iron concentrations at some of the monitor locations were unusually high during the December 2011 monitoring event. These elevated concentrations decreased at 22a-11 during 2012 but have increased again in 2013. The elevated iron concentrations occurred in both upgradient and downgradient monitors and therefore, do not appear to be related to site operations.

g) No observable effects were detected in the shallow outwash water quality related to site operations. Similarly, no effects related to site operation were observed in the bedrock. Further, no effects related to site operations was observed at the downgradient site boundary.

Surface Water Monitoring

a) Monthly monitoring of the stormwater management pond in the northwest corner of the site was conducted, with samples collected at the culvert on the west side of the pond (TP1) on nine occasions and at the discharge at the north end of the pond (TP1 (out)) on 10 occasions in 2013. SWM pond samples at both TP1 and at TP1 (out) exceeded the PWQO for zinc, iron, total phosphorus and phenols during one or more 2013 sampling events. The elevated total phosphorus is a result of agricultural land use and not a result of operations at the Transfer Station. Elevated zinc, total phosphorus and iron concentrations appear to be related to external factors since background surface water have also exceeded PWQO for these parameters. Metals are a common contaminant from roadway runoff. Elevated phosphorus is typical in rural and urbanized areas. No organics were detected in the stormwater management pond during 2013.

b) Of the 11 sets of samples collected in 2013 at EPTS-01 (the existing Transfer Station on-site surface water pond, East Pond), the PWQO for zinc was exceeded during all the 2013 monitoring events. Zinc has consistently exceeded PWQO in the past at this location. Phenols, total phosphorus and iron have exceeded PWQO in the past but were within PWQO in 2013. All the leachate indicator parameters concentrations were within background overburden ranges. Surface water organic sampling in April and June 2013 showed low chloroform concentrations at the background surface water station, EPTS-01. Low chloroform levels have historically occasionally been detected at this location. The East Pond shows no indications of impacts as a result of site operations.

c) The SW 1 (Stormwater Detention Area 2) samples at the WRIC showed elevated concentrations of some of the indicator parameters in 2013 during one or more of the four sampling events. 2013 SW1 parameter concentrations are within the range of historic concentrations at this location, except for August concentrations of potassium, BOD, COD and total phosphorus, which were higher than historic maximum concentrations. The summer (August) concentrations were generally higher than the January, April and October concentrations, likely due to seasonal influences. Zinc (four events), total phosphorus (three events), phenols (three events) and iron (one event) exceeded the PWQO during 2013. Total phosphorus, iron and zinc have historically routinely exceeded their PWQO. The phenol PWQO at SW1 was historically only exceeded on six other occasions since 1997.

d) The SW 2 (Stormwater Detention Area 1) samples at the WRIC showed elevated concentrations of the indicator parameters in 2013. The 2013 parameter concentrations were within the range of historic concentrations at SW2 except for phenols, COD, TKN, total phosphorus, iron, alkalinity and BOD. The high TSS concentrations in May and June, likely contributed to some of these elevated values. The May to July and December concentrations were generally higher than the concentrations of samples collected during other months, likely due to seasonal influences. Total phosphorus (all nine events), iron (eight events), phenols (six events) and zinc (six events) exceeded the PWQO during 2013. The phenol PWQO at SW2 was historically only exceeded on seven other occasions since 1997. It is noted that background bedrock monitors 5-96 and 8-96 have consistently shown elevated zinc concentrations indicating that high zinc is natural in the area.

e) No organics were detected in SW1, SW2 or SW3 in 2013.

13. Recommendations

The following recommendations are provided for consideration:

a) Records pertaining to details of the incoming and outgoing waste/materials, environmental and operational problems should continue to be kept up to date for the WRIC and the Transfer Station.

b) The approved ground and surface water monitoring program should be continued for the Transfer Station during 2014 for the site with the inclusion of monitoring location 23-12 drilled during 2012. As previously recommended by the MOE, additional annual VOC sampling of monitors 5-96, 7-96, 9-96, 12b-00 and nitrate and nitrite analysis have been included in the monitoring program for the site. The monitoring program for both the sites is summarized on Table 11.

c) Groundwater, surface water and leachate sampling should be continued for the WRIC in 2014 as originally outlined in the 1997 annual report and revised in 1999.

d) All samples should be analyzed for the parameters listed in the table below.

Monitoring Parameter List

Leachate Indicator		
Parameters	• Biological Oxygen Demand (BOD) • Chemical Oxygen Demand (COD) • Total Kjeldahl Nitrogen (TKN) • Ammonia as Nitrogen (NH3-N) • Total Phosphorus (Total P) • Total Suspended Solids (TSS) for surface water and leachate. • Total Sulphate (SO4) • Phenols • Nitrate (NO3) and Nitrite (NO2)	• Chloride (Cl) • Sodium (Na) • Calcium (Ca) • Boron (B) • Total Iron (Fe) • Phosphorus (P) • Zinc (Zn)
General Parameters	• pH • Conductivity • Alkalinity	• Magnesium (Mg) • Potassium (K)
Organics	• EPA 624,625 (ATG 16+17+18 & ATG 19+20)	

e) The East Pond will be used as a background surface water station for water quality from the on-site surface water features. To effectively compare surface water samples, monthly samples should continue to be collected on the same day. If no samples are collected from the any of the SWM pond locations, no sample from the East Pond for that month is required.

f) Based on MOE review comments of the 2012 Annual Monitoring report, a revised surface monitoring program was recommended for the WRIC in December 2013. The monitoring program as outlined in this response is as follows: :

- Assess Storm Water Detention Pond 2 (SD2) on a monthly basis/ and or during periods of rain/storm events (where practical);
- Install a staff gauge at the point of discharge from SD2 to record observed levels;
- When a target level of 0.46 m above pond invert is reached, discharge would be required;
- Water quality sampling should be completed, prior to any discharge, to insure all applicable Provincial Water Quality Objectives (PWQO) and Canadian Water Quality Guidelines (CWQG) are met.
- If applicable guidelines are met off site discharge should be completed until below the outlet invert. Upon reaching this level, the outlet should then be closed.

At this time, no comments have been received on this recommendation pending the completion of the design and recommended surface water program for the new Public Drop-Off facility (PDO). As this is the case, the current monitoring program will continue.

Table 11. Monitoring Program Summary

AECOM

City of Guelph WRIC
Groundwater Monitoring Locations and Sampling Frequency

Formation	Monitor Locations		Sampling Frequency	Water Levels *
Sandy Silt Till	2a-91	7-96	Semi Annually - Inorganics (June, December) Annually - Organics (June)	Semi Annually (June, December)
Sandy Outwash	2b-91	9-96	Semi Annually - Inorganics (June, December)	Semi Annually (June, December)
	6b-96			
Gravelly Outwash	11b-00	12b-00	Semi Annually - Inorganics (June, December)	Semi Annually (June, December)
Dolostone Bedrock	5-96	10-00	Semi Annually - Inorganics (June, December)	Semi Annually (June, December)
	6a-96	11a-00		
	8-96	12a-00		

Leachate Monitoring Location and Sampling Frequency

Monitor Locations	Sampling Frequency	Leachate Level Sampling
SW3 - Forbay (Southern end) of Detention Pond 1 (Scalehouse)	Semi Annually** - Inorganics Annually** - Organics	Monthly * - Discharge

Surface Water Monitoring Stations and Sampling Frequency

Monitor Locations	Sampling Frequency	SW Level Sampling
SW1 - Downstream outflow of Detention Pond 2 (East of Admin)	Monthly** - Inorganics Annually** - Organics	Monthly ** - Discharge
SW2 - Downstream outflow of Detention Pond 1 (Scalehouse)	Monthly** - Inorganics Annually** - Organics	Monthly ** - Discharge

** C of A requirements for Wet-Dry is semi-annual. Recommend quarterly water levels collected to compare to Waste Transfer Station locations, which have quarterly requirements.*

*** After a rain event or if no rain, at end of sampling period*

City of Guelph Transfer Station
Groundwater Monitoring Locations and Sampling Frequency

Formation	itor Locations		Sampling Program
Gravelly Outwash	13b-01	18b-08	Semi Annually - Inorganics (June, December) Annually - Organics (June)
	14b-01	19b-08	
	15b-01	20b-08	
	16b-08	22b-11	
	17b-08	23b-12	
Dolostone Bedrock	13a-01	19a-08	Semi Annually - Inorganics (June, December) Annually - Organics (June)
	14a-01	20a-08	
	15a-01	21a-08	
	16a-08	22a-11	
	17a-08	23a-12	
	18a-08	EPTS-01	

Groundwater Levels

Formation	Monitor Locations		Sampling Program
Gravelly Outwash	13b-01	18b-08	Quarterly (June, December)
	14b-01	19b-08	
	15b-01	20b-08	
	16b-08	22b-11	
	17b-08	23b-12	
Dolostone Bedrock	13a-01	18a-08	Quarterly (June, December)
	14a-01	19a-08	
	15a-01	20a-08	
	16a-08	21a-08	
	17a-08	22a-11	
	23a-12		

Surface Water Monitoring Stations and Sampling Frequency

Monitor Locations	Sampling Program
TP1	Monthly*** - Inorganics Annually*** - Organics
TP (out)	Monthly*** - Inorganics Annually*** - Organics
East Pond (EPTS-01)	Monthly*** - Inorganics Annually*** - Organics

**** After a rain event or if no rain, at end of sampling period*

14. References

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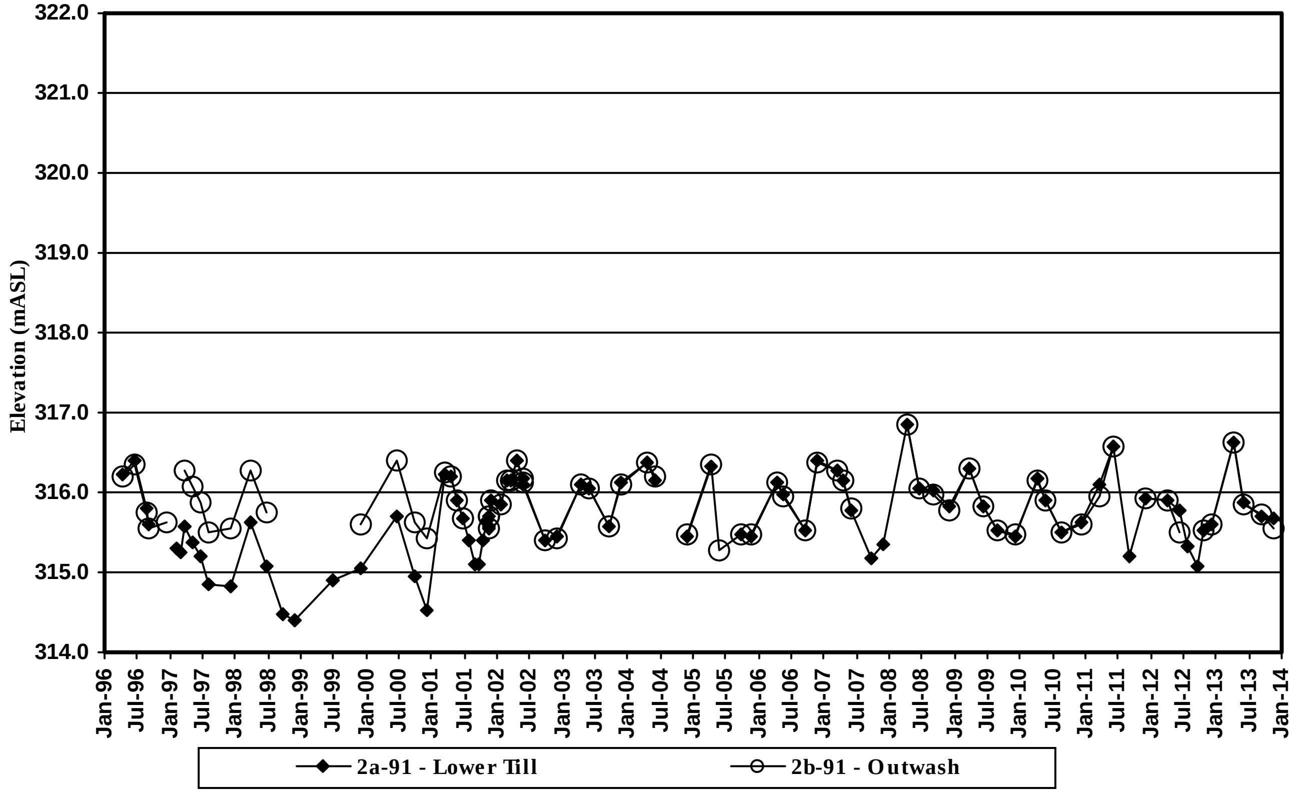
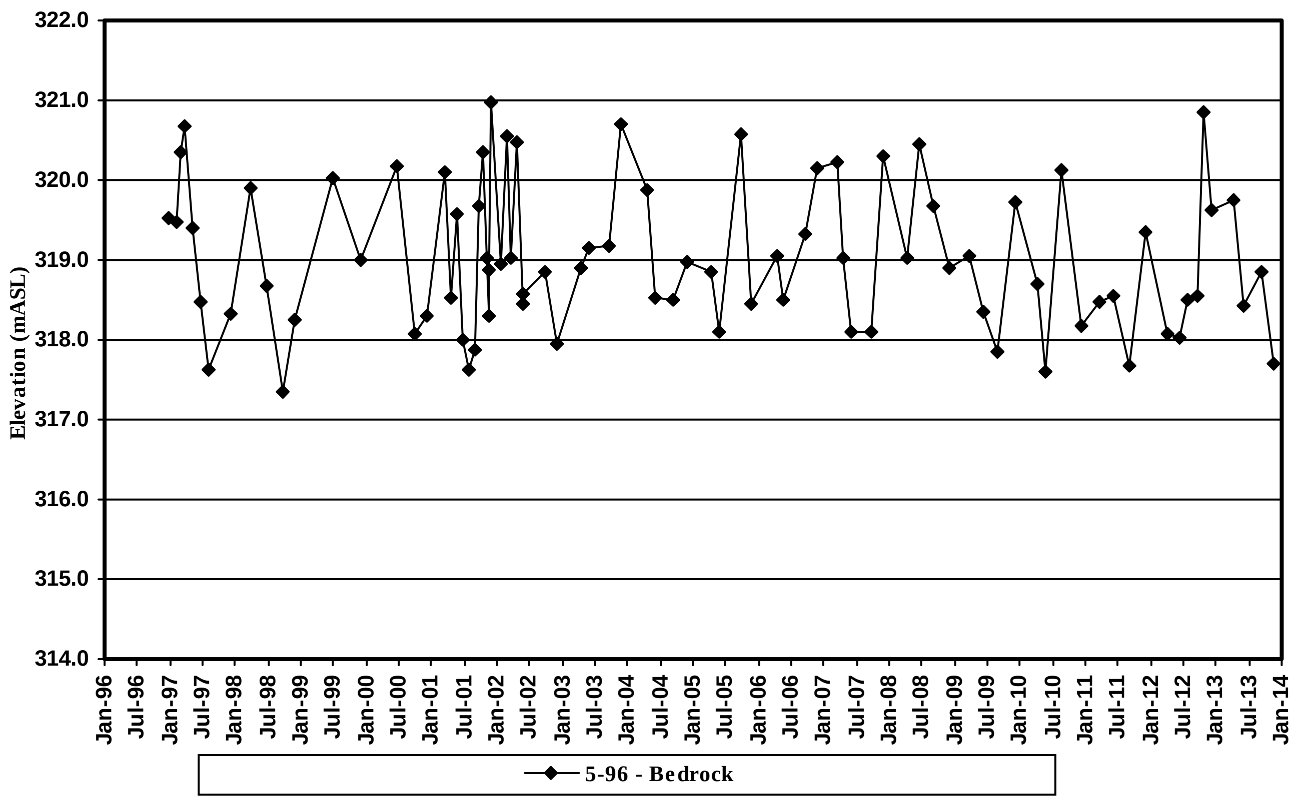
Ministry of the Environment and Energy (MOEE), 1994b:
Guideline B-7 "Incorporation of the Reasonable Use Concept into More Groundwater Management Activities", MOEE, 1994.

Appendix A

Groundwater Elevations and Hydrographs





AECOM

Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE
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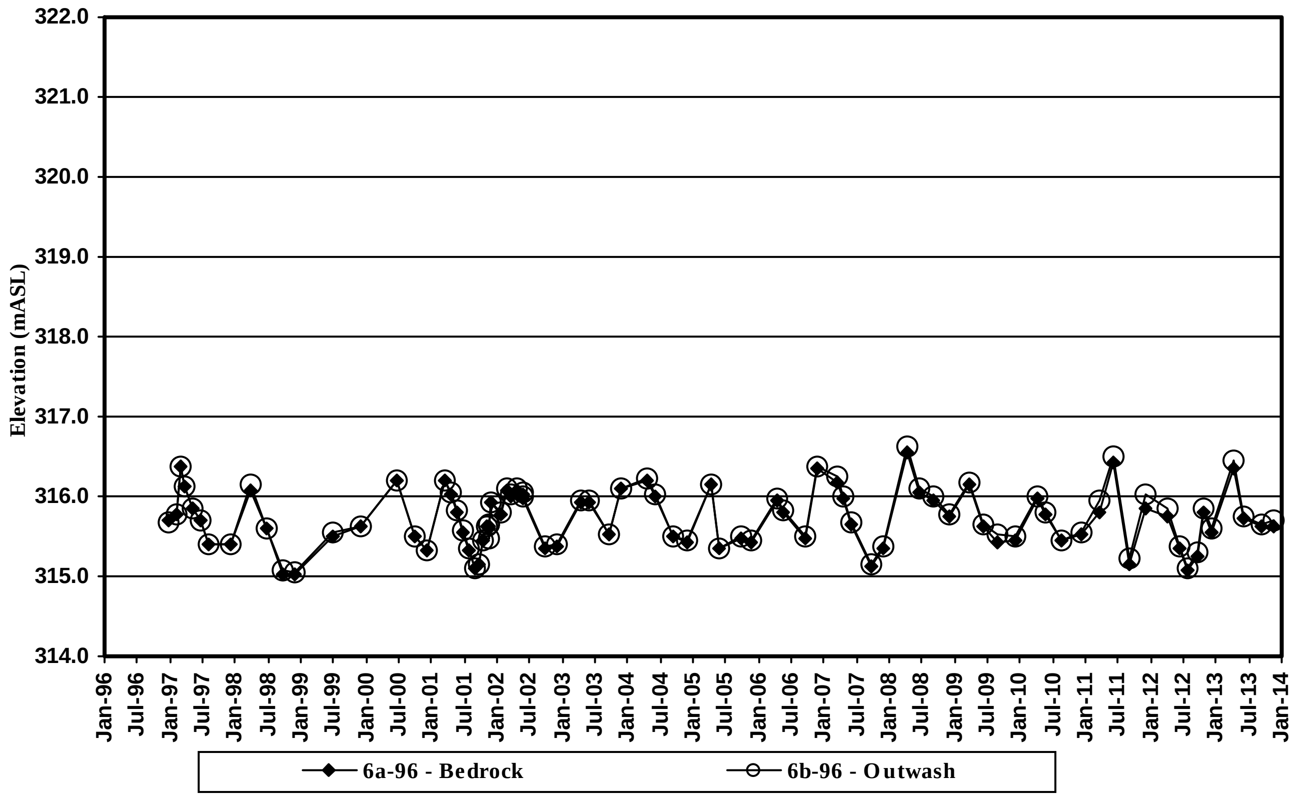
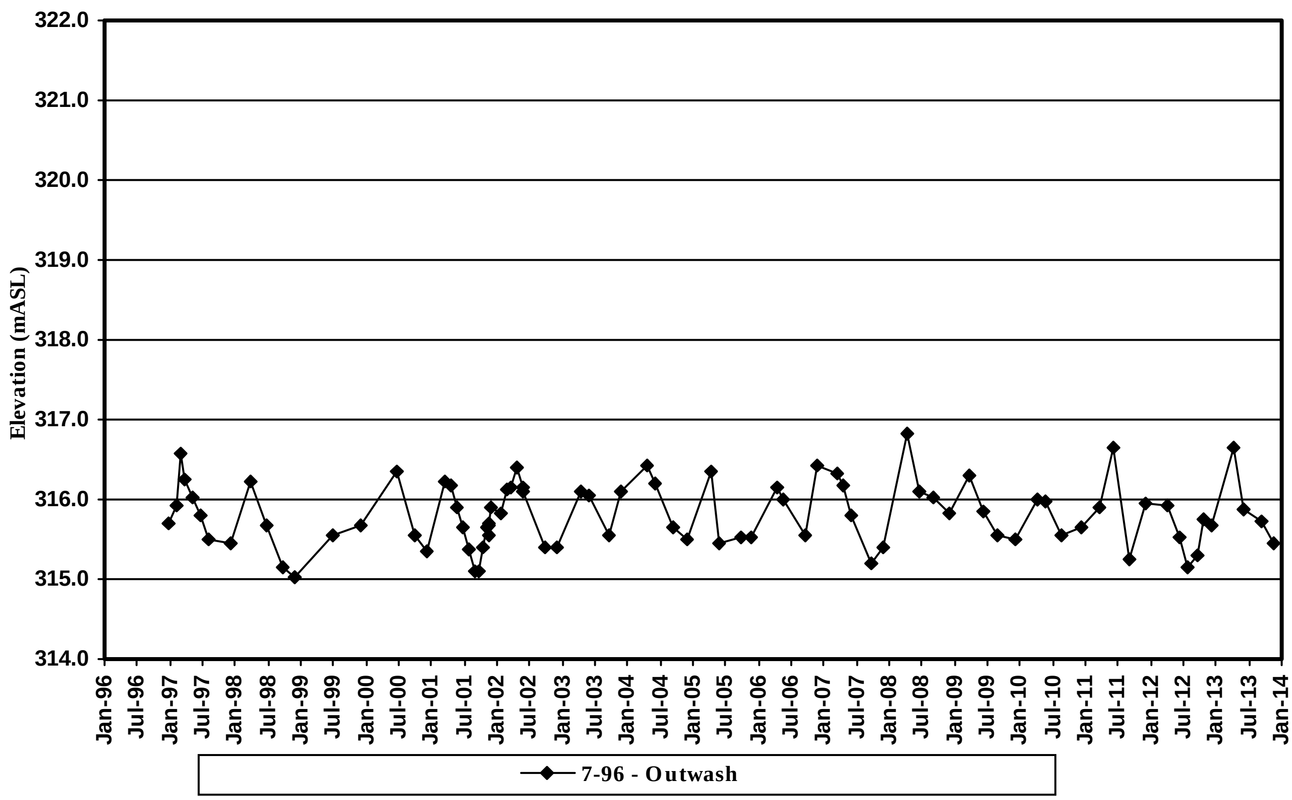
9 Rpt Hydrographs





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Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE
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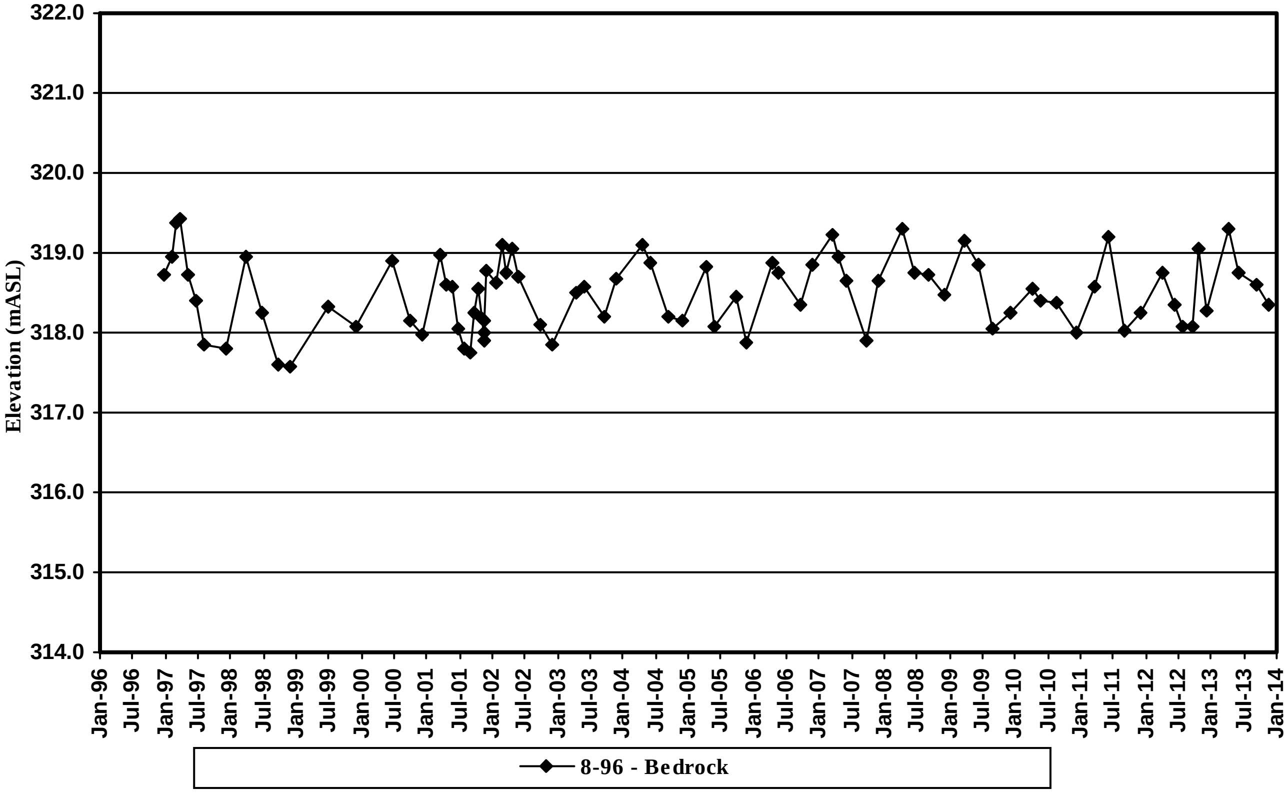
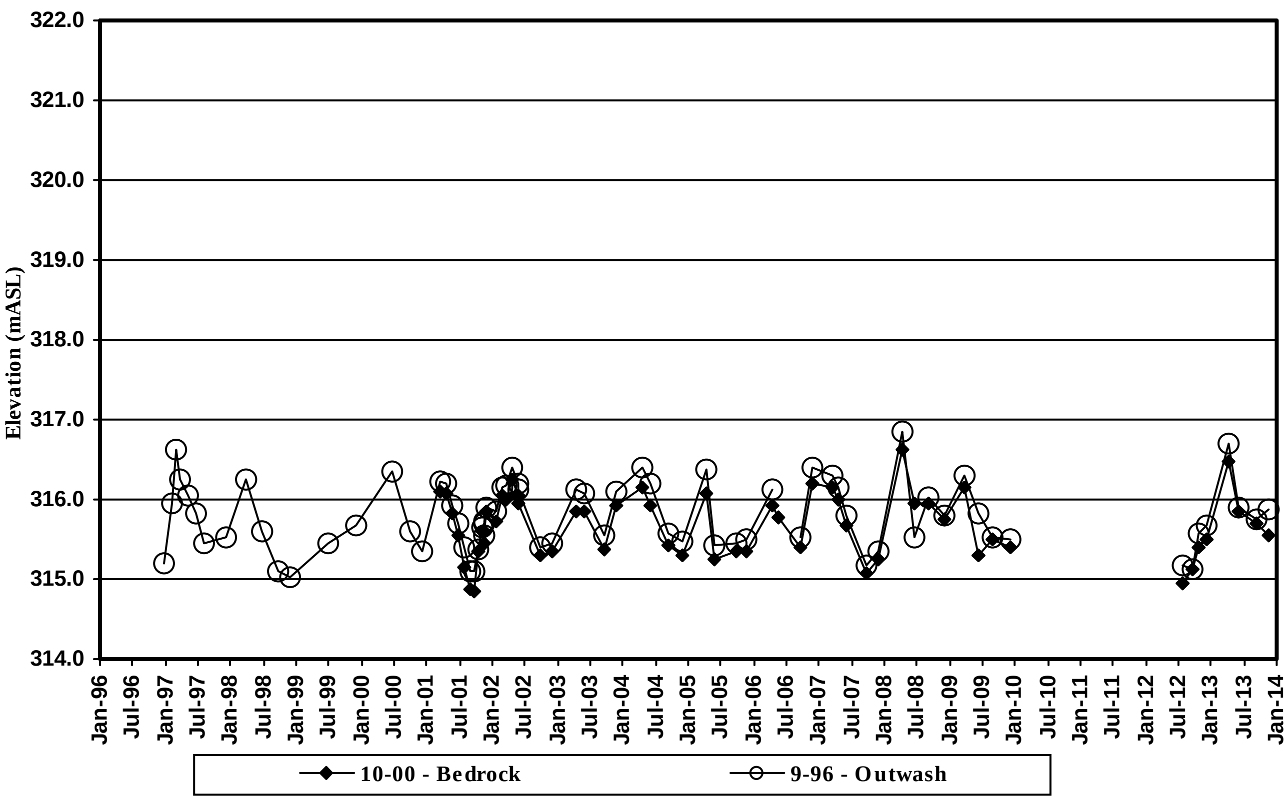
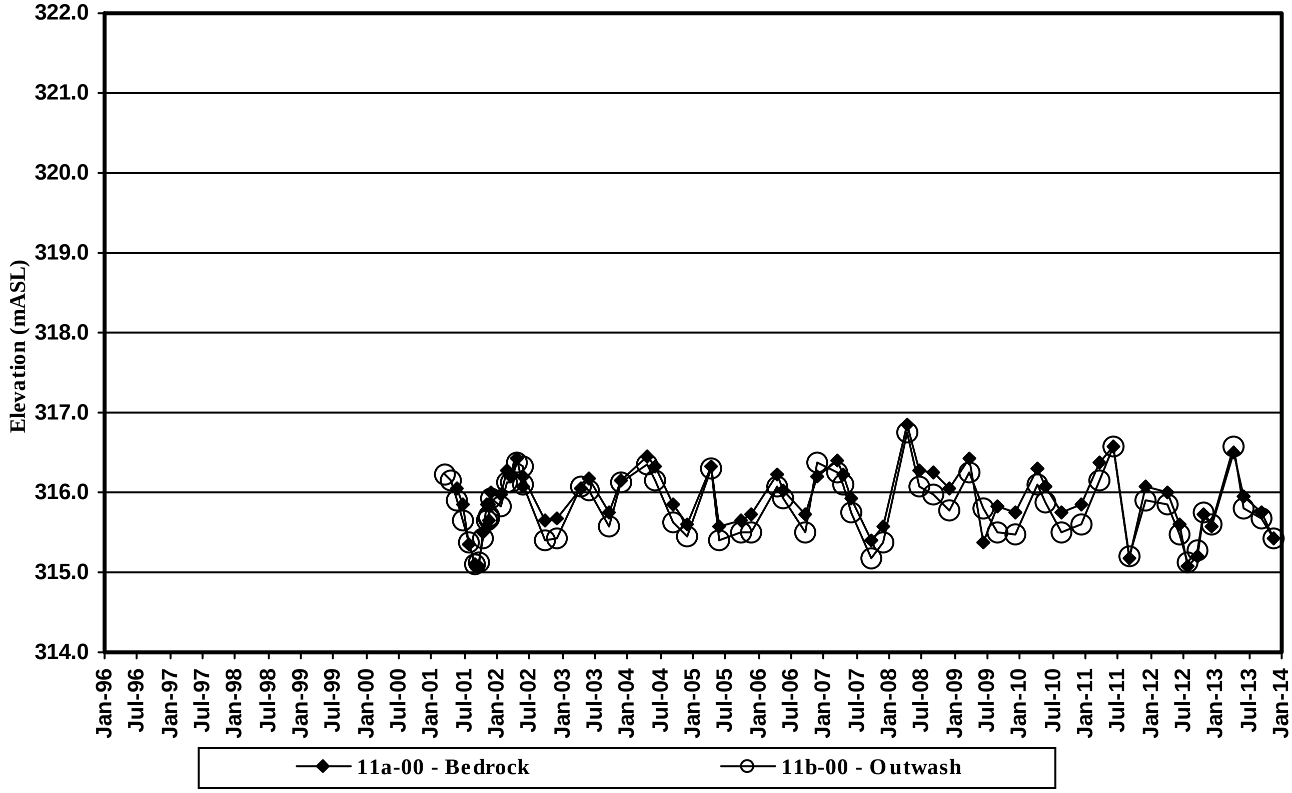
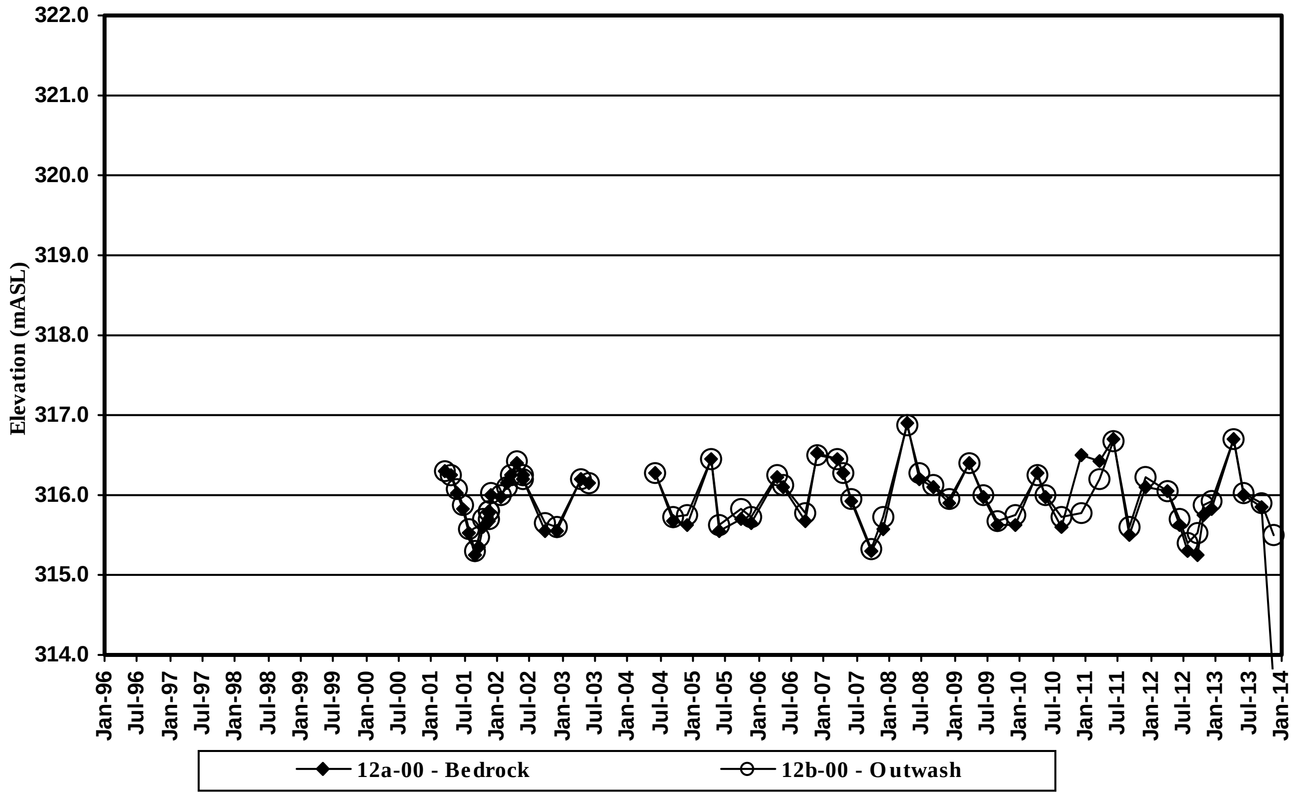
9 Rpt Hydrographs





AECOM	Guelph WRIC & Waste Transfer Station Hydrographs	FIGURE A - 3 60315291 9 Rpt Hydrographs





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Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE

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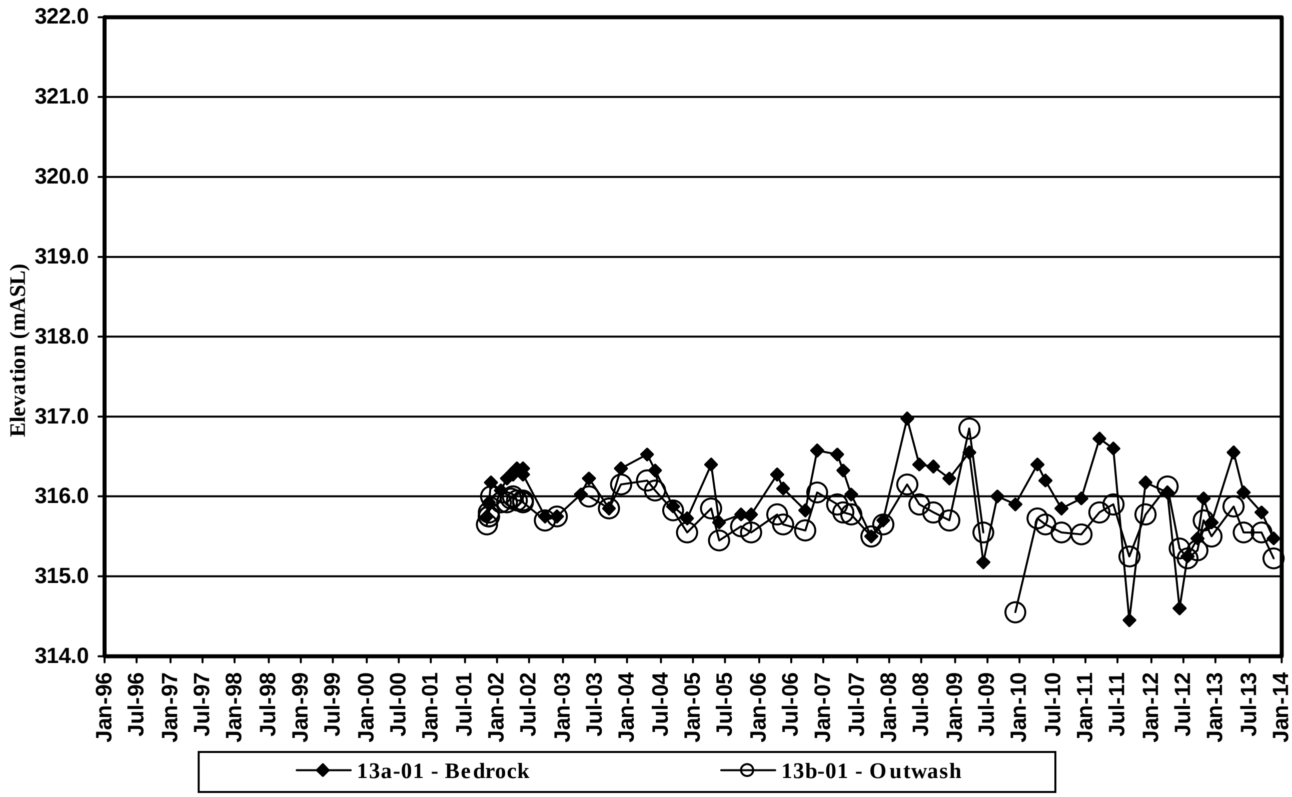
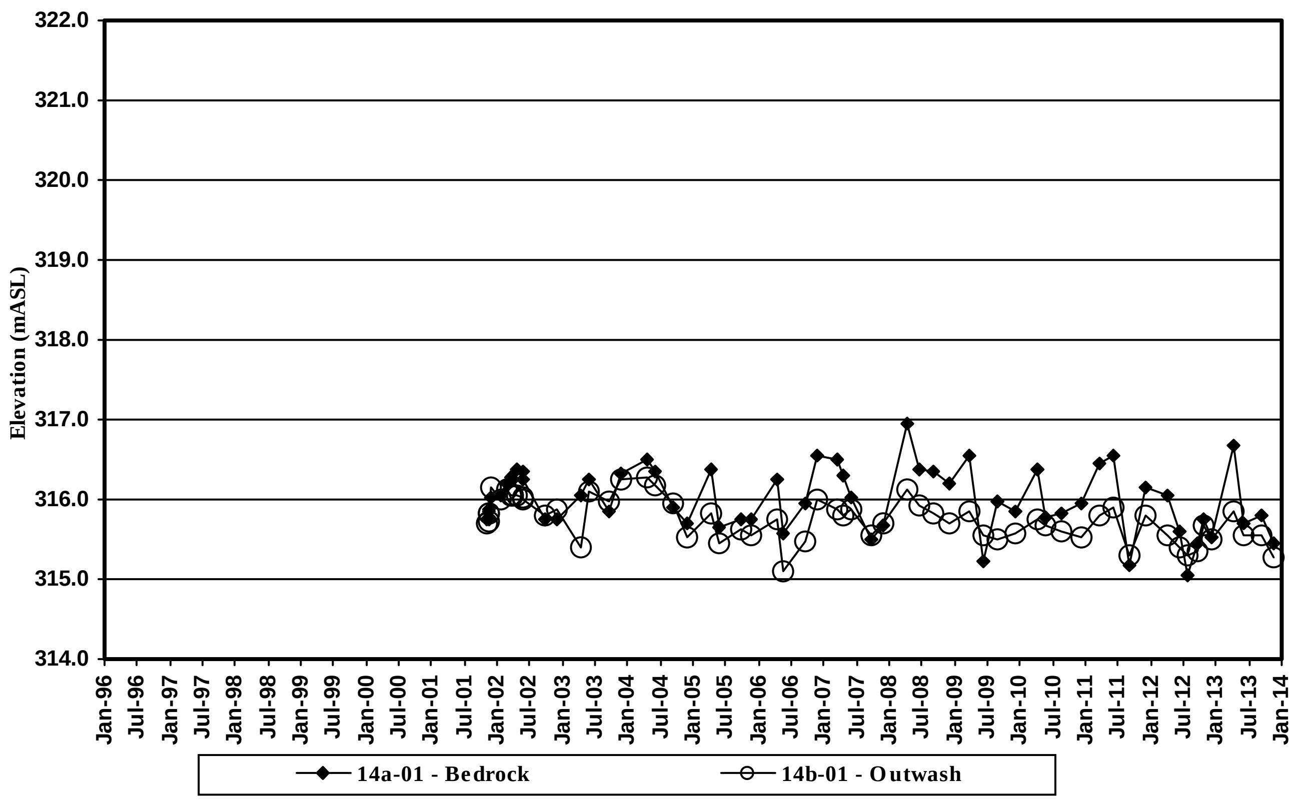
9 Rpt Hydrographs





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Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE
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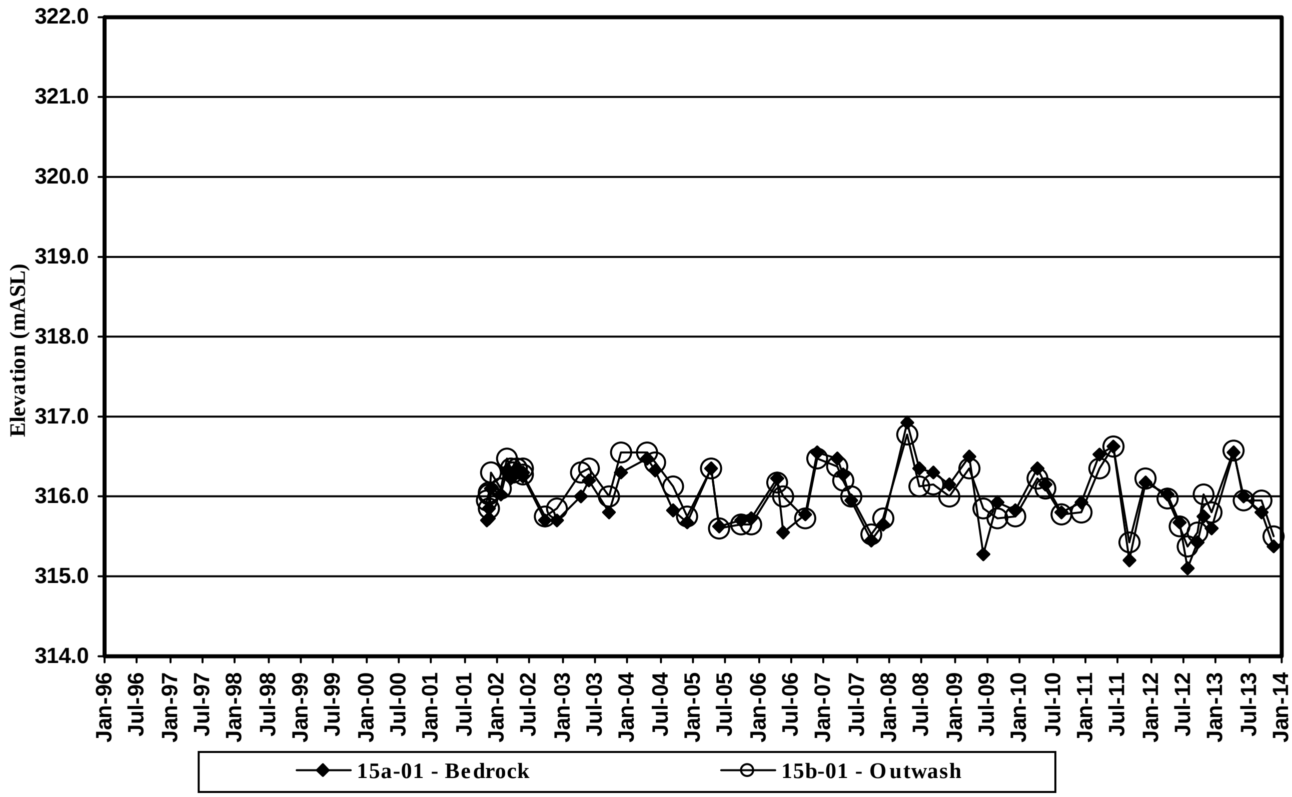
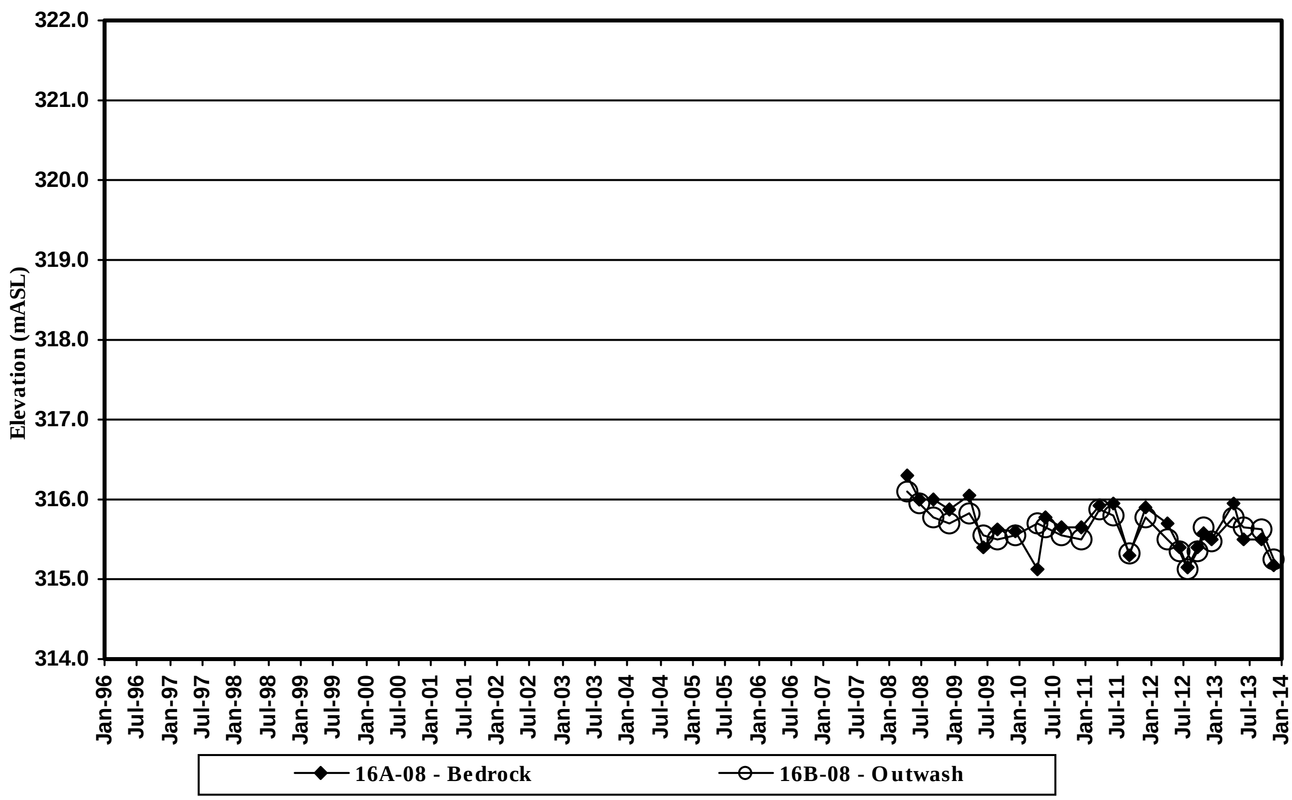
9 Rpt Hydrographs





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Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE

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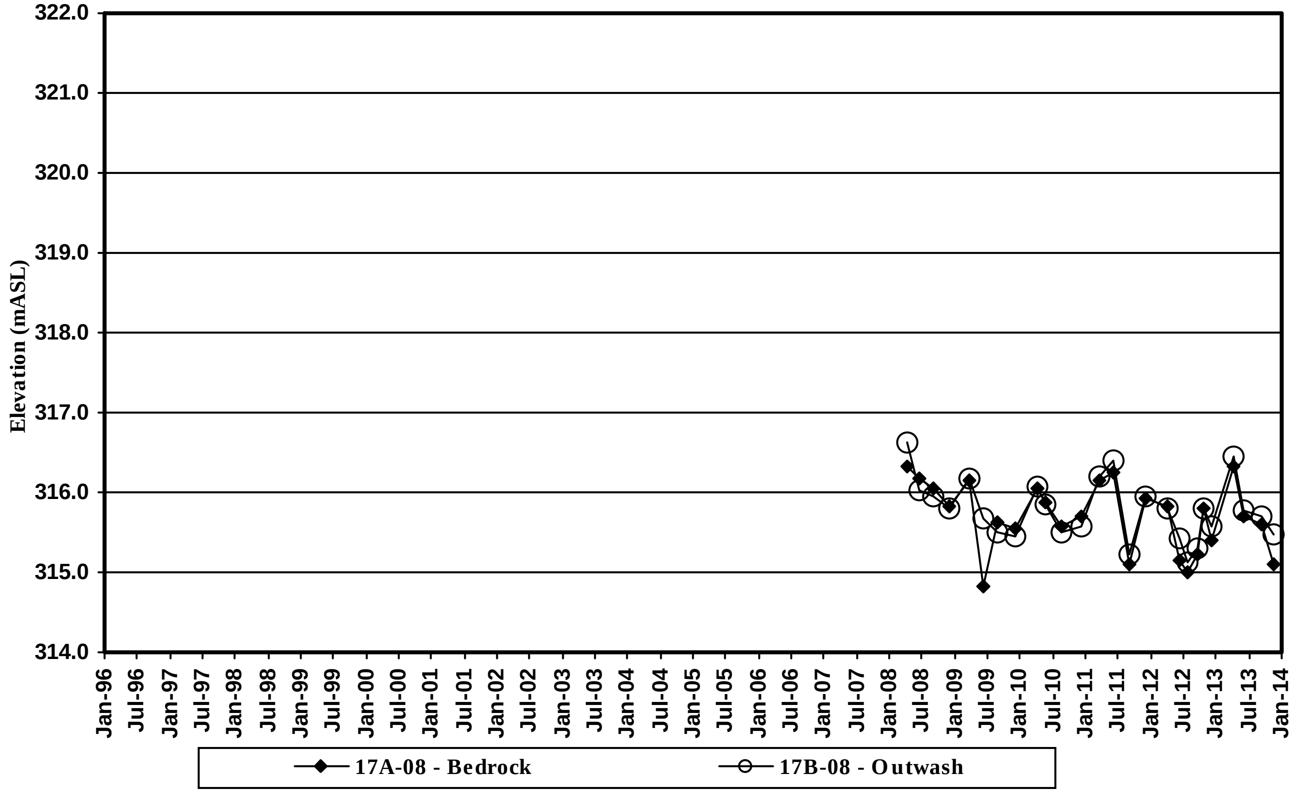
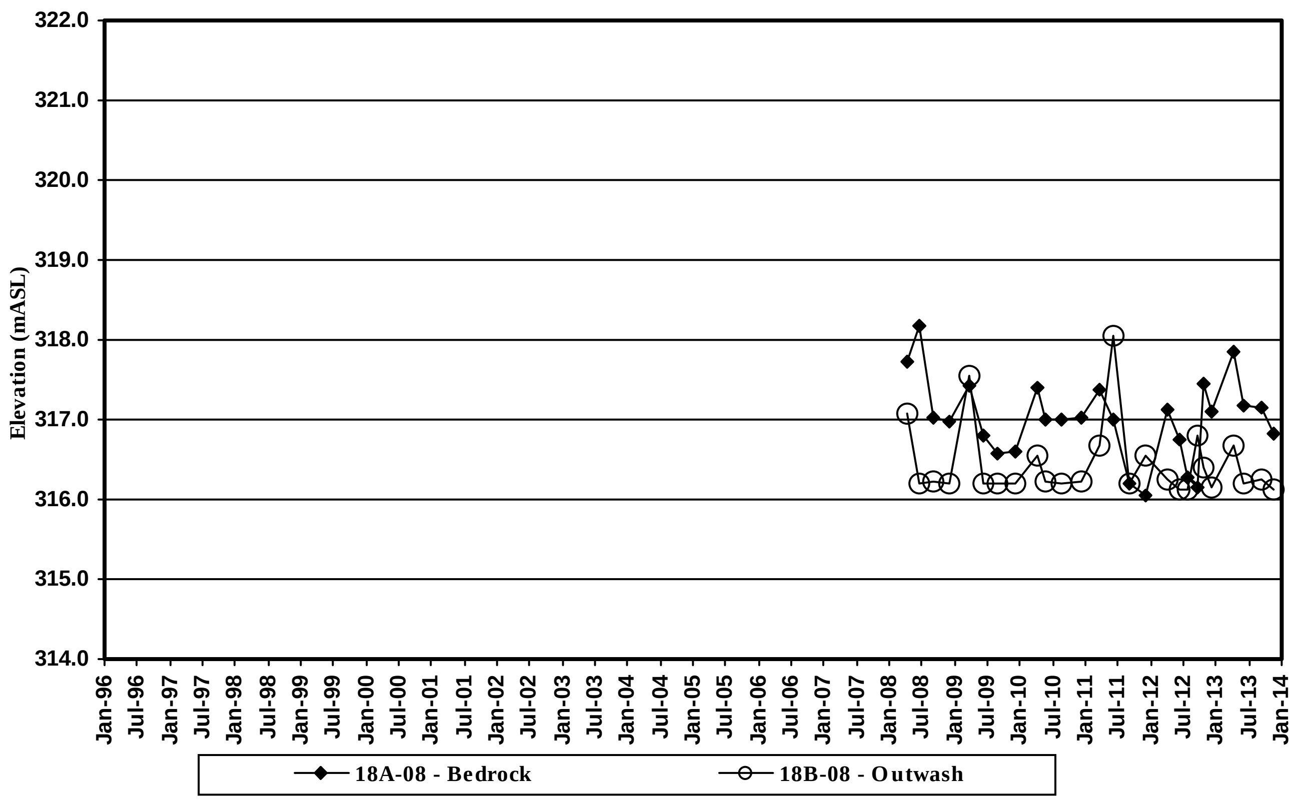
9 Rpt Hydrographs





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Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE
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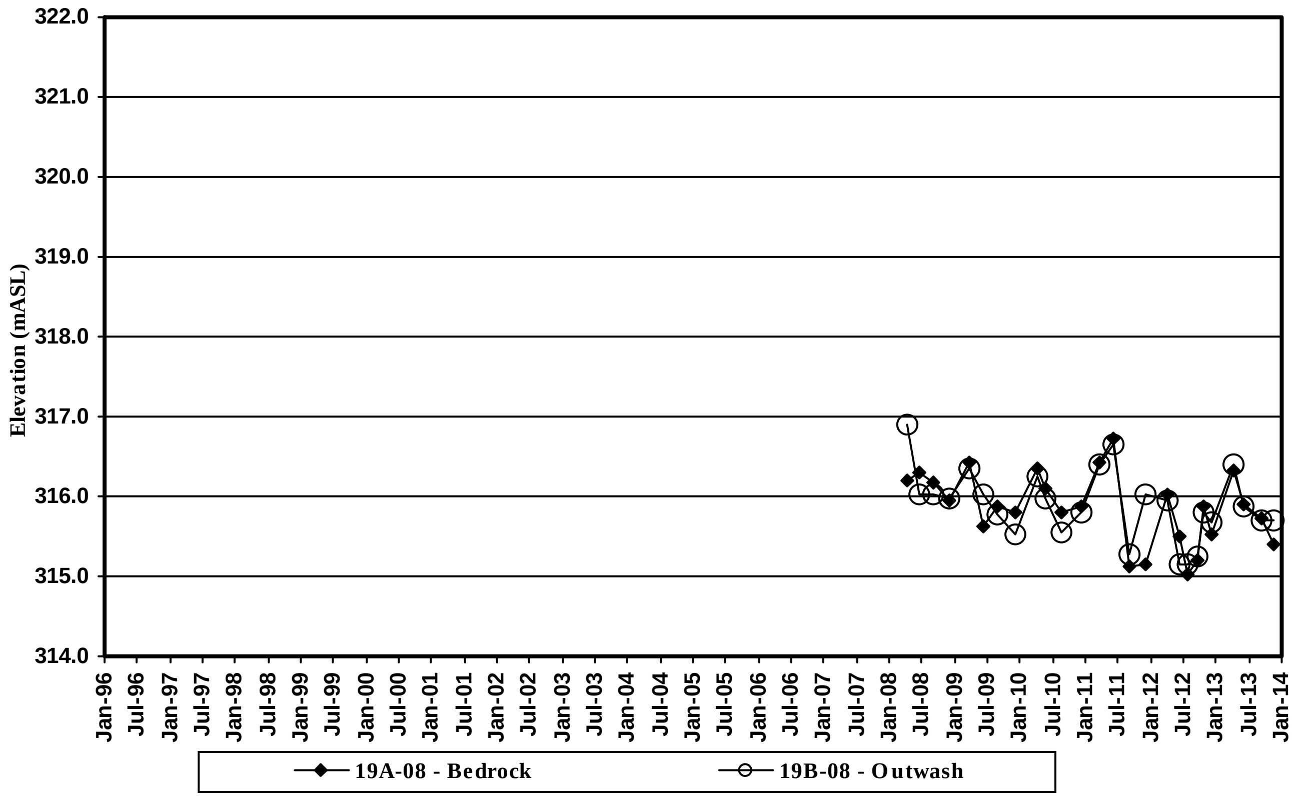
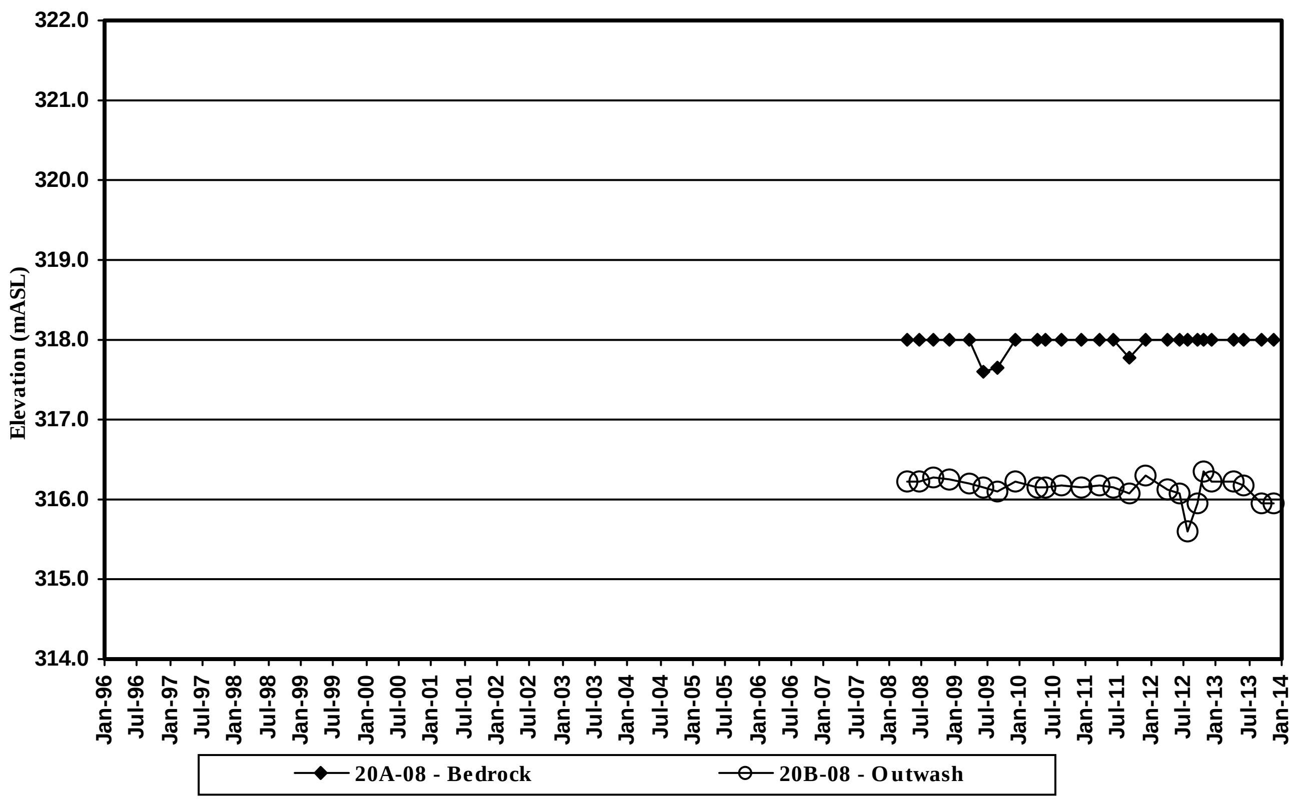
60315291
9 Rpt Hydrographs





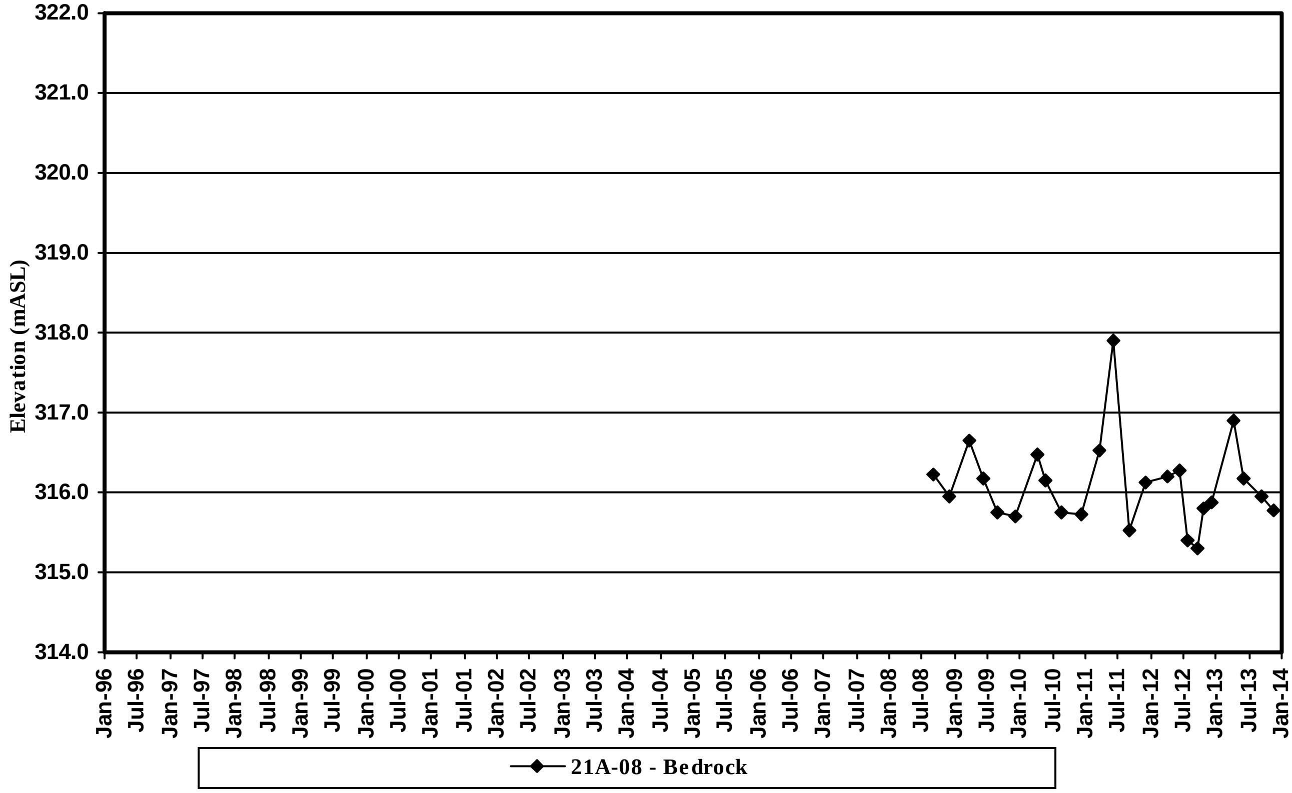
AECOM

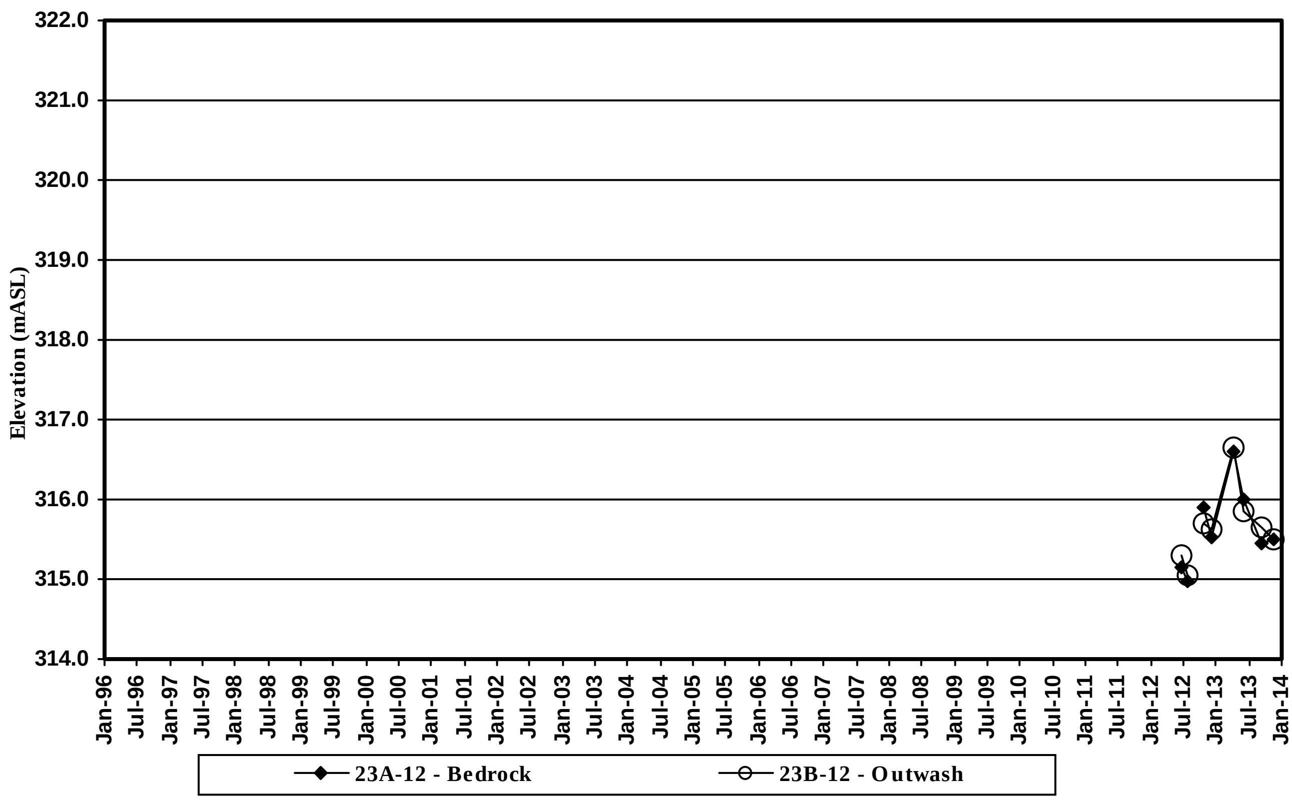
Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE
A - 8

60315291
9 Rpt Hydrographs





AECOM

Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE

A - 9

60315291

9 Rpt Hydrographs

Routine Groundwater Elevations at the WRIC/Waste Transfer Station

AECOM

Date	2a-91	2b-91	5-96	6a-96	6b-96	7-96	8-96	9-96	10-00	11a-00	11b-00	12a-00	12b-00	13a-01	13b-01	14a-01	14b-01
4-Apr-91	316.00	316.02															
14-Apr-91	315.88	315.89															
12-May-91	315.67	315.59															
17-May-91	315.60	315.58															
17-May-94	316.32	316.34															
5-May-95	315.96	316.00															
13-Apr-96	316.22	316.20															
13-Jun-96	316.41	316.34															
21-Aug-96	315.81	315.75															
9-Sep-96	315.59	315.55															
11-Dec-96		315.62															
20-Dec-96			319.53	315.70	315.67	315.70	318.72	315.20									
11-Feb-97	315.31		319.48	315.77	315.78	315.92	318.95	315.96									
3-Mar-97	315.26		320.34	316.37	316.38	316.57	319.37	316.62									
27-Mar-97	315.58	316.27	320.68	316.13	316.13	316.24	319.42	316.24									
6-May-97	315.38	316.08	319.39	315.86	315.86	316.02	318.72	316.04									
23-Jun-97	315.20	315.87	318.47	315.69	315.70	315.81	318.40	315.83									
8-Aug-97	314.86	315.50	317.62	315.39	315.41	315.49	317.85	315.45									
9-Dec-97	314.82	315.55	318.32	315.41	315.41	315.44	317.81	315.52									
31-Mar-98	315.62	316.28	319.90	316.08	316.15	316.22	318.94	316.26									
24-Jun-98	315.07	315.74	318.67	315.60	315.61	315.68	318.26	315.61									
29-Sep-98	314.47	Dry	317.34	315.03	315.08	315.15	317.59	315.11									
3-Dec-98	314.40	Dry	318.24	315.03	315.04	315.02	317.57	315.03									
29-Jun-99	314.91	Dry	320.03	315.51	315.55	315.54	318.33	315.46									
9-Dec-99	315.04	315.60	318.99	315.62	315.63	315.67	318.07	315.68									
21-Jun-00	315.69	316.40	320.17	316.21	316.21	316.34	318.89	316.36									
28-Sep-00	314.95	315.62	318.08	315.51	315.51	315.56	318.16	315.59									
6-Dec-00	314.52	315.43	318.29	315.32	315.32	315.34	317.98	315.35									
22-Mar-01	316.23	316.25	320.11	316.19	316.20	316.23	318.97	316.23	316.09		316.23	316.30	316.30				
26-Apr-01	316.19	316.19	318.53	316.02	316.04	316.17	318.59	316.20	316.07		316.15	316.26	316.26				
28-May-01	315.91	315.91	319.57	315.80	315.83	315.90	318.57	315.92	315.83	316.06	315.90	316.03	316.07				
27-Jun-01	315.68	315.68	318.01	315.56	315.58	315.66	318.04	315.69	315.56	315.85	315.65	315.82	315.88				
31-Jul-01	315.39	NR	317.62	315.32	315.34	315.38	317.80	315.39	315.14	315.34	315.38	315.53	315.58				
30-Aug-01	315.11	NR	317.87	315.09	315.10	315.10	317.76	315.11	314.87	315.11	315.11	315.26	315.31				
28-Sep-01	315.11	NR	319.68	315.14	315.16	315.11	318.26	315.09	314.85	315.08	315.13	315.35	315.48				
19-Oct-01	315.40	NR	320.35	315.45	315.46	315.40	318.54	315.38	315.35	315.50	315.43	315.61	315.71				
8-Nov-01	315.66	NR	319.03	315.62	315.63	315.65	318.17	315.66	315.61	315.85	315.66			315.74	315.64	315.74	315.71
16-Nov-01	315.56	315.71	318.31	315.63	315.65	315.55	317.90	315.71	315.59	315.82	315.69	315.78	315.80	315.89	315.76	315.86	315.83
21-Nov-01	315.57	315.56	318.30	315.61	315.48	315.68	317.99	315.56	315.45	315.66	315.68	315.79	315.80	315.89	315.75	315.88	315.82
27-Nov-01	315.71	315.71	318.88	315.63	315.65	315.70	318.14	315.72	315.61	315.84	315.70	315.67	315.70	315.92	315.79	315.76	315.72
4-Dec-01	315.90	315.89	320.97	315.92	315.93	315.90	318.78	315.89	315.85	316.00	315.92	316.00	316.02	316.17	316.00	316.03	316.14
28-Jan-02	315.85	315.84	318.94	315.77	315.79	315.83	318.63	315.85	315.72	315.98	315.83	315.97	316.00	316.07	315.93	316.04	315.99
28-Feb-02	316.14	316.14	320.56	316.08	316.09	316.12	319.09	316.15	316.04	316.27	316.13	316.14	316.11	316.22	315.92	316.21	316.13
28-Mar-02	316.16	316.16	319.02	316.00	316.02	316.14	318.76	316.17	315.99	316.19	316.12	316.25	316.26	316.27	315.97	316.27	316.05

Routine Groundwater Elevations at the WRIC/Waste Transfer Station

AECOM

Date	2a-91	2b-91	5-96	6a-96	6b-96	7-96	8-96	9-96	10-00	11a-00	11b-00	12a-00	12b-00	13a-01	13b-01	14a-01	14b-01
10-Apr-02														316.27	316.00	316.26	316.05
29-Apr-02	316.40	316.41	320.48	316.08	316.11	316.39	319.05	316.41	316.24	316.43	316.37	316.39	316.43	316.36	315.96	316.37	316.04
28-May-02	316.18	316.18	318.46	316.03	316.05	316.16	318.70	316.20	316.05	316.07	316.33	316.25	316.25	316.35	315.96	316.35	316.03
4-Jun-02	316.11	316.12	318.57	315.98	315.99	316.10	318.69	316.13	315.95	316.19	316.09	316.20	316.21	316.28	315.93	316.26	315.99
30-Sep-02	315.41	315.40	318.85	315.36	315.38	315.40	318.10	315.41	315.30	315.64	315.40	315.56	315.64	315.75	315.70	315.74	315.81
3-Dec-02	315.44	315.43	317.96	315.37	315.39	315.41	317.84	315.44	315.34	315.67	315.43	315.54	315.59	315.76	315.75	315.76	315.87
25-Apr-03	316.10	316.11	318.90	315.92	315.94	316.09	318.49	316.13	315.85	316.04	316.07	316.20	316.21	316.03	N/A	316.05	315.39
2-Jun-03	316.06	316.05	319.15	315.92	315.94	316.05	318.57	316.08	315.86	316.18	316.03	316.14	316.15	316.23	316.01	316.24	316.11
30-Sep-03	315.57	315.57	319.18	315.52	315.53	315.56	318.20	315.56	315.38	315.74	315.57	N/A	N/A	315.85	315.85	315.84	315.97
1-Dec-03	316.12	316.11	320.70	316.09	316.11	316.11	318.67	316.11	315.93	316.15	316.12	N/A	N/A	316.34	316.16	316.33	316.25
27-Apr-04	316.38	316.38	319.88	316.20	316.23	316.42	319.10	316.39	316.14	316.45	316.34	N/A	N/A	316.52	316.19	316.51	316.27
8-Jun-04	316.16	316.20	318.53	316.00	316.02	316.20	318.88	316.20	315.93	316.32	316.15	316.28	316.27	316.33	316.08	316.34	316.18
14-Sep-04	N/A	N/A	318.50	315.49	315.51	315.66	318.19	315.57	315.42	315.85	315.63	315.67	315.72	315.88	315.82	315.89	315.94
30-Nov-04	315.46	315.47	318.97	315.42	315.44	315.50	318.14	315.47	315.29	315.61	315.46	315.63	315.74	315.72	315.54	315.70	315.52
18-Apr-05	316.33	316.35	318.85	316.14	316.16	316.36	318.83	316.37	316.08	316.32	316.29	316.44	316.44	316.40	315.85	316.38	315.82
1-Jun-05	N/A	315.28	318.11	315.34	315.35	315.44	318.08	315.43	315.26	315.57	315.39	315.56	315.63	315.67	315.44	315.66	315.44
30-Sep-05	315.48	315.47	320.58	315.48	315.51	315.52	318.45	315.46	315.36	315.66	315.50	315.69	315.83	315.77	315.63	315.74	315.62
28-Nov-05	315.44	315.48	318.45	315.42	315.44	315.52	317.88	315.49	315.34	315.72	315.49	315.65	315.73	315.77	315.54	315.74	315.54
20-Apr-06	316.12	316.12	319.06	315.96	315.98	316.14	318.87	316.13	315.93	316.23	316.08	316.23	316.24	316.27	315.77	316.26	315.75
1-Jun-06	315.98	315.96	318.51	315.81	315.82	315.99	318.76	N/A	315.77	316.02	315.93	316.11	316.13	316.11	315.64	315.58	315.09
27-Sep-06	315.53	315.52	319.32	315.47	315.49	315.55	318.35	315.53	315.41	315.72	315.51	315.68	315.78	315.83	315.58	315.94	315.48
4-Dec-06	316.39	316.38	320.16	316.35	316.37	316.43	318.84	316.40	316.20	316.20	316.38	316.52	316.49	316.58	316.06	316.55	316.01
30-Mar-07	316.28	316.28	320.23	316.17	316.25	316.32	319.22	316.30	316.15	316.40	316.26	316.44	316.44	316.52	315.90	316.49	315.87
26-Apr-07	316.14	316.15	319.03	315.98	316.01	316.17	318.95	316.16	316.00	316.22	316.10	316.27	316.28	316.32	315.80	316.31	315.80
14-Jun-07	315.77	315.79	318.11	315.66	315.67	315.81	318.66	315.81	315.68	315.93	315.75	315.92	315.95	316.03	315.78	316.02	315.88
27-Sep-07	315.18	Dry	318.11	315.12	315.14	315.21	317.90	315.18	315.08	315.39	315.18	315.30	315.33	315.51	315.49	315.49	315.55
5-Dec-07	315.36	Dry	320.31	315.36	315.37	315.40	318.65	315.35	315.26	315.58	315.37	315.57	315.72	315.69	315.65	315.68	315.70
25-Apr-08	316.84	316.84	319.02	316.54	316.63	316.82	319.31	316.86	316.62	316.86	316.76	316.91	316.87	316.98	316.16	316.96	316.12
25-Jun-08	316.05	316.04	320.44	316.05	316.10	316.10	318.74	315.53	315.94	316.28	316.07	316.19	316.27	316.41	315.89	316.38	315.92
18-Sep-08	316.03	315.98	319.68	315.95	316.01	316.03	318.72	316.03	315.94	316.24	315.98	316.09	316.13	316.37	315.81	316.36	315.82
9-Dec-08	315.83	315.78	318.91	315.75	315.77	315.82	318.47	315.80	315.76	316.04	315.78	315.89	315.96	316.22	315.70	316.19	315.70
2-Apr-09	316.29	316.29	319.06	316.14	316.18	316.31	319.14	316.31	316.16	316.43	316.24	316.41	316.40	316.56	316.86	316.55	315.84
24-Jun-09	315.83	315.83	318.36	315.63	315.66	315.85	318.85	315.83	315.31	315.38	315.79	315.98	316.01	315.18	315.54	315.22	315.56
10-Sep-09	315.53	315.52	317.84	315.42	315.52	315.56	318.05	315.53	315.50	315.82	315.51	315.62	315.67	316.00	damaged	315.98	315.51
15-Dec-09	315.45	315.48	319.73	315.44	315.49	315.50	318.25	315.51	315.40	315.76	315.48	315.63	315.75	315.91	314.55	315.86	315.57
22-Apr-10	316.17	316.16	318.71	315.98	316.01	316.00	318.54	N/A	N/A	316.30	316.11	316.27	316.26	316.41	315.73	316.38	315.76
1-Jun-10	315.91	315.91	317.59	315.78	315.80	315.97	318.40	N/A	N/A	316.08	315.88	315.97	316.01	316.21	315.65	315.77	315.67
1-Sep-10	315.49	315.50	320.13	315.44	315.44	315.54	318.37	N/A	N/A	315.74	315.50	315.61	315.73	315.86	315.56	315.83	315.60
16-Dec-10	315.62	315.61	318.17	315.53	315.55	315.66	318.00	N/A	N/A	315.85	315.59	316.50	315.77	315.98	315.53	315.95	315.53
5-Apr-11	316.11	315.95	318.48	315.79	315.96	315.89	318.58	N/A	N/A	316.38	316.16	316.42	316.21	316.72	315.80	316.45	315.81
14-Jun-11	316.57	316.58	318.54	316.42	316.51	316.65	319.19	N/A	N/A	316.58	316.58	316.69	316.67	316.61	315.89	316.56	315.91
16-Sep-11	315.20		317.67	315.14	315.22	315.24	318.03	N/A	N/A	315.18	315.20	315.51	315.61	314.45	315.26	315.18	315.31
13-Dec-11	315.93	315.93	319.36	315.84	316.02	315.95	318.24	N/A	N/A	316.07	315.90	316.09	316.22	316.17	315.77	316.14	315.80
12-Apr-12	315.90	315.90	318.07	315.76	315.84	315.92	318.75	N/A	N/A	316.00	315.86	316.04	316.06	316.06	316.13	316.04	315.54

Routine Groundwater Elevations at the WRIC/Waste Transfer Station

AECOM

Date	2a-91	2b-91	5-96	6a-96	6b-96	7-96	8-96	9-96	10-00	11a-00	11b-00	12a-00	12b-00	13a-01	13b-01	14a-01	14b-01
18-Jun-12	315.77	315.49	318.03	315.36	315.38	315.52	318.34	N/A	N/A	315.61	315.47	315.63	315.70	314.61	315.35	315.60	315.40
5-Jul-12																	
7-Aug-12	315.33	dry	318.50	315.08	315.09	315.15	318.07	315.17	314.94	315.07	315.13	315.30	315.39	315.26	315.22	315.06	315.31
27-Sep-12	315.08	Dry	318.54	315.25	315.29	315.30	318.07	315.13	315.13	315.20	315.27	315.25	315.52	315.48	315.32	315.44	315.36
2-Nov-12	315.53	315.53	320.85	315.80	315.85	315.76	319.04	315.57	315.41	315.72	315.75	315.76	315.87	315.98	315.69	315.75	315.68
17-Dec-12	315.60	315.61	319.63	315.56	315.60	315.68	318.28	315.68	315.51	315.57	315.61	315.82	315.92	315.67	315.50	315.52	315.49
26-Apr-13	316.63	316.63	319.76	316.36	316.46	316.64	319.29	316.69	316.47	316.51	316.57	316.69	316.70	316.56	315.88	316.67	315.85
17-Jun-13	315.87	315.84	318.42	315.73	315.74	315.87	318.75	315.89	315.85	315.94	315.81	315.99	316.02	316.04	315.56	315.71	315.56
25-Sep-13	315.71	315.72	318.86	315.63	315.64	315.72	318.59	315.74	315.69	315.75	315.67	315.85	315.91	315.81	315.54	315.80	315.55
1-Dec-13	315.67	315.56	317.71	315.63	315.70	315.46	318.34	315.87	315.55	315.43	315.43	313.62	315.49	315.48	315.22	315.44	315.27

AECOM

Date	15a-01	15b-01	16a-08	16b-08	17a-08	17b-08	18a-08	18b-08	19a-08	19b-08	20a-08	20b-08	21a-08	22a-11	22b-11	23a-12	23b-12
4-Apr-91																	
14-Apr-91																	
12-May-91																	
17-May-91																	
17-May-94																	
5-May-95																	
13-Apr-96																	
13-Jun-96																	
21-Aug-96																	
9-Sep-96																	
11-Dec-96																	
20-Dec-96																	
11-Feb-97																	
3-Mar-97																	
27-Mar-97																	
6-May-97																	
23-Jun-97																	
8-Aug-97																	
9-Dec-97																	
31-Mar-98																	
24-Jun-98																	
29-Sep-98																	
3-Dec-98																	
29-Jun-99																	
9-Dec-99																	
21-Jun-00																	
28-Sep-00																	
6-Dec-00																	
22-Mar-01																	
26-Apr-01																	
28-May-01																	
27-Jun-01																	
31-Jul-01																	
30-Aug-01																	
28-Sep-01																	
19-Oct-01																	
8-Nov-01	315.70	315.95															
16-Nov-01	315.84	316.06															
21-Nov-01	315.84	316.02															
27-Nov-01	315.72	315.86															
4-Dec-01	316.11	316.30															
28-Jan-02	316.02	316.10															
28-Feb-02	316.32	316.47															
28-Mar-02	316.23	316.34															

Routine Groundwater Elevations at the WRIC/Waste Transfer Station

AECOM

Date	15a-01	15b-01	16a-08	16b-08	17a-08	17b-08	18a-08	18b-08	19a-08	19b-08	20a-08	20b-08	21a-08	22a-11	22b-11	23a-12	23b-12
10-Apr-02	316.24	316.31															
29-Apr-02	316.33	316.35															
28-May-02	316.30	316.34															
4-Jun-02	316.24	316.27															
30-Sep-02	315.69	315.75															
3-Dec-02	315.71	315.86															
25-Apr-03	316.01	316.31															
2-Jun-03	316.19	316.35															
30-Sep-03	315.80	315.99															
1-Dec-03	316.29	316.56															
27-Apr-04	316.48	316.56															
8-Jun-04	316.33	316.43															
14-Sep-04	315.83	316.13															
30-Nov-04	315.67	315.74															
18-Apr-05	316.36	316.34															
1-Jun-05	315.62	315.59															
30-Sep-05	315.70	315.66															
28-Nov-05	315.72	315.66															
20-Apr-06	316.23	316.17															
1-Jun-06	315.54	316.00															
27-Sep-06	315.77	315.72															
4-Dec-06	316.54	316.48															
30-Mar-07	316.48	316.37															
26-Apr-07	316.27	316.19															
14-Jun-07	315.96	315.99															
27-Sep-07	315.45	315.52															
5-Dec-07	315.65	315.72															
25-Apr-08	316.92	316.77	316.30	316.09	316.33	316.62	317.72	317.07	316.19	316.89	318.01	316.22					
25-Jun-08	316.35	316.12	316.00	315.95	316.18	316.02	318.17	316.21	316.31	316.03	318.01	316.23					
18-Sep-08	316.31	316.16	316.01	315.78	316.05	315.95	317.03	316.22	316.18	316.02	318.01	316.27	316.23				
9-Dec-08	316.16	316.00	315.88	315.69	315.83	315.79	316.98	316.21	315.95	315.98	318.01	316.25	315.96				
2-Apr-09	316.51	316.34	316.05	315.82	316.15	316.17	317.42	317.56	316.43	316.36	318.01	316.20	316.64				
24-Jun-09	315.28	315.86	315.40	315.55	314.82	315.67	316.79	316.21	315.62	316.03	317.59	316.14	316.17				
10-Sep-09	315.92	315.73	315.63	315.50	315.62	315.49	316.57	316.21	315.88	315.78	317.64	316.10	315.75				
15-Dec-09	315.83	315.76	315.61	315.56	315.54	315.46	316.59	316.20	315.80	315.53	318.01	316.22	315.70				
22-Apr-10	316.35	316.23	315.13	315.71	316.05	316.07	317.40	316.54	316.36	316.24	318.01	316.16	316.48				
1-Jun-10	316.15	316.10	315.77	315.65	315.88	315.84	317.00	316.22	316.11	315.98	318.01	316.15	316.15				
1-Sep-10	315.80	315.77	315.66	315.56	315.57	315.51	317.00	316.20	315.79	315.56	318.01	316.17	315.75				
16-Dec-10	315.92	315.81	315.64	315.51	315.69	315.58	317.02	316.22	315.87	315.81	318.01	316.14	315.73				
5-Apr-11	316.53	316.34	315.93	315.88	316.14	316.20	317.37	316.67	316.42	316.40	318.01	316.18	316.52				
14-Jun-11	316.63	316.63	315.96	315.81	316.25	316.40	316.99	318.05	316.73	316.66	318.01	316.16	317.91				
16-Sep-11	315.19	315.42	315.29	315.32	315.09	315.22	316.19	316.19	315.13	315.28	317.77	316.07	315.52				
13-Dec-11	316.17	316.22	315.90	315.77	315.93	315.96	316.06	316.55	315.15	316.03	318.01	316.31	316.12	316.64	315.95		
12-Apr-12	316.02	315.98	315.70	315.50	315.83	315.81	317.12	316.25	316.02	315.94	318.01	316.12	316.19	315.77	315.73		

Routine Groundwater Elevations at the WRIC/Waste Transfer Station

AECOM

Date	15a-01	15b-01	16a-08	16b-08	17a-08	17b-08	18a-08	18b-08	19a-08	19b-08	20a-08	20b-08	21a-08	22a-11	22b-11	23a-12	23b-12
18-Jun-12	315.68	315.63	315.41	315.35	315.15	315.42	316.75	<316.13	315.50	<315.16	318.01	316.08	316.27	315.29	315.39		
5-Jul-12																315.15	315.29
7-Aug-12	315.10	315.37	315.16	315.12	314.99	315.13	316.27	<316.13	315.02	<315.16	318.01	315.60	315.41	314.99	315.16	314.97	315.04
27-Sep-12	315.42	315.56	315.39	315.34	315.23	315.29	316.15	316.81	315.20	315.24	318.01	315.94	315.31	315.31	315.28	NA	NA
2-Nov-12	315.75	316.03	315.58	315.65	315.81	315.81	317.44	316.41	315.88	315.80	318.01	316.35	315.81	315.81	315.81	315.89	315.70
17-Dec-12	315.61	315.81	315.51	315.47	315.41	315.58	317.10	316.14	315.52	315.68	318.01	316.22	315.88	315.62	315.49	315.53	315.63
26-Apr-13	316.54	316.58	315.94	315.78	316.32	316.44	317.84	316.68	316.32	316.41	318.01	316.22	316.90	316.34	316.28	316.60	316.65
17-Jun-13	315.99	315.95	315.49	315.66	315.69	315.77	317.18	316.19	315.91	315.88	318.01	316.17	316.17	315.81	315.76	315.99	315.85
25-Sep-13	315.79	315.95	315.49	315.63	315.61	315.69	317.15	316.24	315.73	315.70	318.01	315.96	315.94	315.68	315.65	315.45	315.65
1-Dec-13	315.38	315.50	315.18	315.26	315.11	315.47	316.83	<316.13	315.41	315.69	318.01	315.94	315.77	315.41	315.30	315.49	315.50

Appendix B

Groundwater Chemistry and Time-Concentration Plots – Routine and Organics

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

	Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
Monitor	07-Nov-91	EPL	7.2	609	297	32	8.1						25.6		10.5	2.9	96.7	< 0.005	0.03	< 0.09	< 0.005	< 0.03	17.7
1a-91	04-Mar-92	EPL	7.09	647	300	31.8	7.9						26.2		9.23	3.14	94.7	0.026	0.03	1.13	0.017	< 0.03	17.9
Lower Til	07-Mar-92	EPL	7.63	721	234	35.5	8.1						27.3		14.1	2.72	89.1	< 0.005	< 0.01	< 0.06	< 0.005	< 0.03	27.5
	17-May-94	EPL	7.76	703	242	31.6	5.5					< 0.05	28.7		12.6	2.41	97.6	0.101	0.02	< 0.06	0.024	< 0.03	22.6
	05-May-95	MDS	7.6	689	250	32.5	5.2					< 0.05	31.7		17.3	2.67	102	0.012	0.02	< 0.06	< 0.005	< 0.03	21.3
Monitor	07-Nov-91	EPL	7.3	753	280	40	15						37.4		23.9	3.5	111	0.074	0.05	< 0.09	< 0.005	< 0.03	33.1
1b-91	04-Mar-92	EPL	7.31	733	227	34.9	13.6						34.1		10.5	2.95	97.2	0.265	0.05	0.7	0.022	< 0.03	32.3
Outwash	07-Mar-92	EPL	7.64	740	224	34.1	14.6						33.6		20.7	3.01	97.8	0.022	0.04	< 0.06	0.01	< 0.03	27.2
	17-Mar-94	EPL	7.74	521	225	23	11.4					< 0.05	15.6		5.45	2.01	67.7	0.064	0.03	< 0.06	0.009	< 0.03	8.76
	05-May-95	MDS	7.85	398	138	16.4	7.4					< 0.05	19.7		26.9	10.9	46.1	0.033	0.03	< 0.06	< 0.005	< 0.03	5.01

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

Monitor
2a-91
Lower Til

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
07-Nov-91	EPL	7.78	434	215	28	2.8						17.1		24.5	32	35	0.11	0.06	< 0.09	< 0.005	< 0.03	0.98
04-Mar-92	EPL	7.61	494	229	28.7	3.6						20		21.3	34.7	36.9	0.313	0.07	1.14	0.009	0.37	1.67
07-Mar-92	EPL	7.88	479	209	28.3	1.4						16.2		15.2	30.6	36.6	0.018	0.06	< 0.06	< 0.005	0.16	1.99
17-May-94	EPL	7.99	462	236	24.3	0.9					< 0.05	10.5		10.5	39.6	30.4	0.204	0.07	< 0.06	< 0.005	< 0.03	0.08
05-May-95	MDS	8.02	437	210	20.9	1					< 0.05	11.7		8.92	45.5	28	0.054	0.07	< 0.06	< 0.005	< 0.03	0.47
13-Apr-96	ENT	8.31	424	220	29	1.82				0.45		19.8	< 0.5	8.1	30	49.3	0.23	0.093		0.01	< 0.06	< 0.05
13-Jun-96	ENT	8.27	331	234	26.5	2.61				0.159		18.9	< 0.5	7.5	32	43.3	< 0.01	0.11		< 0.01	< 0.06	0.4
21-Aug-96	ENT	7.7	454	237	26.9	2.1				0.22		19.9	1	7.5	33.3	43.9	< 0.01	0.11		< 0.01	< 0.06	1.27
18-Sep-96	ENT	8.11	363	226	31.4	1.9				0.03		18	< 0.5	6.4	31.4	41.1	< 0.01	0.146		< 0.01	< 0.06	1.08
11-Feb-97	WBL	7.9			23.8	1.7	< 0.34	8	0.17	0.021	< 0.011	48.4	< 0.72	119	27.1	45.6	0.796	0.057	0.048	0.028		
26-Mar-97	WBL	8.18	514	235	27.7	2.29	< 0.34	17	0.16	0.089	< 0.011	25.2	< 0.72	5.8	26.2	51	0.672	0.07	< 0.028	0.021		
25-Jun-97	WBL	8.24	471	226	21.8	1.43	1.89	< 7	0.33	0.26	< 0.011	18.8	< 0.72	5.33	24	36.5	0.069	0.066	< 0.028	0.016		
01-Oct-97	WBL	8.1	441	227	22.6	1.63	0.66	14	0.33	0.176	< 0.011	16.3	< 0.72	5.13	26.9	38.6	0.477	0.055	< 0.028	0.017		
11-Dec-97	WBL	8.12	450	225	22.2	1.92	< 0.34	33	0.34	0.108	< 0.011	16.7	< 0.72	4.97	29.5	38.6	1.28	0.055	< 0.028	0.042		0.22
31-Mar-98	WBL	8.05	455	227	21.3	1.77	1.03			0.212		16.3	< 0.72	6.47	24.2	44.8	1.14	0.055	< 0.011	0.022		0.58
24-Jun-98	WBL	8.06	463	230	21.2	1.39	0.9			0.177		17	< 0.72	4.92	26.7	42	0.176	0.103	< 0.006	0.01		0.8
02-Oct-98	CAN	8	500	240	25	< 1	2	< 5	0.17	< 0.1	0.08	19	< 1	4.8	31	41	0.6	0.05		0.02		0.71
03-Dec-98	CAN	7.9	490	240	23	< 1	< 2	< 5	0.2	< 0.1	0.12	17	< 2	4.9	30	36	< 0.05	0.05		< 0.01		0.4
29-Jun-99	Barr	8.45	440	220	24.2	2	1.5	9	0.33	0.24	0.025	15.8		5.9	28.7	38	0.39	0.05	< 0.1	0.017		
09-Dec-99	Barr	8.04	454	221	23.2	1.4	0.7	14	0.46	0.23	0.009	15	< 1	< 5	32.3	34.5	0.02	0.07	< 0.1	< 0.005		
21-Jun-00	Philip	7.88	441	231	21.6	1.2	1	< 5	0.46	0.31	0.005	15.3	< 1	5.1	25.6	35.8	< 0.03	0.042	< 0.05	< 0.005		
07-Dec-00	Philip	8.15	388	236	22.6	1.1	1.1	10	0.47	0.25	0.011	17.8	< 1	5.2	27.8	35.7	0.21	0.094		0.11		
27-Jun-01	Philip	7.9	456	236	23	1	1.9	< 5	0.34	0.22	0.018	22.4	< 1	4.8	29.4	38.2	0.06	0.13	< 0.1	0.135		
03-Dec-01	Philip	8.19	457	241	20.3	1.6	1	< 5	0.23	0.07	0.028	18.1	< 1	4.2	30.4	33.3	0.03	0.07	< 0.1	0.038		
04-Jun-02	Philip	8.44	443	266	23.4	1	0.6	8	0.66	0.13	0.016	15.2	< 1	3.6	25.7	39.6	< 0.01	0.06	< 0.1	0.007		
03-Dec-02	Philip	8.27	466	230	24.4	2	< 0.5	17	0.94	0.07	0.01	14.7	< 1	3.3	27.1	42.3	0.01	0.05	< 0.1	< 0.005		
02-Jun-03	Philip	8.14	460	220	23.7	1	< 0.5	9	0.67	0.17	< 0.001	15.7	20	4.6	25.8	40.4	< 0.01	0.06		< 0.005		
01-Dec-03	Philip	8.21	415	225	24.5	1.1	1	6	0.25	< 0.03	0.015	20.1	< 1	4.4	24.6	40.8	0.03	0.06	< 0.1	< 0.005		
09-Jun-04	Philip	8.11	459	234	22	< 1	0.7	6	0.36	0.07	0.01	20.9	1	5.2	36.8	36.6	< 0.01	0.06		0.03	< 0.20	0.7
30-Nov-04	Philip	8.04	452	241	23.5	1	< 0.5	5	0.23	0.03	0.005	15.5	< 1	4.3	27.5	38.4	< 0.01	0.05		< 0.005		
03-Aug-05	N/A																					
28-Nov-05	Maxx	8.24	433	233	25		< 2	14	0.8	0.14	< 0.02	15	< 1	4	32	4	< 0.05	0.061	< 0.05	0.005		
01-Jun-06	MAX	8.2	510	254	27	1.4	< 2	6	0.8	0.24	< 0.02	15	< 1	7	28	48	< 0.02	0.061	< 0.05	< 0.005		
04-Dec-06	MAX	8.2	511	256	26	1.3	< 2	< 4	0.5	0.23	< 0.02	18	< 1	6	30	43	< 0.02	0.061	< 0.05	< 0.005		
30-Mar-07	MAX	8.3	477	241	22	1.2	< 2	4	0.4	0.21	< 0.02	16	< 1	6	32	39	< 0.02	0.063	< 0.05	< 0.005		
14-Jun-07	MAX	8.3	501	249	28	1.4	2	5	0.3	0.16	0.04	19	< 1	6	37	42	< 0.02	0.071	< 0.05	< 0.005		
05-Dec-07	MAX	8.3	448	229	23	1.3	< 2	8	0.2	0.12	< 0.02	13	< 1	4	24	40	< 0.02	0.05	< 0.1	< 0.005	< 0.01	0.1
25-Jun-08	MAX	8.4	446	226	23	1.4		13	0.5	0.25	< 0.02	13	< 1	5	33	38	< 0.02	0.059	< 0.1	< 0.005	< 0.01	0.1
09-Dec-08	MAX	8.1	460	236	21	1.1	< 2	4	0.3	0.09	0.03	16	< 1	3	29	39	< 0.02	0.064	< 0.1	< 0.005	< 0.01	< 0.1
25-Jun-09	MAX	8.1	486	244	27	1.4	< 2	6	0.5	0.25	< 0.02	16	< 1	4	31	44	< 0.02	0.067	< 0.1	< 0.005	< 0.01	0.8
16-Dec-09	MAX	8.2	439	227	24	1.3	< 2	4	0.4	0.2	< 0.02	10	< 1	3	22	42	< 0.02	0.055	< 0.1	< 0.005	< 0.01	< 0.1
29-Jun-10	MAX	8.1	456	226	23	1.2	< 2	11	0.6	0.29	< 0.02	12	< 1	4	25	40	< 0.02	0.064	< 0.1	< 0.005	< 0.01	0.4
22-Dec-10	MAX	8.07	452	238	26	1.2	< 2	< 4	0.2	< 0.05	< 0.02	7	< 1	4	22	45	< 0.02	0.05	< 0.1	0.013	< 0.01	0.1
16-Jun-11	MAX	8.11	493	246	26	1.4	< 2	13	0.5	0.3	< 0.02	15	< 1	3	27	47	0.02	0.057	< 0.1	< 0.005	0.03	0.9
15-Dec-11	MAX	8.11	552	271	28	1.4	< 2	< 4	0.9	0.09	0.17	22	< 1	4	29	52	2	0.062	< 0.1	0.06	0.06	0.4
18-Jun-12	MAX	8.13	520	260	27	1.3	< 2	10	0.26	< 0.05	0.05	22	< 1	3	25	49	2.3	0.053	< 0.1	0.011	< 0.01	0.18
17-Dec-12	MAX	7.98	640	330	35	1.5	< 2	< 4	0.45	0.066	0.086	31	< 1	4	32	62	2.8	0.054	< 0.1	0.011	< 0.01	0.52
18-Jun-13	MAX	8.18	620	300	31	1.5	< 2	4.9	0.25	0.052	0.12	29	< 1	3	33	61	2.3	0.061	< 0.1	0.007	< 0.01	0.14
05-Dec-13	MAX	7.97	700	340	38	1.6	< 2	18	3	0.1	0.86	34	< 1	5	32	73	< 0.02	0.059	< 0.1	< 0.005	< 0.01	0.74

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

	Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
Monitor	07-Mar-92	EPL	8	499	154	26.3	0.4						28.1		18.1	3.56	63.8	< 0.005	< 0.01	< 0.06	< 0.005	< 0.03	13.3
2b-91	17-May-94	EPL	7.9	587	208	31.4	2					< 0.05	34		8.69	9.44	63.9	0.054	0.01	< 0.06	< 0.005	< 0.03	< 0.03
Outwash	05-May-95	MDS	7.95	530	179	28.3	0.6					< 0.05	25.5		8.59	3.69	68.9	0.019	< 0.01	< 0.06	< 0.005		17.2
	13-Apr-96	ENT	7.91	425	169	26.8	0.908				0.01		30.3	< 0.5	11.6	4.1	67.9	< 0.01	0.42		< 0.01	< 0.06	< 0.05
	13-Jun-96	ENT	8.34	337	177	25.1	0.8				0.016		28.2	0.1	7.5	3.9	60.3	< 0.01	0.052		< 0.01	< 0.06	11
	21-Aug-96	ENT	8.16	373	167	22.8	1.14				0.06		26.2	1	6.7	3.63	59.6	< 0.01	0.05		< 0.01	< 0.06	11.2
	18-Sep-96	ENT	7.93	377	216	22.9	0.9				< 0.01		26	< 0.5	6.5	2.9	60.2	< 0.01	0.067		< 0.01	< 0.06	11.5
	11-Dec-96	ENT	8.19	459	208	21.1	1.1				0.04		26.7	< 0.5	7.2	4.6	51	< 0.01	0.017		0.01	< 0.06	11.4
	27-Mar-97	WBL	8.14	543	180	26.8	0.69	< 0.34	18	0.24	< 0.01	0.014	25.8	< 0.72	10.5	2.4	71.9	0.088	0.028	< 0.028	0.013		
	31-Mar-98	WBL	7.92	556	183	25.8	0.78	1.03			< 0.019		23.2	1.34	16.2	3.88	74.8	0.111	< 0.016	0.024	0.012		15.7
	24-Jun-98	Dry																					
	02-Oct-98	Dry																					
	03-Dec-98	Dry																					
	09-Dec-99	Barr	7.77	463	166	23.9	< 1	0.9	14	0.4	0.43	0.005	27	< 1	17	3.6	53.2	< 0.01	< 0.01	< 0.1	0.016		
	21-Jun-00	Philip	7.89	401	184	24.5	0.7	< 0.5	< 5	0.23	< 0.03	< 0.002	25.5	< 1	8.1	4	58.2	< 0.03	< 0.005	< 0.05	< 0.005		
	07-Dec-00	INS																					
	27-Jun-01	INV																					
	03-Dec-01	INV																					
	04-Jun-02	Philip	8.22	362	176	21.8	< 1	1.1	15	1.01	< 0.03	0.006	19.1	< 1	5.5	1.8	52.2	< 0.01	0.01	< 0.1	0.015		
	03-Dec-02	INS																					
	02-Jun-03	Philip	8	444	182	23.1	< 1	1.4	14	0.74	< 0.03	< 0.001	15	6	4.8	2.2	54.4	< 0.01	< 0.01		0.019		
	01-Dec-03	Philip	8.16	501	190	25	< 1	< 0.5	10	0.51	< 0.03	0.004	23	< 1	8.4	2.9	61.4	< 0.01	0.01	< 0.1	0.008		
	08-Jun-04	Philip	7.83	550	256	31.2	< 1	< 0.5	7	0.49	< 0.03	0.002	21.3	< 1	8.4	2.1	90	0.04	0.01		0.179	< 0.20	9.2
	30-Nov-04	INS																					
	03-Aug-05	INS																					
	28-Nov-05	INS																					
	01-Jun-06	INS																					
	04-Dec-06	INS																					
	30-Mar-07	MAX	8.1	764	362	39	0.84	< 2	5	0.3	0.06	< 0.02	15	< 1	10	2.5	78	< 0.02	0.022	< 0.05	< 0.005		
	14-Jun-07	INS																					
	05-Dec-07	INS																					
	25-Jun-08	MAX	8.3	494	228	26	0.79		< 4	0.3	0.05	< 0.02	10	< 1	4	2.6	64	< 0.02	0.02	< 0.1	0.016	< 0.01	0.7
	09-Dec-08	INS																					
	25-Jun-09	MAX	8	514	270	27	0.78	< 2	< 4	0.3	< 0.05	< 0.02	9	< 1	3	5.2	71	< 0.02	0.02	< 0.1	0.023	< 0.01	0.7
	16-Dec-09	INS																					
	29-Jun-10	MAX	8	558	286	26	0.75	< 2	7	0.2	< 0.05	< 0.02	9	< 1	3	5.2	75	< 0.02	0.018	< 0.1	0.022	< 0.01	1.2
	22-Dec-10	INS																					
	16-Jun-11	MAX	7.99	530	278	27	0.7	< 2	12	0.2	< 0.05	< 0.02	8	< 1	3	3.4	78	< 0.02	0.016	< 0.1	0.02	< 0.01	0.4
	15-Dec-11	MAX	8.05	537	283	27	0.95	< 2	9	0.5	< 0.05	0.24	8	< 1	4	4.9	80	4.3	0.02	< 0.1	0.04	< 0.01	0.6
	18-Jun-12	INSV																					
	17-Dec-12	MAX	7.76	540	290	28	0.99	< 2	10	< 0.1	< 0.05	0.19	6	< 1	3	3.8	87	6.7	0.011	< 0.1	0.031	< 0.01	0.46
	19-Jun-13	MAX	7.97	460	230	20	0.65	< 2	22	0.6	< 0.05	0.28	7	< 1	2	2.4	61	12	0.017	< 0.1	0.019	< 0.01	0.41
	05-Dec-13	MAX	7.92	500	270	26	0.94	< 2	31	2.9	< 0.05	0.34	5	< 1	2	2.4	81	< 0.02	0.021	< 0.1	0.026	< 0.01	0.38

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

	Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
Monitor	07-Nov-91	EPL	7.2	711	278	42	1						31.7		22.6	3.2	104	0.12	0.02	< 0.09	0.3	< 0.03	27
3-91	04-Mar-92	EPL	7.49	740	308	39.9	2						33.4		15.7	3.37	96.9	0.44	0.02	0.68	0.22	< 0.03	22.4
Bedrock	17-May-94	EPL	7.92	802	327	40.2	2.7					< 0.05	34.2		32.1	13.2	98.5	0.013	0.02	< 0.06	0.299	< 0.03	10.1
	05-May-95	MDS	7.47	687	300	37.2	< 0.4					< 0.05	32.5		20.8	7.75	96.5	0.018	0.01	< 0.06	0.425	< 0.03	9.27
	21-Aug-96	ENT	7.75	950	363	45.2	13.4				1.09		39	1.5	8	44.1	116	< 0.01	0.12		0.46	< 0.06	14.5
	18-Sep-96	ENT	7.53	720	323	39.9	7.1				0.45		30.8	< 0.5	40.1	18.1	105	0.03	0.112		0.28	< 0.06	9.31
	11-Dec-96	ENT	8.09	918	363	32.9	1.86				0.08		35.9	< 0.5	49	17.4	85.6	< 0.01	0.06		0.74	< 0.06	18.3
Monitor	11-Dec-97	WBL				464	29.4		79	2.08	0.037	2.07		< 0.72		98.5	905	54.9	0.05	3.3	6.86		
3-97	31-Mar-98	WBL	7.72	1270	343	30.5	6.52	1.15			< 0.019		58.6	< 0.72	165	99.3	126	0.12	0.041	0.065	0.055		3.7
Outwash	24-Jun-98	WBL	7.56	939	364	27	4.98	1.17			< 0.019		27.8	< 0.72	71.6	44.9	112	0.475	0.072	< 0.006	0.134		2.42
	02-Oct-98	Dry																					
	03-Dec-98	Dry																					
Monitor	07-Nov-91	EPL	7.54	589	290	35	1.8						54.2		15.8	12	88	< 0.005	0.02	< 0.09	0.048	< 0.03	1.8
5-91	07-Mar-92	EPL	7.51	658	282	34.7	1.1						41.4		12.3	14.8	85.3	< 0.005	0.01	< 0.06	0.29	0.12	6.35
edrock/Outw	17-May-94	EPL	7.64	547	282	31.9	1					< 0.05	15.6		8.68	4.67	68.5	0.084	0.01	< 0.06	0.92	< 0.03	0.86
	05-May-95	MDS	7.37	1210	234	60.2	< 0.4					< 0.05	53		210	51.1	136	< 0.005	0.02	< 0.06	0.229	< 0.03	12

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Monitor
5-96
Bedrock

Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
11-Feb-97	WBL	7.32			34.8	4.83	< 0.34	< 7	0.24	0.021	0.012	32.7	< 0.72	6.53	54.6	125	0.013	0.041	< 0.028	1.07		
27-Mar-97	WBL	7.45	1390	312	35	5.16	< 0.34		0.19	0.051	< 0.011	39.5	< 0.72	219	88.8	130	0.013	0.034	< 0.028	1.92		
25-Jun-97	WBL	7.58	1460	326	33.5	5.1	< 0.34	< 7	0.35	0.044	< 0.011	41.6	< 0.72	251	100	104	0.017	0.029	< 0.028	1.62		
01-Oct-97	WBL	7.26	1290	345	37.1	5.57	< 0.34	13	0.29	< 0.01	< 0.011	43.4	< 0.72	190	102	116	0.017	0.032	< 0.028	1.78		
11-Dec-97	WBL	7.34	1240	358	35.9	5.85	< 0.34	25	0.24	0.018	< 0.011	43.3	< 0.72	173	96.3	115	0.016	0.023	< 0.028	1.7		2.26
31-Mar-98	WBL	7.18	1180	352	30.6	5.14	< 0.34			0.058		41.5	< 0.72	142	75.3	128	0.017	0.028	< 0.011	1.52		1.95
24-Jun-98	WBL	7.38	1240	346	31.4	5.27	1.32			0.062		38.6	< 0.72	172	84.2	107	0.028	0.053	< 0.006	2.1		1.75
02-Oct-98	CAN	7.3	1300	370	32	5.3	3	6	0.25	< 0.1	0.03	42	< 1	160	91	100	< 0.05	< 0.05		1.9		0.53
03-Dec-98	CAN	7.3	1200	380	30	5.6	< 2	< 5	0.13	< 0.1	0.11	39	< 2	130	88	94	< 0.05	< 0.05		1.5		0.54
29-Jun-99	Barr	8.01	1216	333	34.4	6	1.3	10	0.23	0.06	0.004	41.7		236	105	105	< 0.01	< 0.01	< 0.1	2.12		
09-Dec-99	Barr	7.32	1136	355	30.2	4.8	0.6	14	0.42	0.32	0.058	33	< 1	124	100	90.5	< 0.01	0.02	< 0.1	1.61		
21-Jun-00	Philip	7.27	1056	330	29.2	5	0.6	10	0.46	< 0.03	< 0.002	35.8	< 1	165	95.3	100	< 0.03	0.009	< 0.05	1.42		
07-Dec-00	Philip	7.52	910	360	27.2	4.5	0.7	11	0.45	0.04	< 0.002	31.5	< 1	112	71.9	83.9	< 0.03	0.022		1.66		
27-Jun-01	Philip	7.55	1376	321	33.2	5	0.8	< 5	0.22	< 0.03	0.01	38	< 1	275	137	111	< 0.01	0.06	< 0.1	1.81		
03-Dec-01	Philip	7.68	1054	343	27.4	3.9	1	6	0.32	< 0.03	0.003	33	< 1	136	93.2	89.9	< 0.01	0.05	< 0.1	1.88		
04-Jun-02	Philip	8.38	1360	290	31.1	5	0.9	9	0.39	< 0.03	0.005	32.6	< 1	290	139	106	< 0.01	0.02	< 0.1	1.92		
03-Dec-02	Philip	7.9	1116	316	25.9	5	< 0.5	10	0.37	< 0.03	0.013	30.4	< 1	177	118	86.1	< 0.01	0.02	< 0.1	1.56		
02-Jun-03	Philip	7.52	2132	278	38.4	6	< 0.5	10	0.39	0.03	< 0.001	43.2	6	474	263	134	< 0.01	0.02		2.35		
01-Dec-03	Philip	7.89	1345	299	24.2	4.3	0.9	10	0.36	< 0.03	< 0.002	35.8	< 1	284	178	83.7	< 0.01	0.02	< 0.1	1.65		
08-Jun-04	Philip	7.46	2148	275	33.2	4.6	< 0.5	13	0.48	< 0.03	0.006	47.8	< 1	631	295	130	0.06	0.02		2.43	< 0.20	1
30-Nov-04	Philip	7.69	1707	321	20.8	4	< 0.5	19	0.64	0.04	0.003	41.3	< 1	425	272	79	< 0.01	0.02		1.44		
03-Aug-05	Maxx	7.97	3500	283	40	7.7	< 2	27	1.2	< 0.05	< 0.02	47	< 1	952	710	160	< 0.5	< 0.1	< 0.5	2.9		
28-Nov-05	Maxx	8.1	2780	333	25		< 2	17	0.5	< 0.05	< 0.02	49	< 1	661	53	97	< 0.05	0.023	< 0.05	1.6		
01-Jun-06	MAX	8	3480	302	31	5.9	< 2	15	0.6	0.07	< 0.02	41	< 1	908	590	120	< 0.02	0.021	< 0.05	2.1		
04-Dec-06	MAX	7.9	2190	341	19	4.6	< 2	6	0.3	0.09	< 0.02	41	< 1	470	390	73	< 0.02	0.02	< 0.05	1.4		
30-Mar-07	MAX	8	2610	297	22	4.6	< 2	11	0.4	0.12	< 0.02	38	< 1	630	410	97	< 0.02	0.018	< 0.05	1.5		
14-Jun-07	MAX	8.1	2900	284	29	5.3	< 2	12	0.3	0.1	< 0.02	40	< 1	700	490	110	< 0.02	0.018	< 0.05	2.2		
05-Dec-07	MAX	8.1	2460	307	23	5.4	< 2	24	0.2	0.06	< 0.02	39	< 1	580	420	94	< 0.02	0.017	< 0.1	1.7	0.01	0.2
25-Jun-08	MAX	8.1	3810	270	30	5.5		29	0.4	< 0.05	< 0.02	44	< 1	970	610	140	< 0.02	< 0.01	< 0.1	2.2	< 0.01	0.5
09-Dec-08	MAX	8	2530	319	16	4.2	< 2	12	0.3	< 0.05	< 0.02	39	< 1	570	390	76	< 0.02	0.03	< 0.1	1.5	< 0.01	0.3
25-Jun-09	MAX	7.8	3030	288	27	5	< 2	12	0.3	< 0.05	< 0.02	42	< 1	740	490	110	< 0.02	0.019	< 0.1	2.3	0.01	0.4
16-Dec-09	MAX	7.7	2190	307	19	4.5	14	22	2	1.4	0.09	33	12	480	390	76	0.05	0.02	0.12	0.14	< 0.01	0.2
24-Jun-10	MAX	7.9	2560	263	24	4.4	< 2	4	0.5	< 0.05	< 0.02	32	< 1	610	390	100	< 0.02	0.019	< 0.1	1.4	< 0.01	0.7
17-Dec-10	MAX	7.9	1940	296	18	4	< 2	10	0.2	< 0.05	< 0.02	28	< 1	390	330	79	< 0.02	0.027	< 0.1	0.97	< 0.01	0.4
15-Jun-11	MAX	7.82	2580	277	26	4.2	< 2	16	0.2	< 0.05	< 0.02	31	< 1	630	390	120	< 0.02	0.02	< 0.1	2	< 0.01	0.5
13-Dec-11	MAX	7.96	1980	304	19	4	< 2	14	0.4	0.07	0.07	28	3	400	330	80	0.21	0.013	< 0.1	1.1	< 0.01	0.2
18-Jun-12	MAX	7.85	3100	250	27	4.2	< 2	12	0.36	< 0.05	< 0.02	31	1.3	780	420	130	0.07	0.025	< 0.1	1.7	< 0.01	0.19
10-Dec-12	MAX	7.71	1900	290	19	3.8	< 2	7.6	0.67	< 0.05	< 0.02	28	< 1	380	320	83	0.03	0.015	< 0.1	1.6	< 0.01	0.46
20-Jun-13	MAX	8.24	3900	250	26	4.1	< 2	6.1	0.26	< 0.05	< -1	38	< 1	1100	380	120	0.26	0.013	< 0.1	2.1	< 0.01	0.26
03-Dec-13	MAX	7.8	2400	300	19	4.1	< 2	6.4	0.31	< 0.05	< 0.02	30	< 1	590	440	88	< 0.02	0.019	< 0.1	1.5	< 0.01	0.57

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Monitor
6a-96
Bedrock

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
11-Feb-97	WBL	7.55			26.4	3.58	0.87	17	0.25	< 0.01	< 0.011	32.4	< 0.72	16.3	68.8	111	0.036	0.038	< 0.028	0.037		
26-Mar-97	WBL	7.76	1430	237	35.4	4.36	< 0.34		< 0.07	< 0.01	< 0.011	32.7	< 0.72	312	83.9	130	0.033	0.022	< 0.028	0.051		
25-Jun-97	WBL	7.76	1640	238	30	4.74	0.36	< 7	< 0.07	< 0.01	< 0.011	33.4	< 0.72	312	136	104	0.026	0.028	< 0.028	0.049		
01-Oct-97	WBL	7.26	1690	420	37.1	16.4	1.44	10	0.23	< 0.01	< 0.011	43.1	< 0.72	216	134	158	0.021	0.056	0.035	0.154		
11-Dec-97	WBL	7.63	1700	261	33	5.53	< 0.34	15	0.22	< 0.01	< 0.011	38.3	< 0.72	333	176	116	0.016	0.021	< 0.028	0.03		14.8
31-Mar-98	WBL	7.56	1290	246	29.1	4.87	< 0.34			< 0.019		32.9	< 0.72	199	70	133	0.02	0.021	< 0.011	0.029		16.7
24-Jun-98	WBL	7.61	1480	239	31.5	4.76	0.66			< 0.019		31	< 0.72	270	122	121	0.041	0.024	< 0.006	0.049		13
02-Oct-98	CAN	7.6	1500	260	33	4.8	2	8	0.24	< 0.1	0.02	33	< 1	250	130	110	< 0.05	< 0.05		0.04		16
03-Dec-98	CAN	7.5	1600	250	33	5	< 2	< 5	0.11	< 0.1	0.12	30	< 2	280	120	110	< 0.05	< 0.05		0.07		12
29-Jun-99	Barr	8.19	1210	252	33.5	5	0.9	10	0.24	0.03	0.003	32.3		261	111	112	< 0.01	< 0.01	< 0.1	0.043		
09-Dec-99	Barr	7.61	1344	260	31.1	4.3	0.7	11	0.14	0.02	0.006	30	< 1	208	129	101	< 0.01	0.02	< 0.1	0.07		
21-Jun-00	Philip	7.52	1157	292	32	4	1.2	8	0.36	< 0.03	< 0.002	33.7	< 1	202	99.8	114	< 0.03	< 0.005	< 0.05	0.039		
07-Dec-00	Philip	7.74	1116	288	28.3	3.5	0.5	9	0.35	< 0.03	< 0.002	32.4	< 1	194	97.3	94.6	< 0.03	0.014		0.034		
27-Jun-01	Philip	7.73	1165	290	31.1	3	1.7	5	0.13	< 0.03	0.004	40	< 1	192	96	110	< 0.01	0.06	< 0.1	0.25		
03-Dec-01	Philip	7.91	1232	286	30.7	2.7	< 0.5	< 5	0.12	< 0.03	0.005	36.4	< 1	206	104	106	< 0.01	0.05	< 0.1	0.099		
04-Jun-02	Philip	8.14	1051	278	30	3	0.7	6	0.44	< 0.03	0.005	33.8	< 1	158	78.9	107	< 0.01	0.02	< 0.1	0.033		
03-Dec-02	Philip	7.85	1143	271	29.3	4	< 0.5	8	0.41	< 0.03	0.012	33.9	< 1	179	99.2	106	< 0.01	0.01	< 0.1	0.039		
02-Jun-03	Philip	7.58	1191	277	32.1	3	< 0.5	7	0.4	< 0.03	< 0.001	46.8	6	171	83.1	116	< 0.01	0.01		0.035		
01-Dec-03	Philip	8.09	1098	277	31.1	2	0.8	10	0.29	< 0.03	0.004	39	< 1	167	79.4	111	< 0.01	0.02	< 0.1	0.035		
09-Jun-04	Philip	7.77	1029	248	28.3	2.9	< 0.5	< 5	0.18	< 0.03	0.004	34.8	< 1	164	74.5	125	0.08	0.01		0.404	< 0.20	16.1
30-Nov-04	Philip	7.78	1463	253	37	3	< 0.5	8	0.24	0.05	0.004	38.3	< 1	345	115	137	< 0.01	0.02		0.034		
03-Aug-05	Maxx	8.02	1350	235	38	2.8	< 2	5	0.3	< 0.05	< 0.02	34	< 1	233	130	130	< 0.05	0.012	0.07	0.029		
28-Nov-05	Maxx	8.08	1510	252	40		< 2	8	0.9	< 0.05	< 0.02	42	< 1	256	140	140	< 0.05	0.016	< 0.05	0.036		
01-Jun-06	MAX	8.1	1510	264	35	2.7	< 2	7	0.3	< 0.05	0.04	39	1	228	130	120	< 0.02	0.018	< 0.05	0.036		
04-Dec-06	MAX	7.9	1620	273	42	3.2	< 2	6	< 0.1	0.09	0.02	56	< 1	210	140	150	< 0.02	0.019	< 0.05	0.042		
30-Mar-07	MAX	8.1	1530	270	34	3.1	< 2	5	0.3	0.15	< 0.02	55	< 1	180	110	130	< 0.02	0.021	< 0.05	< 0.005		
14-Jun-07	MAX	8.2	1330	206	38	3.4	< 2	5	< 0.1	0.1	< 0.02	56	< 1	190	130	130	< 0.02	0.025	< 0.05	0.035		
05-Dec-07	MAX	8	1610	267	38	3.3	< 2	17	0.3	< 0.05	< 0.02	46	< 1	230	140	140	< 0.02	0.015	< 0.1	0.037	< 0.20	34
25-Jun-08	MAX	8.2	1660	257	32	3.1		< 4	0.4	0.09	< 0.02	42	< 1	280	160	120	0.04	0.021	< 0.1	0.036	< 0.10	26
09-Dec-08	MAX	8	1740	268	38	3.6	< 2	9	< 0.1	0.09	< 0.02	54	< 1	260	150	140	< 0.02	0.02	< 0.1	0.042	< 0.01	37
25-Jun-09	MAX	7.9	1700	273	39	4.4	< 2	5	0.1	< 0.05	< 0.02	50	< 1	240	160	150	< 0.02	0.03	< 0.1	0.039	< 0.01	46
15-Dec-09	MAX	7.8	1520	280	33	3.9	< 2	4	0.2	< 0.05	0.04	41	< 1	220	140	120	< 0.02	0.03	< 0.1	0.039	< 0.01	22
23-Jun-10	MAX	8	1340	277	28	3.4	< 2	< 4	0.4	< 0.05	< 0.02	37	< 1	200	130	110	< 0.02	0.027	< 0.1	0.029	< 0.01	12
20-Dec-10	MAX	7.86	1340	279	28	2.9	< 2	5	0.2	< 0.05	< 0.02	33	< 1	210	130	110	0.06	0.021	< 0.1	0.035	< 0.01	6.8
14-Jun-11	MAX	7.94	1300	276	28	3	< 2	8	0.3	< 0.05	< 0.02	35	< 1	190	140	100	< 0.02	0.028	< 0.1	0.031	< 0.01	8.4
13-Dec-11	MAX	8.01	1220	269	26	3	< 2	5	0.2	< 0.05	0.04	34	< 1	160	120	98	< 0.02	0.016	< 0.1	0.038	< 0.01	7.5
18-Jun-12	MAX	7.91	1100	280	23	2.8	< 2	9.2	0.39	< 0.05	< 0.02	35	1.1	140	100	89	< 0.02	0.021	< 0.1	0.027	< 0.01	5.9
10-Dec-12	MAX	7.91	1200	290	26	2.9	< 2	< 4	0.45	< 0.05	< 0.02	34	< 1	160	120	100	< 0.02	0.019	< 0.1	0.03	< 0.01	4.9
17-Jun-13	MAX	8	1100	280	23	2.5	< 2	4	0.21	< 0.05	< 1	34	< 1	150	100	89	< 0.02	0.024	< 0.1	0.025	< 0.01	4.8
02-Dec-13	MAX	7.84	1200	290	27	3.2	< 2	7.1	0.35	< 0.05	< 0.02	39	< 1	160	110	100	< 0.02	0.024	< 0.1	0.029	< 0.01	5.2

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Monitor
6b-96
Outwash

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
11-Feb-97	WBL	7.39			42.2	15.3	0.42	22	0.18	0.055	< 0.011	44.3	< 0.72	621	322	167	0.038	0.045	< 0.028	0.073		
26-Mar-97	WBL	7.73	3260	260	35.2	16.3	< 0.34		0.09	< 0.01	< 0.011	44.1	< 0.72	815	467	146	0.073	0.062	< 0.028	0.1		
25-Jun-97	WBL	7.58	2210	323	34.8	15	0.51	< 7	< 0.07	< 0.01	< 0.011	45	< 0.72	440	198	125	0.033	0.047	< 0.028	0.139		
01-Oct-97	WBL	7.65	1740	246	36.2	5.36	4.19	56	< 0.07	< 0.01	< 0.011	35.8	< 0.72	341	164	128	0.019	0.02	0.035	0.041		
11-Dec-97	WBL	7.33	1200	333	30.6	13.1	0.75	17	0.17	< 0.01	< 0.011	39.7	< 0.72	128	80.5	120	0.145	0.046	< 0.028	0.09		14
31-Mar-98	WBL	7.43	2770	270	28.8	12.6	< 0.34			< 0.019		50.9	< 0.72	649	289	168	0.113	0.029	< 0.011	0.083		17.3
24-Jun-98	WBL	7.34	1860	308	35.5	15.4	0.48			0.047		43	< 0.72	279	159	163	0.017	0.078	< 0.006	0.151		43.5
02-Oct-98	CAN	7.3	1500	410	45	15	< 2	< 5	0.34	< 0.1	< 0.02	40	< 1	150	92	160	< 0.05	0.05		0.14		37
03-Dec-98	CAN	7.3	1300	390	35	12	< 2	< 5	< 0.1	< 0.1	0.11	35	< 2	120	75	120	< 0.05	< 0.05		0.1		15
29-Jun-99	Barr	8.01	1550	327	34.3	11	1.9	11	0.29	< 0.02	0.003	44.4		338	189	125	0.01	0.03	< 0.1	0.098		
09-Dec-99	Barr	7.32	1378	332	32.1	10.5	0.6	17	0.54	0.05	0.002	38	< 1	155	122	121	< 0.01	0.04	< 0.1	0.108		
21-Jun-00	Philip	7.36	1639	306	31	18	< 0.5	13	3.16	2.84	< 0.002	48.8	< 1	313	182	130	< 0.03	0.03	< 0.05	0.099		
07-Dec-00	Philip	7.48	1137	352	32.9	10.2	2.5	11	0.44	0.09	< 0.002	43.7	< 1	163	78.3	113	< 0.03	0.04		0.104		
27-Jun-01	Philip	7.59	1580	339	30.2	10	1.9	< 5	0.28	< 0.03	0.005	43	< 1	265	188	114	< 0.01	0.07	< 0.1	0.258		
03-Dec-01	Philip	7.79	1531	379	28.6	8.9	< 0.5	11	0.42	< 0.03	0.008	56.7	< 1	252	161	116	< 0.01	0.06	< 0.1	0.141		
04-Jun-02	Philip	8.2	1769	317	32.7	10	0.6	12	0.59	< 0.03	0.015	46.1	< 1	390	223	129	0.01	0.04	< 0.1	0.177		
03-Dec-02	Philip	7.85	974	310	25.8	9	< 0.5	14	0.77	< 0.03	0.009	34.7	< 1	97	77.2	95	< 0.01	0.03	< 0.1	0.063		
02-Jun-03	Philip	7.69	1538	270	25.8	7	0.7	10	0.37	0.1	< 0.001	41.9	11	350	225	101	< 0.01	0.03		0.068		
01-Dec-03	Philip	7.96	1407	309	22.5	6.9	0.8	5	0.42	< 0.03	0.004	38.6	< 1	278	179	107	0.03	0.03	< 0.1	0.242		
09-Jun-04	Philip	7.54	1871	314	40.4	10.2	< 0.5	8	0.3	< 0.03	0.003	65.2	< 1	412	214	217	0.21	0.04		1.31	< 0.20	40.3
30-Nov-04	Philip	7.76	791	290	20.5	6	< 0.5	13	0.6	< 0.03	0.004	23.4	< 1	90.3	53.1	85.9	< 0.01	0.02		0.054		
03-Aug-05	Maxx	7.86	1920	347	39	13	< 2	13	0.7	< 0.05	< 0.02	49	< 1	297	210	160	< 0.05	0.045	< 0.05	0.11		
28-Nov-05	Maxx	8.19	1190	348	26		< 2	11	0.2	< 0.05	< 0.02	35	< 1	120	110	110	< 0.05	0.039	< 0.05	0.067		
01-Jun-06	MAX	8	2060	342	35	11	< 2	8	0.5	< 0.05	0.08	44	< 1	340	250	140	< 0.02	0.045	< 0.05	0.088		
04-Dec-06	MAX	8.1	1420	412	24	8.6	< 2	7	0.6	0.09	< 0.02	44	< 1	170	180	99	< 0.02	0.04	< 0.05	0.066		
30-Mar-07	MAX	7.9	2440	356	31	9.2	8	12	0.8	0.11	< 0.02	54	< 1	460	280	120	< 0.02	0.034	< 0.05	< 0.005		
14-Jun-07	MAX	8	1820	344	36	11	< 2	9	0.3	0.09	< 0.02	55	< 1	240	230	140	< 0.02	0.05	< 0.05	0.09		
05-Dec-07	MAX	8.1	1450	282	29	11	< 2	17	0.4	< 0.05	< 0.02	44	< 1	240	130	120	< 0.02	0.041	< 0.1	0.068	< 0.01	8.3
25-Jun-08	MAX	8.1	2480	308	47	14		15	0.6	0.13	< 0.02	63	< 1	420	280	190	< 0.02	0.047	< 0.1	0.12	< 0.10	76
09-Dec-08	MAX	8	1840	309	33	12	< 2	11	0.4	0.12	0.05	51	< 1	280	190	130	< 0.02	0.034	< 0.1	0.085	0.01	33
25-Jun-09	MAX	7.9	2030	320	30	11	< 2	6	0.3	< 0.05	< 0.02	46	< 1	370	280	120	< 0.02	0.049	< 0.1	0.08	< 0.01	23
15-Dec-09	MAX	7.8	1380	307	30	11	< 2	< 4	0.6	0.19	0.03	45	< 1	170	130	120	< 0.02	0.04	< 0.1	0.068	< 0.01	22
23-Jun-10	MAX	8	1300	302	22	8.1	< 2	< 4	0.5	< 0.05	< 0.02	36	< 1	190	140	90	< 0.02	0.035	< 0.1	0.064	< 0.01	12
20-Dec-10	MAX	7.82	1080	283	22	8.3	< 2	6	0.3	< 0.05	< 0.02	33	< 1	130	94	96	< 0.02	0.027	< 0.1	0.059	< 0.01	11
14-Jun-11	MAX	7.91	1650	313	22	7.7	< 2	16	0.4	< 0.05	< 0.02	36	< 1	270	240	93	< 0.02	0.036	0.11	0.057	< 0.01	6.1
13-Dec-11	MAX	8.01	1380	326	24	9.1	< 2	13	0.8	< 0.05	0.12	38	< 1	180	160	95	2	0.024	< 0.1	0.067	< 0.01	5.3
18-Jun-12	MAX	7.9	1500	350	22	7.6	< 2	10	0.38	< 0.05	0.027	39	< 1	230	190	95	0.12	0.029	< 0.1	0.063	< 0.01	5.6
10-Dec-12	MAX	7.84	1200	310	21	7.6	< 2	16	1.1	< 0.05	0.12	22	1.2	160	130	94	2.4	0.023	< 0.1	0.06	< 0.01	2.9
17-Jun-13	MAX	7.88	1900	330	26	8.7	< 2	4.6	0.81	0.4	0.044	73	< 1	330	230	110	0.1	0.036	< 0.1	0.078	0.02	6.8
02-Dec-13	MAX	7.79	1400	310	23	7.4	2	22	0.86	0.15	0.026	44	< 1	220	170	110	< 0.02	0.03	< 0.1	0.073	0.05	5.3

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

Monitor
7-96
Outwash

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
11-Feb-97	WBL	7.7			26.2	12.6	< 0.34	24	< 0.07	< 0.01	< 0.011	35.2	2.48	132	63.5	90.1	0.053	0.048	< 0.028	0.05		
26-Mar-97	WBL	7.7	1180	256	32.5	14	< 0.34		< 0.07	< 0.01	< 0.011	35.5	< 0.72	131	80.6	104	0.071	0.074	< 0.028	0.084		
25-Jun-97	WBL	7.8	992	250	29.6	9.65	0.69	< 7	0.08	< 0.01	< 0.011	35.2	< 0.72	66.4	33.7	95.1	0.03	0.039	< 0.028	0.11		
01-Oct-97	WBL	7.57	902	251	33.2	10.2	1.44	< 7	0.1	< 0.01	< 0.011	35.7	< 0.72	54.3	28.7	110	0.039	0.056	< 0.028	0.082		24.6
11-Dec-97	WBL	7.52	906	248	31.8	10.1	< 0.34	< 7	0.25	< 0.01	< 0.011	36.3	< 0.72	62.1	30	105	0.168	0.055	< 0.028	0.084		23
31-Mar-98	WBL	7.55	1120	224	32.4	9.06	< 0.34			< 0.019		43	< 0.72	92.4	36.8	127	0.092	0.038	< 0.011	0.088		43.1
24-Jun-98	WBL	7.77	1200	226	34.9	9.49	0.78			< 0.019		41.3	< 0.72	89.8	38.8	141	0.058	0.056	< 0.006	0.115		53.5
02-Oct-98	CAN	7.4	1100	280	38	11	3	10	0.27	< 0.1	< 0.02	46	< 1	74	35	130	< 0.05	< 0.05		0.12		41
03-Dec-98	CAN	7.5	1200	310	39	11	< 2	< 5	0.36	< 0.1	0.1	41	< 2	72	32	130	< 0.05	< 0.05		0.13		37
29-Jun-99	Barr	8.15	1325	248	41	12	2.2	10	0.21	< 0.02	0.003	58.4		282	110	132	< 0.01	0.03	< 0.1	0.122		
09-Dec-99	Barr	7.39	1478	293	45.4	14.1	0.8	13	0.2	< 0.02	< 0.002	41	< 1	231	91.1	135	< 0.01	0.05	0.1	0.153		
21-Jun-00	Philip	7.44	1775	255	48.8	13.9	0.6	12	0.54	< 0.03	< 0.002	80.9	< 1	397	172	157	< 0.03	0.035	< 0.05	0.144		
07-Dec-00	Philip	7.5	1430	321	41	13.2	16	12	0.3	0.05	< 0.002	75.8	< 1	227	118	135	< 0.03	0.102		0.297		
27-Jun-01	Philip	7.72	1768	293	44.4	13	1.7	6	0.34	< 0.03	0.006	105	< 1	307	176	144	< 0.01	0.09	< 0.1	0.246		
03-Dec-01	Philip	7.73	1259	365	36.2	11.8	< 0.5	7	0.41	< 0.03	0.004	48.7	< 1	162	87.8	124	< 0.01	0.05	< 0.1	0.151		
04-Jun-02	Philip	8.04	1863	328	46.1	20	< 0.5	11	0.77	0.42	0.006	110	< 1	378	201	146	< 0.01	0.07	< 0.1	0.182		
03-Dec-02	Philip	7.92	1681	350	44.9	27	< 0.5	16	1.03	1.11	0.012	70.9	< 1	244	145	152	< 0.01	0.07	< 0.1	0.173		
02-Jun-03	Philip	7.52	2122	298	52.7	23	< 0.5	11	0.99	0.41	0.002	131	12	380	212	167	< 0.01	0.06		0.199		
01-Dec-03	Philip	8	1206	303	36.9	16.3	1.3	12	0.41	< 0.03	0.003	61.1	< 1	178	86.6	118	< 0.01	0.05	< 0.1	0.147		
08-Jun-04	Philip	7.48	1995	336	51.6	22	0.8	13	0.57	< 0.03	0.002	129	< 1	370	196	226	0.19	0.07		0.859	< 0.20	55.4
30-Nov-04	Philip	7.71	1705	368	40.5	20	< 0.5	15	0.75	0.12	0.003	107	< 1	296	158	150	< 0.01	0.07		0.202		
03-Aug-05	Maxx	7.95	1800	325	51	19	< 2	22	1.5	0.12	< 0.02	86	< 1	190	140	180	< 0.05	0.086	0.067	0.23		
28-Nov-05	Maxx	8.07	2140	378	52		< 2	10	1	< 0.05	< 0.02	112	< 1	258	180	200	< 0.05	0.093	< 0.05	0.27		
01-Jun-06	MAX	8	1910	306	44	16	< 2	12	0.7	< 0.05	0.04	113	< 1	186	120	170	< 0.02	0.099	< 0.05	0.24		
04-Dec-06	MAX	7.9	1610	315	40	17	< 2	7	0.7	0.09	< 0.02	83	1	150	100	170	< 0.02	0.092	< 0.05	0.22		
30-Mar-07	MAX	8.1	1650	276	45	16	< 2	12	< 0.1	0.08	< 0.02	65	< 1	160	100	180	< 0.02	0.06	< 0.05	0.23		
14-Jun-07	MAX	8	1370	278	39	15	< 2	8	0.1	0.09	< 0.02	70	< 1	140	110	140	< 0.02	0.058	< 0.05	0.18		
05-Dec-07	MAX	8	1310	289	36	15	< 2	20	0.5	0.06	< 0.02	57	< 1	100	72	150	< 0.02	0.048	< 0.1	0.2	< 0.20	44
25-Jun-08	MAX	8.1	1810	284	37	14		9	0.6	0.06	< 0.02	83	< 1	240	150	140	< 0.02	0.065	< 0.1	0.21	< 0.10	54
09-Dec-08	MAX	7.9	1470	289	35	14	< 2	8	0.6	< 0.05	< 0.02	58	< 1	170	110	130	< 0.02	0.062	< 0.1	0.19	0.02	41
25-Jun-09	MAX	7.8	1400	318	33	11	< 2	< 4	0.6	< 0.05	< 0.02	56	< 1	190	130	120	< 0.02	0.042	< 0.1	0.17	< 0.01	21
15-Dec-09	MAX	7.8	1130	298	28	12	< 2	5	0.4	< 0.05	0.03	40	< 1	120	89	100	< 0.02	0.052	< 0.1	0.15	< 0.01	15
24-Jun-10	MAX	8	1380	331	36	12	< 2	4	0.5	< 0.05	< 0.02	51	< 1	180	100	130	< 0.02	0.039	< 0.1	0.19	< 0.01	21
17-Dec-10	MAX	7.73	1030	278	29	11	< 2	12	0.3	< 0.05	< 0.02	41	< 1	84	73	110	< 0.02	0.05	< 0.1	0.17	< 0.01	23
14-Jun-11	MAX	7.85	1740	316	36	11	< 2	16	0.6	< 0.05	< 0.02	60	< 1	270	190	130	< 0.02	0.039	< 0.1	0.16	< 0.01	18
14-Dec-11	MAX	8.02	1190	333	30	11	< 2	5	0.4	< 0.05	0.05	46	< 1	110	93	110	0.81	0.036	< 0.1	0.22	< 0.01	16
18-Jun-12	MAX	7.88	1200	310	28	9.5	< 2	15	0.66	< 0.05	0.034	44	1	120	91	100	1.7	0.034	< 0.1	0.17	< 0.01	12
10-Dec-12	MAX	7.88	1100	330	28	11	< 2	7.7	0.54	< 0.05	< 0.02	46	< 1	110	86	110	0.08	0.04	< 0.1	0.2	< 0.01	8.6
19-Jun-13	MAX	8.12	1100	300	26	8.5	< 2	4.8	0.28	< 0.05	< 0.02	41	< 1	130	80	100	0.74	0.037	< 0.1	0.19	< 0.01	6.8
03-Dec-13	MAX	7.73	1000	320	27	11	< 2	11	0.52	0.064	< 0.02	34	< 1	110	73	100	< 0.02	0.047	< 0.1	0.11	< 0.01	5.3

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Monitor
8-96
Bedrock

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
11-Feb-97	WBL	7.78			39.9	2.08	< 0.34	28	0.21	< 0.01	0.034	73.5	< 0.72	33	19.3	94.9	0.054	0.051	< 0.028	0.024		
27-Mar-97	WBL	7.77	864	302	36.9	1.73	< 0.34	46	0.3	< 0.01	< 0.011	53.9	< 0.72	49.8	18.8	107	0.011	0.032	< 0.028	0.673		
25-Jun-97	WBL	7.84	882	308	33.6	1.77	< 0.34	< 7	< 0.07	0.018	< 0.011	60.8	< 0.72	40.9	17.6	92	0.017	0.052	< 0.028	0.543		
01-Oct-97	WBL	7.45	838	321	37.1	1.9	0.51	51	0.2	< 0.01	< 0.011	66.2	< 0.72	37.2	19.3	111	0.021	0.021	< 0.028	0.502		
11-Dec-97	WBL	7.61	880	297	37.7	1.99	< 0.34	< 7	0.34	< 0.01	< 0.011	75.2	< 0.72	55.4	21	105	0.063	0.025	< 0.028	0.69		5.16
31-Mar-98	WBL	7.41	997	288	33.4	2.05	1.72			< 0.019		65.6	< 0.72	102	32.9	116	0.013	0.022	< 0.011	0.535		3.94
24-Jun-98	WBL	7.5	890	309	32.1	1.78	0.75			< 0.019		59.6	< 0.72	58.4	30.1	107	0.057	< 0.016	< 0.006	0.632		5.23
02-Oct-98	CAN	7.4	890	320	38	2.2	< 2	< 5	0.3	< 0.1	< 0.02	73	< 1	57	31	110	< 0.05	< 0.05		0.84		4.8
03-Dec-98	CAN	7.4	910	310	36	2.2	< 2	< 5	0.48	< 0.1	0.12	72	< 2	60	28	99	< 0.05	< 0.05		0.83		2.6
29-Jun-99	Barr	8.23	976	282	40.1	3	1.7	12	0.19	< 0.02	0.003	68.2		146	67.7	109	< 0.01	< 0.01	< 0.1	0.751		
09-Dec-99	Barr	7.46	1358	287	43.4	2.8	0.9	9	0.49	0.03	0.004	64	< 1	207	103	114	< 0.01	0.01	< 0.1	0.896		
21-Jun-00	Philip	7.43	1212	264	38.9	2.4	< 0.5	6	0.25	< 0.03	< 0.002	64.4	< 1	233	107	111	< 0.03	< 0.005	< 0.05	0.89		
07-Dec-00	Philip	7.6	942	320	34.6	2	1.3	13	0.25	0.04	< 0.002	63.7	< 1	125	59.2	94.6	< 0.03	0.059		1.01		
27-Jun-01	Philip	7.76	1019	317	36.3	2	1.6	< 5	0.27	0.03	0.037	63	< 1	139	76.1	105	0.02	0.05	< 0.1	1.11		
03-Dec-01	Philip	7.66	1329	356	36	2.3	1.1	< 5	0.2	< 0.03	0.005	50	< 1	225	93.9	103	< 0.01	0.05	< 0.1	1.02		
04-Jun-02	Philip	8.43	1024	302	35.1	3	< 0.5	12	0.75	< 0.03	0.008	56.5	< 1	138	74.1	102	< 0.01	0.01	< 0.1	0.867		
03-Dec-02	Philip	7.97	1002	309	35.8	3	< 0.5	6	0.31	< 0.03	0.004	59.4	< 1	118	65.5	101	< 0.01	0.01	< 0.1	0.871		
02-Jun-03	Philip	7.47	1622	276	39.9	3	< 0.5	7	0.41	< 0.03	< 0.001	55.1	9	332	171	116	< 0.01	0.01		1.08		
01-Dec-03	Philip	7.85	1262	285	35.6	3.1	1	9	0.4	< 0.03	0.003	53.8	< 1	254	124	104	< 0.01	0.02	< 0.1	1.05		
08-Jun-04	Philip	7.6	1036	292	35.3	1.8	< 0.5	6	0.2	< 0.03	0.003	58.4	< 1	159	80.6	123	0.11	0.01		1.43	< 0.20	3.9
30-Nov-04	Philip	7.8	981	309	33.4	3	< 0.5	17	0.7	< 0.03	0.006	58.4	< 1	121	66.2	96.3	< 0.01	< 0.01		0.919		
03-Aug-05	Maxx	8.15	888	298	36	2.5	< 2	22	1.2	< 0.05	< 0.02	47	< 1	98	71	92	< 0.05	0.019	0.069	0.7		
28-Nov-05	Maxx	8.05	997	320	37		< 2	6	0.6	< 0.05	< 0.02	54	< 1	99	66	110	< 0.05	0.015	< 0.05	1		
01-Jun-06	MAX	8.1	1040	314	32	2.3	< 2	11	0.5	< 0.05	< 0.02	50	< 1	129	67	87	< 0.02	0.013	< 0.05	0.94		
04-Dec-06	MAX	8.1	976	327	35	2.8	< 2	< 4	0.4	< 0.05	< 0.02	50	< 1	99	62	99	< 0.02	0.014	< 0.05	1.1		
30-Mar-07	MAX	8.2	1030	308	36	2.6	< 2	5	0.4	0.08	< 0.02	55	< 1	120	71	100	< 0.02	0.02	< 0.05	1.1		
14-Jun-07	MAX	8.1	1010	303	40	2.7	< 2	5	0.5	0.11	< 0.02	54	< 1	110	79	100	< 0.02	0.015	< 0.05	1.1		
05-Dec-07	MAX	8	1130	306	37	2.8	< 2	12	0.2	< 0.05	< 0.02	62	< 1	150	68	110	< 0.02	0.011	< 0.1	1.2	< 0.01	1.9
25-Jun-08	MAX	8.1	1050	291	37	2.8		15	0.5	0.12	< 0.02	52	< 1	130	81	100	< 0.02	< 0.01	< 0.1	1.2	< 0.01	1.2
09-Dec-08	MAX	8	997	310	33	2.5	< 2	4	0.3	< 0.05	< 0.02	56	< 1	110	59	91	< 0.02	0.012	< 0.1	1.1	< 0.01	1
25-Jun-09	MAX	7.8	943	298	32	2.3	< 2	4	0.3	< 0.05	< 0.02	54	< 1	97	61	90	< 0.02	0.013	< 0.1	1	< 0.01	1.1
16-Dec-09	MAX	7.7	1010	312	35	2.5	< 2	8	0.3	< 0.05	0.02	46	< 1	110	62	97	< 0.02	0.015	< 0.1	1.1	< 0.01	1.1
24-Jun-10	MAX	8	960	292	33	2.3	< 2	< 4	0.4	< 0.05	< 0.02	50	< 1	110	63	93	< 0.02	0.013	< 0.1	0.97	< 0.01	1.1
22-Dec-10	MAX	7.73	953	304	35	2.6	< 2	< 4	0.3	< 0.05	< 0.02	43	< 1	95	64	97	< 0.02	0.014	< 0.1	1.1	< 0.01	0.8
15-Jun-11	MAX	7.9	1030	282	33	2.5	< 2	14	0.3	< 0.05	< 0.02	56	< 1	140	79	91	< 0.02	0.015	< 0.1	1.1	< 0.01	0.6
14-Dec-11	MAX	7.99	1000	296	32	2.7	< 2	< 4	0.3	< 0.05	0.02	38	< 1	110	73	91	< 0.02	< 0.01	< 0.1	1.4	< 0.01	0.5
18-Jun-12	MAX	7.9	960	290	31	2.2	< 2	10	0.43	< 0.05	< 0.02	44	< 1	100	62	89	0.21	< 0.01	< 0.1	0.76	< 0.01	0.33
10-Dec-12	MAX	7.77	920	300	32	2.4	< 2	7	0.57	< 0.05	< 0.02	47	< 1	88	59	92	0.08	< 0.01	< 0.1	0.99	< 0.01	0.44
20-Jun-13	MAX	8.37	960	290	33	2.4	< 2	5.8	0.34	< 0.05	< 0.02	44	< 1	100	66	97	0.14	0.016	< 0.1	0.92	< 0.01	0.28
03-Dec-13	MAX	7.74	910	300	32	2.5	< 2	6.1	0.24	< 0.05	< 0.02	38	< 1	93	60	87	< 0.02	0.016	< 0.1	1.1	< 0.01	0.31

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Monitor
9-96
Outwash

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
11-Feb-97	WBL	7.81			16.4	0.99	0.69	7	0.19	< 0.01	< 0.011	17.6	2.23	7.17	4.37	61.6	0.124	0.021	< 0.028	0.008		
26-Mar-97	WBL	8.04	474	186	18.7	0.86	< 0.34	14	0.24	< 0.01	< 0.011	23.4	< 0.72	6.34	7.96	68.6	0.074	0.036	< 0.028	0.027		
25-Jun-97	WBL	8.01	582	205	20.7	0.95	< 0.34	< 7	< 0.07	< 0.01	< 0.011	26.7	< 0.72	6.93	7.38	71	0.031	0.031	< 0.028	0.018		
01-Oct-97	WBL	7.92	490	179	21.7	0.84	1.2	13	0.1	< 0.01	< 0.011	22.4	< 0.72	9.82	1.68	74.5	0.026	0.018	0.029	0.008		11.4
11-Dec-97	WBL	7.85	488	171	21.8	0.67	< 0.34	< 7	0.22	< 0.01	< 0.011	20.4	< 0.72	13.6	1.48	70.3	0.031	< 0.016	0.04	0.005		8.67
31-Mar-98	WBL	8.38	557	195	25.9	0.7	< 0.34			0.019		26.7	< 0.72	13.1	2.2	71.7	0.011	0.03	< 0.011	0.005		13
24-Jun-98	WBL	7.79	536	193	21.6	0.78	1.38			< 0.019		26	< 0.72	12.5	2.83	76.2	0.027	0.047	< 0.006	0.007		11.6
02-Oct-98	CAN	7.7	610	210	29	< 1	< 2	< 5	0.4	< 0.1	< 0.02	29	< 1	19	2	85	< 0.05	< 0.05		< 0.01		14
03-Dec-98	CAN	7.6	590	230	24	< 1	< 2	< 5	0.31	< 0.1	0.17	23	< 2	11	2.5	79	< 0.05	< 0.05		0.01		9.9
29-Jun-99	Barr	8.31	528	220	19.6	1	1.2	10	0.21	< 0.02	0.004	24.6		23.3	8.2	79.7	< 0.01	0.01	< 0.1	< 0.005		
09-Dec-99	Barr	7.65	649	251	20.2	< 1	< 0.5	6	0.16	0.06	0.004	17	< 1	31	14.6	93.2	0.01	0.03	< 0.1	0.024		
21-Jun-00	Philip	7.71	414	234	14.7	0.8	< 0.5	5	0.28	< 0.03	< 0.002	12.2	< 1	12	8.9	77.4	< 0.03	0.013	< 0.05	< 0.005		
07-Dec-00	Philip	7.91	408	249	15	0.3	1.1	5	0.13	0.04	< 0.002	13.7	< 1	13.5	8.7	69.3	< 0.03	0.063		0.169		
27-Jun-01	Philip	7.9	570	248	18.3	< 1	1.7	< 5	0.14	< 0.03	0.004	25	< 1	20	14.2	86	< 0.01	0.06	< 0.1	0.208		
03-Dec-01	Philip	7.93	482	223	15.3	1.3	0.9	< 5	0.39	< 0.03	0.008	10.8	< 1	15.7	20.2	72	0.03	0.03	< 0.1	0.182		
04-Jun-02	Philip	8.08	517	236	16.1	1	< 0.5	5	0.43	< 0.03	0.005	17.1	< 1	21.7	16.7	79.2	0.01	0.05	< 0.1	< 0.005		
03-Dec-02	Philip	8.08	595	232	20.8	1	< 0.5	5	0.3	< 0.03	0.012	15.8	< 1	33.5	10.9	84.5	< 0.01	0.03	< 0.1	0.011		
02-Jun-03	Philip	7.76	666	229	20.6	< 1	< 0.5	7	0.45	0.03	< 0.001	11	4	64.1	20.7	90.2	< 0.01	0.04		0.011		
01-Dec-03	Philip	8.03	701	236	21.6	< 1	< 0.5	12	0.5	< 0.03	< 0.002	13.4	< 1	83.7	29.2	87	< 0.01	0.03	< 0.1	0.018		
08-Jun-04	Philip	7.81	591	235	20.1	< 1	0.6	6	0.28	< 0.03	0.002	28.8	< 1	39.7	18.4	89.5	< 0.01	0.05		0.072	< 0.20	6.4
30-Nov-04	Philip	7.78	671	274	19.9	1	< 0.5	9	0.34	< 0.03	0.003	27.8	< 1	41.2	28.6	87.9	< 0.01	0.02		< 0.005		
03-Aug-05	Maxx	8.08	584	259	22	1	< 2	13	0.8	< 0.05	< 0.02	24	< 1	9	11	87	< 0.05	0.03	0.073	< 0.005		
28-Nov-05	Maxx	8.17	714	295	18		< 2	10	0.6	< 0.05	< 0.02	21	< 1	38	34	100	< 0.05	0.043	< 0.05	0.006		
01-Jun-06	N/A																					
04-Dec-06	MAX	8.1	686	291	22	1.2	< 2	< 4	0.3	0.07	< 0.02	20	< 1	34	27	86	< 0.02	0.036	< 0.05	0.005		
30-Mar-07	MAX	8.2	691	296	22	1.1	< 2	< 4	0.4	0.06	< 0.02	27	< 1	23	15	81	< 0.02	0.039	< 0.05	< 0.005		
14-Jun-07	MAX	8.1	703	322	30	1.3	< 2	4	0.4	0.09	< 0.02	22	< 1	17	18	100	< 0.02	0.045	< 0.05	< 0.005		
05-Dec-07	MAX	8.1	653	305	26	1	< 2	12	0.3	< 0.05	< 0.02	27	< 1	6	6.7	97	< 0.02	0.03	< 0.1	< 0.005	< 0.01	5.3
25-Jun-08	MAX	8.3	738	246	31	1.5		6	0.6	< 0.05	< 0.02	26	< 1	23	14	95	< 0.02	0.035	< 0.1	0.011	< 0.01	6.6
09-Dec-08	MAX	8	700	317	30	1.1	< 2	8	0.5	< 0.05	< 0.02	27	< 1	18	9.7	93	< 0.02	0.032	< 0.1	0.008	< 0.01	5.6
25-Jun-09	MAX	7.9	690	317	29	1.3	< 2	4	0.4	< 0.05	< 0.02	22	< 1	15	13	99	< 0.02	0.037	< 0.1	0.005	< 0.01	5
16-Dec-09	MAX	8	691	348	34	1.2	< 2	8	0.3	< 0.05	< 0.02	23	< 1	5	9.6	100	< 0.02	0.037	< 0.1	0.006	< 0.01	3.9
24-Jun-10	N/A																					
22-Dec-10	N/A																					
15-Jun-11	N/A																					
14-Dec-11	N/A																					
18-Jun-12	NA																					
19-Jul-12	MAX	7.96	290	85	7.5	2.2	< 2	8.6	1.5	0.1	< 0.02	14	< 1	14	19	30	0.39	0.017	< 0.1	< 0.005	< 0.01	6.2
10-Dec-12	MAX	7.48	290	100	6.9	3.9	< 2	< 4	1	< 0.05	< 0.02	19	< 1	13	17	29	0.34	0.012	< 0.1	< 0.005	< 0.01	6.3
18-Jun-13	MAX	7.89	390	130	11	4.1	< 2	8.1	0.16	< 0.05	< 0.02	19	< 1	18	21	41	0.22	0.019	< 0.1	< 0.005	< 0.01	8.3
02-Dec-13	MAX	8.02	450	140	13	6.8	< 2	13	0.3	< 0.05	< 0.02	33	< 1	16	21	44	< 0.02	0.02	< 0.1	0.034	< 0.01	9.2

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

	Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
Monitor	27-Jun-01	Philip	7.84	662	259	31.5	< 1	< 0.5	< 5	0.14	0.07	0.009	103	< 1	22	9.9	93.7	0.02	0.02	< 0.1	0.016		
10-00	03-Dec-01	Philip	8.01	666	267	30.7	< 1	0.8	< 5	0.19	0.04	0.01	85.8	< 1	25.8	12	95.1	0.04	0.02	< 0.1	0.061		
Bedrock	04-Jun-02	Philip	8.23	595	239	28.2	2	< 0.5	< 5	0.19	0.04	0.013	76	< 1	21.5	9.2	84.4	0.02	0.02	< 0.1	< 0.005		
	03-Dec-02	Philip	8	660	255	29.5	1	< 0.5	7	0.42	0.06	0.013	76.8	< 1	26.9	11.3	87.7	0.03	0.01	< 0.1	< 0.005		
	02-Jun-03	Philip	7.78	659	242	29.1	< 1	< 0.5	< 5	0.17	0.05	< 0.001	25.2	11	44.9	10	87	0.03	0.01		< 0.005		
	01-Dec-03	Philip	8.09	626	236	28.2	1.1	0.8	< 5	0.21	< 0.03	0.009	78.5	< 1	27.6	10.2	85.2	0.04	0.02	< 0.1	0.015		
	09-Jun-04	Philip	7.78	600	238	28.2	< 1	< 0.5	< 5	0.13	0.08	0.005	82.4	< 1	27.8	9.7	91	0.07	0.02		0.13	< 0.20	< 0.2
	30-Nov-04	Philip	7.89	626	245	27.7	2	< 0.5	< 5	0.13	0.03	0.005	77.7	< 1	28.1	10.4	83.5	0.04	0.02		< 0.005		
	03-Aug-05	Maxx	8.18	599	240	31	1.2	< 2	< 4	0.3	< 0.05	< 0.02	67	< 1	20	10	86	< 0.05	0.011	< 0.05	< 0.005		
	28-Nov-05	Maxx	8.07	616	251	31		< 2	5	0.2	< 0.05	< 0.02	71	< 1	23	10	90	< 0.05	0.016	< 0.05	< 0.005		
	01-Jun-06	MAX	8.1	646	254	30	1.1	< 2	< 4	1	0.09	< 0.02	77	< 1	20	9.1	88	0.03	0.014	< 0.05	< 0.005		
	04-Dec-06	MAX	8.2	651	257	28	1	< 2	4	0.3	0.11	< 0.02	82	< 1	17	8.6	83	0.02	0.014	< 0.05	< 0.005		
	30-Mar-07	MAX	8.2	648	249	27	1.1	< 2	< 4	0.5	0.12	< 0.02	75	< 1	19	7.7	79	0.02	0.014	< 0.05	< 0.005		
	14-Jun-07	MAX	8.1	656	246	29	1.1	< 2	5	0.2	0.15	< 0.02	81	< 1	21	8.9	84	0.03	0.015	< 0.05	< 0.005		
	05-Dec-07	MAX	8.2	652	239	28	1.1	< 2	11	0.2	0.07	< 0.02	81	< 1	21	8.8	86	< 0.02	< 0.01	< 0.1	< 0.005	< 0.01	< 0.1
	25-Jun-08	MAX	8.2	654	237	28	1.1		11	0.3	0.11	< 0.02	82	< 1	23	9.5	86	< 0.02	< 0.01	< 0.1	< 0.005	< 0.01	< 0.1
	09-Dec-08	MAX	8.1	679	238	29	1.1	< 2	< 4	0.2	0.07	< 0.02	91	< 1	27	11	85	0.03	0.018	< 0.1	< 0.005	< 0.01	< 0.1
	25-Jun-09	MAX	8	631	240	29	1.1	< 2	< 4	0.3	< 0.05	< 0.02	80	< 1	17	8.8	87	0.03	0.016	< 0.1	< 0.005	< 0.01	< 0.1
	16-Dec-09	MAX	8	685	239	32	1.2	< 2	< 4	0.2	0.06	0.02	84	< 1	28	14	94	0.04	0.019	< 0.1	< 0.005	< 0.01	< 0.1
	24-Jun-10	N/A																					
	22-Dec-10	N/A																					
	15-Jun-11	N/A																					
	14-Dec-11	N/A																					
	18-Jun-12	NA																					
	19-Jul-12	MAX	7.88	650	240	30	1.1	< 2	11	0.97	0.11	0.24	68	< 1	22	9.1	87	3.1	0.015	< 0.1	< 0.005	< 0.01	< 0.1
	10-Dec-12	MAX	7.93	670	240	30	1.1	< 2	< 4	0.54	0.077	0.23	74	< 1	25	9.3	91	6.6	< 0.01	< 0.1	< 0.005	< 0.01	< 0.1
	18-Jun-13	MAX	8.04	710	240	29	1.2	< 2	5.1	0.24	0.054	0.03	82	< 1	32	12	95	0.81	0.017	< 0.1	< 0.005	< 0.01	< 0.1
	02-Dec-13	MAX	8	690	250	31	1.1	< 2	7	0.2	0.053	0.041	80	< 1	30	11	92	0.04	0.014	< 0.1	< 0.005	< 0.01	< 0.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Monitor
11a-00
Bedrock

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
27-Jun-01	Philip	8.13	528	263	25.3	2	2.9	< 5	0.28	0.13	0.03	46.8	< 1	7.1	25.9	68.7	0.34	0.1	< 0.1	0.138		
03-Dec-01	Philip	7.99	512	262	24.9	2	1.2	< 5	0.32	0.12	0.007	34.9	< 1	5.1	12	83.2	0.04	0.04	< 0.1	0.254		
04-Jun-02	Philip	8.13	454	241	23.7	2	0.9	< 5	0.41	0.13	0.01	26.7	< 1	5	6	64.4	0.04	0.03	< 0.1	< 0.005		
03-Dec-02	Philip	8.12	500	253	24.3	3	< 0.5	< 5	0.33	0.12	0.009	25.9	< 1	4	6.1	67	< 0.01	0.03	< 0.1	0.011		
02-Jun-03	Philip	7.71	515	231	24.7	2	< 0.5	< 5	0.38	0.11	< 0.001	31.8	9	6.3	5.8	67.5	< 0.01	0.03		< 0.005		
01-Dec-03	Philip	8.02	507	233	23.6	1.6	1	9	0.52	< 0.03	0.004	35.9	< 1	7	5.6	64.8	0.02	0.04	< 0.1	< 0.005		
08-Jun-04	Philip	7.81	478	236	24.2	1	< 0.5	6	0.26	0.1	0.003	33.4	< 1	6.9	5.4	80.3	0.05	0.03		0.185	< 0.20	< 0.2
30-Nov-04	Philip	7.96	494	241	23.8	1	< 0.5	10	0.53	0.13	0.007	29.4	< 1	6.7	5.1	66	< 0.01	0.02		< 0.005		
03-Aug-05	Maxx	8.13	471	238	25	1.9	< 2	8	0.6	0.06	< 0.02	20	< 1	5	5.5	62	0.066	0.038	0.079	< 0.005		
28-Nov-05	Maxx	8.2	470	248	26		< 2	10	0.4	0.14	< 0.02	26	< 1	7	5.2	70	< 0.05	0.036	< 0.05	< 0.005		
01-Jun-06	MAX	8.1	520	250	26	2	< 2	< 4	0.4	0.16	< 0.02	25	< 1	8	5.2	72	< 0.02	0.034	< 0.05	< 0.005		
04-Dec-06	MAX	8.1	532	252	25	1.8	< 2	< 4	0.3	0.12	< 0.02	38	< 1	10	5.3	70	< 0.02	0.035	< 0.05	< 0.005		
30-Mar-07	MAX	8.3	523	244	23	1.8	< 2	< 4	0.4	0.26	< 0.02	29	< 1	11	4.3	64	< 0.02	0.033	< 0.05	< 0.005		
14-Jun-07	MAX	8.3	539	242	27	1.8	< 2	< 4	0.4	0.24	< 0.02	32	< 1	12	5.2	77	< 0.02	0.033	< 0.05	0.015		
05-Dec-07	MAX	8.2	534	236	25	1.9	< 2	11	0.2	0.12	< 0.02	33	< 1	12	6	69	< 0.02	0.031	< 0.1	< 0.005	< 0.01	< 0.1
25-Jun-08	MAX	8.2	534	231	27	2.3		16	0.6	0.21	< 0.02	30	< 1	15	6.5	73	< 0.02	0.026	< 0.1	< 0.005	< 0.01	< 0.1
09-Dec-08	MAX	8.1	526	237	23	1.7	< 2	< 4	0.3	0.1	< 0.02	34	< 1	12	4.9	65	< 0.02	0.035	< 0.1	< 0.005	< 0.01	0.1
25-Jun-09	MAX	8	559	232	27	1.8	< 2	11	0.2	< 0.05	< 0.02	44	< 1	16	5.2	74	< 0.02	0.035	< 0.1	< 0.005	< 0.01	0.1
15-Dec-09	MAX	8	539	233	25	1.8	< 2	5	0.1	< 0.05	0.03	34	< 1	14	5.2	69	< 0.02	0.038	< 0.1	< 0.005	< 0.01	0.2
28-Jun-10	MAX	8.1	546	225	25	1.8	< 2	5	0.2	< 0.05	0.03	39	< 1	18	4.8	69	< 0.02	0.036	< 0.1	< 0.005	< 0.01	0.1
22-Dec-10	MAX	7.85	575	227	28	1.9	< 2	< 4	0.3	0.24	< 0.02	38	< 1	22	5.4	75	< 0.02	0.032	< 0.1	< 0.005	< 0.01	< 0.1
15-Jun-11	MAX	7.97	568	228	27	1.8	< 2	10	0.2	0.1	< 0.02	51	< 1	24	5.3	75	0.25	0.033	< 0.1	< 0.005	< 0.01	< 0.1
14-Dec-11	MAX	8.12	588	230	27	1.8	< 2	< 4	0.3	0.1	0.03	35	< 1	24	5.4	75	0.21	0.025	< 0.1	0.011	0.05	< 0.1
19-Jun-12	MAX	8.09	590	230	27	1.8	< 2	8.1	0.39	0.073	0.025	39	< 1	24	5.2	74	0.56	0.031	< 0.1	0.04	< 0.01	< 0.1
11-Dec-12	MAX	7.85	580	240	25	1.7	< 2	< 4	< 0.1	0.058	< 0.02	40	< 1	22	5.2	75	0.17	0.034	< 0.1	< 0.005	< 0.01	0.11
21-Jun-13	MAX	8.2	570	230	26	1.9	< 2	< 4	0.31	0.13	< 0.02	39	< 1	21	5.6	74	0.3	0.033	< 0.1	0.01	< 0.01	< 0.1
04-Dec-13	MAX	7.8	580	230	26	1.7	< 2	7.9	0.34	0.12	< 0.02	37	< 1	24	5.8	71	< 0.02	0.031	< 0.1	< 0.005	0.01	< 0.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Monitor
11b-00
Outwash

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
27-Jun-01	Philip	7.99	798	264	25.6	2	7.2	5	0.22	< 0.03	0.017	55	< 1	54	54.1	83.1	0.03	0.07	< 0.1	0.113		
03-Dec-01	Philip	7.98	1081	266	28.4	2.2	1.4	6	0.28	< 0.03	0.023	50.4	< 1	155	92.8	100	< 0.01	0.04	< 0.1	0.013		
04-Jun-02	Philip	8.02	751	252	24.7	1	0.9	6	0.39	< 0.03	0.005	35	< 1	69.3	40.3	91.4	< 0.01	0.09	< 0.1	0.015		
03-Dec-02	Philip	8	813	250	28.2	2	< 0.5	6	0.37	< 0.03	0.022	42.2	< 1	68.9	26.8	103	< 0.01	0.15	< 0.1	0.063		
02-Jun-03	Philip	7.72	873	226	28.1	2	0.6	5	0.37	0.04	< 0.001	48.5	7	70.6	37.2	101	< 0.01	0.41		0.029		
01-Dec-03	Philip	8.1	629	185	13.1	1.1	< 0.5	12	0.51	< 0.03	0.005	43	< 1	58.8	58.9	51.6	0.02	0.58	< 0.1	0.012		
08-Jun-04	Philip	7.9	887	192	18.3	< 1	0.7	23	0.97	0.03	0.007	37.7	< 1	165	93.4	79.2	0.02	1.09		0.129	< 0.20	4.7
30-Nov-04	Philip	8	781	212	15.1	1	< 0.5	7	0.26	< 0.03	0.002	29.4	< 1	118	83.2	60.6	< 0.01	0.57		0.011		
03-Aug-05	Maxx	8.04	919	235	21	1.6	< 2	8	0.8	< 0.05	< 0.02	37	< 1	139	88	84	< 0.05	1.2	< 0.05	0.028		
28-Nov-05	Maxx	8.12	1210	235	21		< 2	< 4	0.7	< 0.05	< 0.02	37	< 1	192	150	91	< 0.05	0.6	< 0.05	0.02		
01-Jun-06	MAX	8.1	961	268	18	1.4	< 2	8	0.6	< 0.05	0.05	40	< 1	129	120	69	< 0.02	0.8	< 0.05	0.02		
04-Dec-06	MAX	8.2	899	279	14	1.2	< 2	< 4	0.5	< 0.05	< 0.02	48	< 1	92	110	53	< 0.02	1.9	< 0.05	0.012		
30-Mar-07	MAX	8.3	780	274	12	1	< 2	7	0.4	0.09	< 0.02	34	< 1	61	95	44	< 0.02	1.5	< 0.05	< 0.005		
14-Jun-07	MAX	8.2	756	264	15	1.3	< 2	7	0.4	0.08	< 0.02	36	< 1	54	96	60	< 0.02	1.8	< 0.05	0.016		
05-Dec-07	MAX	8.2	755	259	16	1.5	< 2	12	0.3	< 0.05	5.2	27	< 1	66	77	65	< 0.02	0.58	< 0.1	0.013	< 0.01	3.4
25-Jun-08	MAX	8.2	1100	250	19	1.4		6	0.5	0.08	< 0.02	25	< 1	180	110	81	< 0.02	0.39	< 0.1	0.018	< 0.01	5.5
09-Dec-08	MAX	8.1	939	264	16	1.4	< 2	5	0.4	< 0.05	0.03	27	< 1	110	110	63	< 0.02	0.9	< 0.1	0.019	< 0.01	4.4
25-Jun-09	MAX	8	1130	253	18	1.4	< 2	< 4	0.3	< 0.05	< 0.02	25	< 1	190	140	74	< 0.02	0.85	< 0.1	0.018	< 0.01	3.8
15-Dec-09	MAX	8	890	250	17	1.5	< 2	< 4	0.2	< 0.05	0.03	19	< 1	110	89	71	< 0.02	0.44	< 0.1	0.016	< 0.01	3.5
28-Jun-10	MAX	8	966	243	17	1.5	< 2	6	0.3	< 0.05	< 0.02	35	< 1	140	95	75	< 0.02	0.24	< 0.1	0.017	< 0.01	3.3
17-Dec-10	MAX	7.96	966	255	18	1.5	< 2	< 4	0.2	< 0.05	< 0.02	38	< 1	130	110	75	< 0.02	0.57	< 0.1	0.017	< 0.01	3.3
14-Jun-11	MAX	8.01	1140	224	16	1.9	< 2	17	0.5	< 0.05	< 0.02	30	< 1	190	140	73	< 0.02	0.58	< 0.1	0.014	< 0.01	3
14-Dec-11	MAX	8.16	975	238	15	1.4	< 2	< 4	1	< 0.05	0.19	25	< 1	140	110	64	1.9	0.49	< 0.1	0.02	< 0.01	2.7
18-Jun-12	MAX	8.04	970	230	16	1.5	< 2	9.8	0.45	0.055	0.024	23	1	140	100	71	1.6	0.21	< 0.1	0.034	< 0.01	2.1
11-Dec-12	MAX	7.87	1000	250	18	1.6	< 2	< 4	0.26	< 0.05	0.045	23	< 1	140	100	84	2	0.19	< 0.1	0.02	< 0.01	3
19-Jun-13	MAX	7.9	1300	250	18	1.6	< 2	4.9	0.43	< 0.05	0.067	28	< 1	220	130	87	1.8	0.15	< 0.1	0.022	< 0.01	3
04-Dec-13	MAX	7.97	1100	330	27	1.8	< 2	10	0.48	< 0.05	0.19	23	< 1	140	150	91	< 0.02	0.27	< 0.1	0.11	< 0.01	2.8

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Monitor 12a-00 Bedrock

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
27-Jun-01	Philip	7.5	888	390	43.6	14	1.2	7	0.92	0.45	0.006	96.2	< 1	82.8	22.6	109	< 0.01	0.07	< 0.1	1.44		
03-Dec-01	Philip	7.77	920	389	44.7	10.1	1.2	16	0.75	0.19	0.008	50.6	< 1	24.7	19.7	110	< 0.01	0.06	< 0.1	1.17		
04-Jun-02	Philip	8.33	889	346	40.5	15	0.6	10	1.34	0.64	0.007	44.5	< 1	44.3	20.6	123	0.04	0.02	< 0.1	1.51		
03-Dec-02	Philip	7.78	4365	372	41.2	15	< 0.5	24	4.22	4.23	0.012	55.7	< 1	1200	763	109	< 0.1	< 0.1	< 1	0.958		
02-Jun-03	Philip	7.37	915	350	40.4	18	< 0.5	11	1.04	0.41	0.002	46.3	10	55.5	36.2	103	< 0.01	0.02		1.17		
01-Dec-03	No Ac																					
08-Jun-04	Philip	7.53	845	319	37	13.9	< 0.5	10	0.89	0.47	0.009	45.5	< 1	45.3	23	106	< 0.01	0.02		1.15	< 0.20	22.5
30-Nov-04	Philip	7.57	823	321	37.7	13	< 0.5	13	0.67	0.13	0.002	50.5	< 1	38.5	16.4	98.4	< 0.01	0.02		1		
03-Aug-05	Maxx	7.93	891	370	44	16	< 2	9	0.6	0.17	< 0.02	40	< 1	42	27	110	< 0.05	0.028	0.084	1.1		
28-Nov-05	Maxx	7.88	791	331	40		< 2	54	2.5	0.16	< 0.02	54	< 1	30	20	100	< 0.05	0.024	< 0.05	0.97		
01-Jun-06	MAX	7.9	858	338	39	16	< 2	13	1.2	0.24	< 0.02	40	< 1	34	25	110	< 0.02	0.02	< 0.05	1.1		
04-Dec-06	MAX	7.8	1020	423	41	22	< 2	8	1.2	0.56	< 0.02	49	< 1	41	34	110	< 0.02	0.024	< 0.05	1.2		
30-Mar-07	MAX	8.1	938	376	33	23	< 2	5	1.1	0.47	< 0.02	40	< 1	35	26	110	< 0.02	0.022	< 0.05	1.3		
14-Jun-07	MAX	8	947	353	37	17	< 2	8	3.5	0.24	< 0.02	45	< 1	40	29	100	< 0.02	0.019	< 0.05	1.1		
05-Dec-07	MAX	8	796	343	34	11	< 2	12	0.4	0.1	0.03	39	< 1	34	17	94	< 0.02	0.027	< 0.1	0.92	< 0.01	1.4
25-Jun-08	MAX	8	796	343	32	13		6	0.6	0.07	< 0.02	36	< 1	23	18	93	< 0.02	0.02	< 0.1	0.99	< 0.01	8.9
09-Dec-08	MAX	7.9	816	343	30	12	< 2	9	0.5	0.06	< 0.02	40	< 1	27	18	96	< 0.02	0.032	< 0.1	0.92	0.02	5.9
25-Jun-09	MAX	7.7	707	298	30	13	< 2	4	0.5	0.05	< 0.02	38	< 1	13	15	83	< 0.02	0.05	< 0.1	0.81	0.01	8
16-Dec-09	MAX	7.6	742	312	37	10	< 2	10	0.3	< 0.05	< 0.02	39	< 1	31	13	93	< 0.02	0.019	< 0.1	0.81	0.03	1.4
24-Jun-10	MAX	7.9	699	304	30	14	< 2	7	0.6	< 0.05	< 0.02	35	< 1	11	15	86	< 0.02	0.02	< 0.1	0.84	0.02	5.5
20-Dec-10	MAX	7.75	658	304	32	8.7	< 2	7	0.4	< 0.05	< 0.02	34	< 1	9	6.5	87	< 0.02	0.02	< 0.1	0.77	0.02	1.7
15-Jun-11	MAX	7.82	603	283	26	12	< 2	12	0.3	< 0.05	< 0.02	26	< 1	5	8.4	77	< 0.02	0.016	< 0.1	0.74	< 0.01	3
15-Dec-11	MAX	8.01	701	318	33	11	< 2	< 4	0.8	< 0.05	0.06	32	< 1	13	11	92	0.55	0.011	< 0.1	0.82	< 0.01	2.3
18-Jun-12	MAX	7.8	680	300	30	9.5	< 2	10	0.5	< 0.05	< 0.02	32	< 1	18	9.4	82	0.05	0.02	< 0.1	0.77	< 0.01	1.9
10-Dec-12	MAX	7.62	710	310	33	6.2	< 2	< 4	0.62	< 0.05	< 0.02	31	< 1	25	11	90	< 0.02	0.016	< 0.1	0.74	0.02	1.3
18-Jun-13	MAX	7.87	630	290	28	11	< 2	7.3	0.19	< 0.05	< 0.02	29	< 1	6	7.4	84	< 0.02	0.016	< 0.1	0.76	< 0.01	2.2
02-Dec-13	MAX	7.77	660	320	31	12	< 2	< 4	0.27	< 0.05	< 0.02	28	< 1	8	7.4	89	< 0.02	0.02	< 0.1	0.78	< 0.01	1.5

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Monitor
12b-00
Outwash

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
27-Jun-01	Philip	7.77	760	354	27.2	4	0.9	11	0.45	0.13	0.026	48.9	< 1	40	25.2	106	0.62	0.1	< 0.1	0.372		
03-Dec-01	Philip	7.83	435	204	12.8	3.5	1.2	12	0.26	< 0.03	0.042	21.3	< 1	11.7	12.3	54.8	0.02	0.07	< 0.1	0.209		
04-Jun-02	Philip	8.51	1144	353	25.6	11	2.9	48	10.8	9.3	0.053	30.1	< 1	169	94.7	97	0.01	0.09	< 0.1	0.352		
03-Dec-02	Philip	7.76	1187	420	37.2	5	1.2	32	1.41	0.71	0.239	35.4	< 1	135	112	110	16.7	0.05	0.3	0.006		
02-Jun-03	Philip	7.38	1108	398	33.7	3	92	88	1.33	0.57	0.004	4.5	157	117	66	118	22.7	0.11		0.017		
01-Dec-03	No Ac																					
08-Jun-04	Philip	7.56	710	339	24.9	4.1	2.1	29	1.94	1.46	0.151	20.1	< 1	51	33.8	118	11	0.09		0.342	< 0.20	0.2
30-Nov-04	Philip	7.62	687	341	24.4	4	< 0.5	24	1.03	0.43	0.046	32.3	< 1	22.7	16.4	96.7	3.25	0.08		0.079		
03-Aug-05	Maxx	7.78	610	306	21	4.2	< 3	27	2.4	1.07	0.1	20	1	14	16	90	7.1	0.092	0.17	0.026		
28-Nov-05	Maxx	7.93	647	345	26		< 2	14	1	0.35	< 0.02	28	< 1	13	13	100	2.1	0.068	< 0.05	0.32		
01-Jun-06	MAX	8.1	584	292	19	2.5	< 2	8	1	0.49	0.02	24	< 1	10	12	72	1.7	0.05	0.053	0.15		
04-Dec-06	MAX	7.9	648	328	22	3.2	< 2	5	0.8	0.43	< 0.02	26	< 1	11	14	92	0.78	0.065	< 0.05	0.21		
30-Mar-07	MAX	8.1	526	257	15	2.2	< 2	8	0.7	0.39	< 0.02	18	< 1	8	10	76	1.1	0.039	< 0.05	0.22		
14-Jun-07	MAX	8	685	337	22	3	< 2	16	0.6	0.44	< 0.02	30	< 1	11	13	93	4.5	0.049	< 0.05	0.22		
05-Dec-07	MAX	7.9	657	305	22	2.8	< 2	11	0.3	< 0.05	0.02	27	< 1	7	8.4	95	< 0.02	0.035	< 0.1	0.58	< 0.01	4.5
25-Jun-08	MAX	8.2	482	235	16	2.7		5	0.6	0.16	< 0.02	22	< 1	5	8.9	70	< 0.02	0.067	< 0.1	0.61	< 0.01	0.2
09-Dec-08	MAX	7.9	707	356	25	4	< 2	9	0.5	< 0.05	< 0.02	27	< 1	6	13	100	< 0.02	0.058	< 0.1	0.74	< 0.01	1.4
25-Jun-09	MAX	7.7	587	297	20	3	< 2	< 4	0.4	0.12	0.03	21	< 1	4	9.3	87	< 0.02	0.053	< 0.1	0.61	< 0.01	0.4
16-Dec-09	MAX	7.5	764	383	31	4.7	< 2	5	0.5	< 0.05	< 0.02	25	< 1	4	9	120	< 0.02	0.037	< 0.1	0.65	< 0.01	3.6
24-Jun-10	MAX	7.9	532	263	18	2.8	< 2	11	0.5	0.07	< 0.02	13	< 1	8	9.5	80	< 0.02	0.051	< 0.1	0.54	< 0.01	< 0.1
17-Dec-10	MAX	7.68	712	353	30	3.9	< 2	9	0.4	< 0.05	< 0.02	20	< 1	7	7.7	100	< 0.02	0.057	< 0.1	0.47	< 0.01	2.1
15-Jun-11	MAX	7.84	516	260	18	2.6	< 2	14	0.3	0.09	0.02	16	< 1	5	7.1	77	< 0.02	0.044	< 0.1	0.35	< 0.01	0.1
15-Dec-11	MAX	8.01	749	354	29	3.9	< 2	14	0.7	< 0.05	0.88	32	< 1	8	9.6	110	6.1	0.035	< 0.1	0.18	< 0.01	2.4
18-Jun-12	MAX	7.73	710	340	26	3.5	< 2	21	0.96	< 0.05	0.28	29	< 1	6	7.5	100	16	0.039	< 0.1	0.7	< 0.01	2.4
10-Dec-12	MAX	7.64	780	380	30	4.2	< 2	6.9	1.2	< 0.05	0.6	33	< 1	9	11	120	13	0.035	< 0.1	0.3	< 0.01	3.2
18-Jun-13	MAX	7.86	510	250	17	2.6	< 2	11	0.51	< 0.05	0.32	16	< 1	6	6.5	76	8	0.04	< 0.1	0.61	< 0.01	0.14
02-Dec-13	MAX	7.59	590	290	23	3.4	< 2	7.5	0.55	< 0.05	0.17	21	< 1	5	6.6	92	5.4	0.044	< 0.1	0.55	< 0.01	0.95

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Monitor
13a-01
Bedrock

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
03-Dec-01	Philip	7.95	913	272	38.8	2.9	0.8	< 5	0.21	0.09	0.008	105	< 1	83.9	39.9	106	0.77	0.04	< 0.1	0.111		
04-Jun-02	Philip	8.08	851	259	35	2	< 0.5	< 5	0.24	0.1	0.005	107	< 1	85.5	38	97.7	0.96	0.04	< 0.1	< 0.005		
03-Dec-02	Philip	7.99	902	262	35.6	2	< 0.5	< 5	0.24	0.1	0.008	104	< 1	85.3	40.3	99.8	0.81	0.03	< 0.1	< 0.005		
02-Jun-03	Philip	7.77	921	248	35.2	2	< 0.5	< 5	0.23	0.11	< 0.001	111	9	88.5	41	100	0.45	0.03		0.022		
01-Dec-03	Philip	8.15	853	250	34.5	2.3	< 0.5	6	0.25	< 0.03	0.004	110	< 1	97.1	39	109	0.74	0.05	< 0.1	0.193		
09-Jun-04	Philip	7.81	854	254	34.3	2.1	< 0.5	< 5	0.19	0.14	0.007	119	< 1	97.1	39.7	112	0.64	0.04		0.117	< 0.20	< 0.2
30-Nov-04	Philip	7.96	897	254	33.9	2	< 0.5	6	0.25	0.1	0.006	115	< 1	101	40.8	98.8	0.65	0.04		< 0.005		
03-Aug-05	Maxx	8.02	889	252	36	2.5	< 2	4	0.5	0.19	< 0.02	107	< 1	93	44	100	0.58	0.043	< 0.05	< 0.005		
28-Nov-05	Maxx	8	884	263	37		< 2	< 4	0.2	0.12	< 0.02	101	< 1	87	44	110	0.59	0.041	< 0.05	< 0.005		
01-Jun-06	MAX	8.1	929	266	33	2.2	< 2	5	0.5	0.17	< 0.02	106	< 1	111	40	94	0.43	0.045	< 0.05	< 0.005		
04-Dec-06	MAX	8	967	268	35	2.5	< 2	< 4	0.3	0.18	< 0.02	111	< 1	100	43	100	0.5	0.044	< 0.05	< 0.005		
30-Mar-07	MAX	8.1	958	260	32	2.4	< 2	5	0.3	0.21	< 0.02	103	< 1	94	39	90	0.5	0.042	< 0.05	< 0.005		
14-Jun-07	MAX	8.2	967	258	34	2.5	< 2	4	0.4	0.21	< 0.02	110	< 1	97	44	100	0.43	0.043	< 0.05	< 0.005		
05-Dec-07	MAX	8.1	939	251	34	2.4	< 2	8	0.2	0.17	< 0.02	103	< 1	97	42	98	0.42	0.038	< 0.1	< 0.005	< 0.01	< 0.1
25-Jun-08	MAX	8.2	967	247	37	2.6		11	0.5	0.19	< 0.02	120	< 1	100	49	100	0.3	0.043	< 0.1	< 0.005	< 0.01	< 0.1
09-Dec-08	MAX	8	965	251	34	2.5	< 2	< 4	0.3	0.14	< 0.02	124	< 1	95	45	97	0.32	0.043	< 0.1	< 0.005	< 0.01	< 0.1
25-Jun-09	MAX	7.9	969	248	34	2.6	< 2	< 4	0.2	0.13	< 0.02	120	< 1	96	44	100	0.54	0.047	< 0.1	< 0.005	< 0.01	< 0.1
16-Dec-09	MAX	7.8	955	248	35	2.7	< 2	7	0.3	0.12	0.03	110	< 1	95	45	100	0.37	0.047	< 0.1	< 0.005	< 0.01	< 0.1
28-Jun-10	MAX	7.9	953	244	32	2.5	< 2	9	0.4	0.1	0.02	120	< 1	92	40	95	0.4	0.049	< 0.1	< 0.005	< 0.01	< 0.1
20-Dec-10	MAX	7.76	952	243	34	2.6	< 2	6	0.3	0.13	< 0.02	100	< 1	95	43	100	0.2	0.048	< 0.1	< 0.005	< 0.01	< 0.1
16-Jun-11	MAX	7.95	936	241	36	2.7	< 2	13	0.2	0.14	< 0.02	120	< 1	95	44	100	0.39	0.043	< 0.1	< 0.005	< 0.01	< 0.1
13-Dec-11	MAX	8.02	980	245	37	2.7	< 2	< 4	0.2	0.08	0.04	110	< 1	93	44	100	0.44	0.043	< 0.1	< 0.005	< 0.01	< 0.1
20-Jun-12	MAX	7.86	970	250	35	2.6	< 2	8.2	0.46	0.079	0.032	110	< 1	93	44	100	0.42	0.046	< 0.1	< 0.005	< 0.01	< 0.1
11-Dec-12	MAX	7.85	960	250	31	2.6	< 2	< 4	0.47	0.15	< 0.02	110	< 1	91	40	100	0.37	0.048	< 0.1	< 0.005	< 0.01	< 0.1
17-Jun-13	MAX	7.71	960	260	32	2.3	< 2	< 4	0.72	0.16	< 0.02	110	< 1	95	42	94	0.42	0.048	< 0.1	< 0.005	< 0.01	< 0.1
09-Dec-13	MAX	7.89	980	240	35	2.5	< 2	< 4	0.24	0.15	< 1	110	< 1	97	44	100	0.35	0.041	< 0.1	< 0.005	< 0.01	< 0.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Monitor
13b-01
Outwash

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
03-Dec-01	Philip	7.93	655	296	29.7	2.2	1.4	< 5	0.23	< 0.03	0.223	50.4	< 1	14.9	4.8	84.7	0.01	0.02	< 0.1	0.024		
04-Jun-02	Philip	8.17	576	299	30.4	2	0.7	11	0.75	< 0.03	0.006	38	< 1	7	5	88	< 0.01	0.08	< 0.1	0.08		
03-Dec-02	Philip	7.93	683	300	31.6	2	< 0.5	< 5	0.18	< 0.03	0.213	50.4	< 1	17.4	7.2	92.8	0.01	0.01	< 0.1	0.022		
02-Jun-03	Philip	7.65	699	287	33.6	1	0.7	9	0.56	< 0.03	< 0.001	53.8	12	23.3	4.9	97.2	< 0.01	0.01		0.042		
01-Dec-03	Philip	7.8	665	375	35.8	1.4	0.8	5	0.2	< 0.03	0.036	29.4	< 1	11.9	7.5	103	0.05	0.1	< 0.1	0.06		
09-Jun-04	Philip	7.72	610	291	30.4	< 1	< 0.5	7	0.48	< 0.03	0.004	44.8	< 1	16.7	5.7	105	0.05	0.02		0.252	< 0.20	4.6
30-Nov-04	Philip	7.71	810	369	35.4	2	< 0.5	20	0.91	< 0.03	0.002	29.8	< 1	51.8	19.9	110	< 0.01	0.04		0.055		
03-Aug-05	Maxx	7.98	800	345	38	2	< 2	19	1.1	< 0.05	< 0.02	25	< 1	55	12	110	0.15	0.014	< 0.05	0.061		
28-Nov-05	Maxx	8.06	846	506	45		< 2	7	0.5	< 0.05	< 0.02	17	< 1	11	14	140	< 0.05	0.063	< 0.05	0.09		
01-Jun-06	MAX	8	1090	403	41	1.7	< 2	12	0.7	< 0.05	< 0.02	21	< 1	132	30	120	< 0.02	0.019	< 0.05	0.072		
04-Dec-06	MAX	7.9	1070	471	41	2	< 2	< 4	0.4	0.08	< 0.02	26	< 1	65	32	140	< 0.02	0.035	< 0.05	0.089		
30-Mar-07	MAX	8.1	977	419	38	1.9	< 2	< 4	0.4	0.08	< 0.02	22	< 1	65	40	130	< 0.02	0.032	< 0.05	0.072		
14-Jun-07	MAX	8.1	971	383	35	2	< 2	5	0.4	0.09	< 0.02	24	< 1	79	38	130	< 0.02	0.029	< 0.05	0.07		
05-Dec-07	MAX	8	1260	363	36	2	< 2	14	0.2	< 0.05	< 0.02	49	< 1	160	88	120	< 0.02	0.021	< 0.1	0.07	< 0.01	3.3
25-Jun-08	MAX	8.1	1340	309	45	2.4		4	0.5	< 0.05	< 0.02	29	< 1	200	49	160	< 0.02	0.017	< 0.1	0.093	< 0.01	6
09-Dec-08	MAX	8	1180	348	28	2.5	< 2	< 4	0.3	< 0.05	< 0.02	35	< 1	160	83	120	< 0.02	0.033	< 0.1	0.07	< 0.01	2.6
25-Jun-09	MAX	7.7	1190	355	31	2.2	< 2	< 4	0.3	< 0.05	< 0.02	24	< 1	160	78	130	< 0.02	0.029	< 0.1	0.092	0.02	4.1
16-Dec-09	MAX	7.9	1030	338	29	2.4	< 2	9	0.5	0.29	0.03	28	< 1	120	73	110	2.5	0.028	< 0.1	0.018	< 0.01	2.7
28-Jun-10	MAX	7.9	1050	402	30	2	< 2	7	0.3	< 0.05	0.02	28	< 1	83	50	130	< 0.02	0.031	< 0.1	0.095	0.02	2.4
20-Dec-10	MAX	7.71	1120	357	31	2.2	< 2	< 4	0.2	< 0.05	< 0.02	36	< 1	130	59	140	< 0.02	0.026	< 0.1	0.089	< 0.01	2.1
16-Jun-11	MAX	7.76	1040	423	30	2	< 2	11	0.3	< 0.05	< 0.02	24	< 1	77	50	140	< 0.02	0.026	< 0.1	0.12	0.03	2.2
13-Dec-11	MAX	7.86	987	407	30	2.1	< 2	14	1.1	< 0.05	0.32	21	< 1	62	39	130	20	0.027	< 0.1	0.13	< 0.01	2
20-Jun-12	MAX	7.69	1100	440	30	2.1	< 2	13	0.53	< 0.05	0.043	28	< 1	68	44	140	1.4	0.029	< 0.1	0.12	0.02	2.3
11-Dec-12	MAX	7.74	1000	410	28	2.1	< 2	< 4	1.4	< 0.05	< 0.04	33	< 1	66	37	140	1.2	0.029	< 0.1	0.11	0.01	3
17-Jun-13	MAX	7.78	1100	420	30	1.8	< 2	30	1.4	0.096	0.35	30	< 1	89	38	140	11	0.032	< 0.1	0.15	0.10	3.5
09-Dec-13	MAX	7.69	1100	440	27	2	< 2	< 4	0.31	< 0.05	0.027	24	< 1	83	49	140	< 0.02	0.025	< 0.1	0.13	0.03	2.4

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

Monitor
14a-01
Bedrock

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
04-Dec-01	Philip	7.95	674	263	27.9	< 1	2	10	0.23	< 0.03	0.011	64.8	< 1	26.6	27.4	84	0.25	0.04	< 0.1	0.128		
04-Jun-02	Philip	8.44	556	240	22.4	2	1.4	8	0.5	< 0.03	0.006	56.1	< 1	10.7	24.9	63.5	< 0.01	0.04	< 0.1	0.007		
03-Dec-02	Philip	8.01	519	240	23.7	< 1	< 0.5	< 5	0.25	< 0.03	0.006	38.8	< 1	4.8	11.5	65.3	< 0.01	0.01	< 0.1	0.007		
02-Jun-03	Philip	7.82	489	215	23.3	1	1.1	15	0.13	0.03	< 0.001	49.7	29	7	20	64.6	0.13	0.02		0.006		
01-Dec-03	Philip	8.18	542	232	23.7	< 1	0.7	7	0.24	< 0.03	0.003	53.1	< 1	12	18.2	72.9	0.05	0.03	< 0.1	0.083		
09-Jun-04	Philip	8.04	527	234	25.7	< 1	< 0.5	19	0.86	0.03	0.004	61.2	< 1	14.2	19.6	69.3	0.01	0.02		< 0.005	< 0.20	< 0.2
30-Nov-04	Philip	7.92	527	236	24.4	1	< 0.5	< 5	0.06	< 0.03	< 0.002	48.6	< 1	12.8	9.1	68.1	0.03	< 0.01		< 0.005		
03-Aug-05	Maxx	8.22	533	234	26	1.1	< 2	15	1.1	< 0.05	< 0.02	51	< 1	11	19	67	< 0.05	0.031	0.069	< 0.005		
28-Nov-05	Maxx	8.18	529	242	29		< 2	9	0.4	< 0.05	< 0.02	42	< 1	15	14	78	0.16	0.018	< 0.05	< 0.005		
01-Jun-06	MAX	8.2	605	253	28	1.1	< 2	9	0.4	< 0.05	< 0.02	52	< 1	15	16	77	0.14	0.022	< 0.05	< 0.005		
04-Dec-06	MAX	8.2	597	253	26	1	< 2	< 4	0.2	0.08	< 0.02	61	< 1	13	14	74	0.11	0.017	< 0.05	< 0.005		
30-Mar-07	MAX	8.2	599	249	24	0.99	< 2	< 4	0.2	0.06	< 0.02	61	< 1	13	13	72	< 0.02	0.018	< 0.05	< 0.005		
14-Jun-07	MAX	8.1	601	243	29	1.1	< 2	< 4	0.2	0.1	< 0.02	63	< 1	14	12	80	< 0.02	0.015	< 0.05	0.01		
05-Dec-07	MAX	8.2	603	241	27	1.2	< 2	12	0.1	< 0.05	< 0.02	62	< 1	12	16	77	< 0.02	0.013	< 0.1	< 0.005	< 0.01	< 0.1
25-Jun-08	MAX	8.2	590	236	29	1.1		7	0.3	< 0.05	< 0.02	58	< 1	15	11	80	< 0.02	< 0.01	< 0.1	< 0.005	< 0.01	< 0.1
09-Dec-08	MAX	8	606	239	26	1.1	< 2	< 4	0.2	< 0.05	0.04	67	< 1	17	14	72	< 0.02	0.016	< 0.1	< 0.005	< 0.01	< 0.1
25-Jun-09	MAX	8	635	237	29	1.2	< 2	< 4	0.2	< 0.05	< 0.02	71	< 1	21	16	86	0.06	0.022	< 0.1	< 0.005	< 0.01	< 0.1
16-Dec-09	MAX	7.9	629	242	29	1.2	< 2	< 4	0.1	< 0.05	< 0.02	64	< 1	20	17	79	0.03	0.017	< 0.1	< 0.005	< 0.01	< 0.1
29-Jun-10	MAX	8.1	599	231	26	0.98	< 2	6	0.2	< 0.05	0.02	64	< 1	19	10	75	< 0.02	0.016	< 0.1	< 0.005	< 0.01	< 0.1
20-Dec-10	MAX	7.92	672	252	27	1.2	< 2	< 4	0.2	< 0.05	< 0.02	65	< 1	23	19	77	< 0.02	0.017	< 0.1	< 0.005	< 0.01	< 0.1
15-Jun-11	MAX	7.96	666	239	28	1.2	< 2	14	0.1	< 0.05	< 0.02	73	< 1	28	16	83	0.11	0.023	< 0.1	< 0.005	< 0.01	< 0.1
14-Dec-11	MAX	8.13	652	240	28	1.2	< 2	< 4	0.2	< 0.05	< 0.02	65	< 1	23	17	81	0.14	0.015	< 0.1	0.014	< 0.01	< 0.1
19-Jun-12	MAX	8.06	620	240	27	1.1	< 2	7.6	0.15	< 0.05	0.022	57	< 1	20	14	76	0.09	0.019	< 0.1	0.018	< 0.01	< 0.1
17-Dec-12	MAX	7.72	620	240	28	1.1	< 2	7	0.31	< 0.05	< 0.02	62	< 1	20	18	81	0.16	0.012	< 0.1	######	< 0.01	< 0.1
18-Jun-13	MAX	8.05	620	240	25	1.3	< 2	< 4	0.22	< 0.05	0.025	63	< 1	20	29	74	0.29	0.024	< 0.1	< 0.005	< 0.01	< 0.1
04-Dec-13	MAX	7.94	650	250	27	1.2	< 2	11	0.31	< 0.05	0.041	63	< 1	24	22	76	0.02	0.023	< 0.1	0.008	< 0.01	< 0.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Monitor
14b-01
Outwash

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
04-Dec-01	Philip	7.94	716	336	30.3	< 1	1.3	12	0.3	< 0.03	0.009	62.9	< 1	22.3	8.2	114	0.15	0.05	< 0.1	0.269		
04-Jun-02	Philip	8.41	776	279	30.2	2	1	21	0.34	0.06	1.11	89.4	< 1	58.4	20.9	100	< 0.01	0.02	< 0.1	0.195		
03-Dec-02	Philip	8.07	680	277	29.7	2	0.7	12	0.68	< 0.03	0.005	58.1	< 1	24.1	7.7	95.4	0.01	< 0.01	< 0.1	0.081		
02-Jun-03	Philip	7.59	845	270	26.2	2	0.8	18	0.62	0.04	< 0.001	33.7	13	85.8	32.7	104	0.37	0.02		0.121		
01-Dec-03	Philip	7.84	895	342	30.1	< 1	< 0.5	27	0.9	0.22	0.005	29.6	< 1	101	40.4	112	0.73	0.02	< 0.1	0.245		
09-Jun-04	Philip	7.55	771	327	27.9	1.2	< 0.5	20	0.7	0.14	0.002	39.2	2	70.6	33.8	129	0.8	0.01		0.505	< 0.20	< 0.2
30-Nov-04	Philip	7.65	878	364	31.3	< 1	< 0.5	34	1.37	0.15	0.004	30.6	< 1	91.4	34.2	123	1.22	0.02		0.369		
03-Aug-05	Maxx	7.93	818	267	29	2.3	< 2	20	1.3	0.06	< 0.02	83	< 1	73	31	110	0.91	0.013	0.059	0.11		
28-Nov-05	Maxx	8.09	1070	305	38		6	12	0.6	0.09	< 0.02	77	< 1	143	49	140	1.3	0.02	< 0.05	0.12		
01-Jun-06	MAX	8	1100	361	36	2	< 2	11	0.5	0.06	0.03	59	< 1	129	60	120	0.29	0.021	< 0.05	0.26		
04-Dec-06	MAX	8	1120	438	37	2	< 2	9	0.9	0.09	< 0.02	64	< 1	92	67	130	0.15	0.025	< 0.05	0.33		
30-Mar-07	MAX	8.1	901	347	32	1.7	< 2	15	0.3	0.07	< 0.02	46	< 1	67	49	110	0.03	0.023	< 0.05	0.42		
14-Jun-07	MAX	8.1	909	295	36	2	< 2	8	0.2	0.09	< 0.02	87	< 1	75	39	110	0.13	0.026	< 0.05	0.18		
05-Dec-07	MAX	8.1	1040	294	35	1.9	< 2	13	0.3	< 0.05	< 0.02	88	< 1	120	42	120	< 0.02	0.012	< 0.1	0.35	< 0.01	< 0.1
25-Jun-08	MAX	8	1270	326	35	2.6		6	0.3	< 0.05	< 0.02	84	< 1	180	100	120	< 0.02	0.016	< 0.1	0.4	< 0.01	0.4
09-Dec-08	MAX	8	1310	423	33	2.2	< 2	4	0.3	< 0.05	< 0.02	58	< 1	150	110	120	0.02	0.022	< 0.1	0.41	< 0.01	0.1
25-Jun-09	MAX	7.8	1670	357	33	2.6	< 2	< 4	0.2	< 0.05	0.02	52	< 1	280	170	130	< 0.02	0.025	< 0.1	0.87	< 0.01	0.2
15-Dec-09	MAX	7.7	1670	398	32	2.2	< 2	4	0.3	< 0.05	0.03	42	< 1	260	170	130	< 0.02	0.016	< 0.1	0.7	< 0.01	< 0.1
29-Jun-10	MAX	8	1230	365	27	2.3	< 2	9	0.4	< 0.05	< 0.02	47	< 1	150	120	110	< 0.02	0.027	< 0.1	0.79	< 0.01	0.3
20-Dec-10	MAX	7.76	1240	420	< 0.05	< 0.2	< 2	7	0.3	< 0.05	< 0.02	38	< 1	130	< 0.1	< 0.2	< 0.02	< 0.01	< 0.1	< 0.005	< 0.01	4
14-Jun-11	MAX	7.74	1170	370	30	2.2	< 2	8	0.4	< 0.05	< 0.02	35	< 1	130	94	120	< 0.02	0.022	< 0.1	1.4	< 0.01	3.5
14-Dec-11	MAX	8.05	977	386	24	1.9	< 2	15	3	< 0.05	1	32	< 1	63	88	93	61	0.018	< 0.1	0.72	< 0.01	1.2
19-Jun-12	MAX	7.82	1200	340	32	2.3	< 2	9.7	0.84	< 0.05	0.65	37	< 1	150	82	130	39	0.02	< 0.1	1.4	< 0.01	< 0.1
17-Dec-12	MAX	7.48	1100	410	30	2	< 2	46	2.9	0.073	1.5	35	< 1	92	91	130	27	0.015	< 0.1	0.94	< 0.01	0.4
18-Jun-13	MAX	7.81	1600	380	40	2.6	< 2	< 4	0.33	< 0.05	0.089	43	< 1	250	120	180	3.2	0.022	< 0.1	1.7	< 0.01	1.6
04-Dec-13	MAX	7.68	1100	430	37	1.9	< 2	8.1	0.84	< 0.05	0.11	29	< 1	81	78	140	< 0.02	0.025	0.11	1.2	< 0.01	0.95

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

	Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
Monitor	04-Dec-01	Philip	7.95	754	259	35.1	< 1	0.6	< 5	0.16	< 0.03	0.006	92.4	< 1	48.3	7.7	104	0.27	< 0.01	< 0.1	< 0.005		
15a-01	04-Jun-02	Philip	8.13	718	254	34.9	1	< 0.5	< 5	0.15	< 0.03	0.086	94.1	< 1	52.8	8.3	103	0.4	< 0.01	< 0.1	< 0.005		
Bedrock	03-Dec-02	Philip	8.06	794	260	35.7	2	< 0.5	8	0.49	0.03	0.011	92.3	< 1	57.6	10.6	106	0.47	< 0.01	< 0.1	< 0.005		
	02-Jun-03	Philip	7.87	789	246	36	1	< 0.5	6	0.15	< 0.03	< 0.001	99	15	56.2	12.2	107	0.5	< 0.01		< 0.005		
	01-Dec-03	Philip	8.17	754	245	32.5	< 1	< 0.5	7	0.19	< 0.03	0.007	101	< 1	60.7	11.5	103	0.5	< 0.01	< 0.1	0.072		
	09-Jun-04	Philip	7.85	734	258	34.9	< 1	< 0.5	6	0.16	< 0.03	0.004	105	< 1	62.4	13	129	0.55	0.01		0.335	< 0.20	< 0.2
	30-Nov-04	Philip	7.97	754	257	33.7	1	< 0.5	< 5	0.16	< 0.03	0.005	105	< 1	61.5	13.7	101	0.52	< 0.01		< 0.005		
	03-Aug-05	Maxx	8.14	737	254	35	1.1	< 2	5	0.4	< 0.05	< 0.02	91	< 1	49	15	100	0.55	< 0.01	< 0.05	< 0.005		
	28-Nov-05	Maxx	8.22	736	262	37		< 2	6	0.4	< 0.05	< 0.02	88	< 1	47	16	110	0.58	< 0.01	< 0.05	< 0.005		
	01-Jun-06	MAX	8.1	790	268	33	1	< 2	10	0.4	< 0.05	< 0.02	74	1	59	15	92	0.46	0.011	< 0.05	< 0.005		
	04-Dec-06	MAX	8	811	271	35	1.1	< 2	< 4	0.3	0.18	< 0.02	79	< 1	55	17	100	0.55	0.011	< 0.05	< 0.005		
	30-Mar-07	MAX	8.1	808	263	29	1	< 2	< 4	0.3	0.1	< 0.02	92	< 1	54	15	88	0.56	0.01	< 0.05	< 0.005		
	14-Jun-07	MAX	8.1	799	258	36	1.3	< 2	< 4	0.4	0.11	< 0.02	95	< 1	51	18	110	0.4	0.011	< 0.05	< 0.005		
	05-Dec-07	MAX	8.2	799	255	35	1.2	< 2	13	0.2	0.09	< 0.02	100	< 1	51	19	110	0.47	0.012	< 0.1	< 0.005	< 0.01	< 0.1
	25-Jun-08	MAX	8.3	783	249	33	1.4		10	0.4	< 0.05	< 0.02	104	< 1	45	19	100	0.07	< 0.01	< 0.1	0.042	< 0.01	< 0.1
	09-Dec-08	MAX	8	786	252	32	1.2	< 2	< 4	0.3	0.07	< 0.02	116	< 1	42	19	96	0.45	0.013	< 0.1	< 0.005	< 0.01	< 0.1
	25-Jun-09	MAX	8	783	249	34	1.2	< 2	4	0.2	< 0.05	< 0.02	110	< 1	43	20	96	0.57	0.034	< 0.1	< 0.005	< 0.01	< 0.1
	16-Dec-09	MAX	8	802	251	32	1.2	2	< 4	0.2	< 0.05	< 0.02	110	< 1	48	19	100	0.62	0.015	< 0.1	< 0.005	< 0.01	< 0.1
	28-Jun-10	MAX	8.1	818	245	34	1.2	< 2	6	0.3	< 0.05	0.02	110	< 1	47	19	100	0.64	0.021	< 0.1	< 0.005	< 0.01	< 0.1
	22-Dec-10	MAX	7.85	844	251	37	1.3	< 2	< 4	0.2	< 0.05	< 0.02	110	< 1	56	21	110	0.64	0.016	< 0.1	< 0.005	< 0.01	< 0.1
	14-Jun-11	MAX	7.92	824	243	35	1.3	< 2	7	0.3	< 0.05	0.02	100	< 1	56	19	110	0.71	0.017	< 0.1	< 0.005	< 0.01	< 0.1
	15-Dec-11	MAX	8.02	857	247	39	1.4	< 2	< 4	0.2	0.05	< 0.02	100	< 1	61	24	120	0.19	0.012	< 0.1	< 0.005	< 0.01	< 0.1
	18-Jun-12	MAX	7.94	860	250	34	1.2	< 2	12	0.2	< 0.05	< 0.02	98	< 1	62	21	100	0.78	0.013	< 0.1	< 0.005	< 0.01	< 0.1
	11-Dec-12	MAX	7.87	860	250	34	1.3	< 2	< 4	0.59	0.057	< 0.02	110	< 1	63	22	110	0.66	0.02	< 0.1	< 0.005	< 0.01	< 0.1
	19-Jun-13	MAX	8.17	860	260	30	1.2	< 2	9.9	0.17	0.064	< 0.02	110	< 1	63	20	98	0.74	0.025	< 0.1	< 0.005	< 0.01	< 0.1
	03-Dec-13	MAX	7.83	850	250	31	1.1	< 2	< 4	0.28	< 0.05	< 0.02	94	< 1	67	21	92	0.74	0.025	< 0.1	0.006	< 0.01	< 0.1

AECOM

	Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
Monitor	04-Dec-01	Philip	8.16	646	252	27	< 1	4.4	13	0.27	< 0.03	0.014	26.2	< 1	24.4	6.2	77.7	< 0.01	0.08	< 0.1	0.143		
15b-01	04-Jun-02	Philip	8.1	475	215	21.1	1	0.9	11	0.79	< 0.03	0.008	13.8	< 1	6.9	2	73.4	< 0.01	< 0.01	< 0.1	0.007		
Outwash	03-Dec-02	Philip	7.95	723	200	29.4	2	0.9	12	0.75	< 0.03	0.012	14.3	< 1	9.1	2	103	< 0.01	0.01	< 0.1	0.009		
	02-Jun-03	Philip	7.95	534	214	22.4	< 1	1.4	12	0.66	< 0.03	0.002	37.1	10	5.2	5	77.2	< 0.01	0.01		0.009		
	01-Dec-03	Philip	8.08	661	291	27.5	1.1	< 0.5	25	0.74	< 0.03	0.003	40.5	< 1	7.9	10.7	95	< 0.01	0.04	< 0.1	0.01		
	09-Jun-04	Philip	7.94	478	204	18.7	< 1	< 0.5	11	0.45	< 0.03	0.002	24.2	< 1	24.8	4	74	0.01	< 0.01		0.047	< 0.20	4.1
	30-Nov-04	Philip	7.99	558	240	21.8	< 1	< 0.5	12	0.58	< 0.03	0.002	22.4	< 1	27.9	3.3	83	< 0.01	0.01		0.008		
	03-Aug-05	Maxx	8.06	668	335	30	0.98	< 2	18	1.4	< 0.05	< 0.02	16	< 1	10	4.6	120	0.097	< 0.01	< 0.05	0.03		
	28-Nov-05	Maxx	7.97	1150	533	53		< 2	9	0.8	< 0.05	< 0.02	26	< 1	56	10	190	< 0.05	0.039	< 0.05	0.045		
	01-Jun-06	MAX	8	853	462	32	0.97	< 2	11	0.7	< 0.05	0.02	15	< 1	8	12	120	< 0.02	0.025	< 0.05	0.026		
	04-Dec-06	MAX	7.8	949	490	36	1.2	< 2	7	0.4	< 0.05	< 0.02	24	< 1	4	16	150	0.29	0.045	< 0.05	0.034		
	30-Mar-07	MAX	8.1	955	484	38	0.92	< 2	< 4	0.4	0.09	< 0.02	28	< 1	13	9.2	150	< 0.02	0.026	< 0.05	0.008		
	14-Jun-07	MAX	8.1	996	478	38	1	< 2	7	0.3	0.1	< 0.02	25	< 1	35	8.7	160	< 0.02	0.023	< 0.05	0.041		
	05-Dec-07	MAX	8	1130	481	42	1.3	< 2	17	0.4	< 0.05	< 0.02	28	< 1	38	15	180	< 0.02	0.042	< 0.1	0.049	< 0.10	15
	25-Jun-08	MAX	8.1	1330	449	31	1.3		4	0.4	< 0.05	< 0.02	23	< 1	130	94	150	< 0.02	0.016	< 0.1	0.036	< 0.10	13
	09-Dec-08	MAX	8	1100	544	25	1.2	< 2	6	0.4	< 0.05	< 0.02	18	< 1	21	90	120	< 0.02	0.038	< 0.1	0.037	< 0.01	8.6
	25-Jun-09	MAX	7.7	1160	423	37	1.1	< 2	6	0.4	< 0.05	< 0.02	27	< 1	110	45	170	< 0.02	0.023	< 0.1	0.043	< 0.01	5.7
	16-Dec-09	MAX	7.8	1070	540	24	1.2	< 2	< 4	0.3	< 0.05	< 0.02	16	< 1	15	98	120	< 0.02	0.034	< 0.1	0.039	< 0.01	10
	25-Jun-10	MAX	7.8	1720	393	43	1.4	< 2	8	0.4	< 0.05	0.02	25	< 1	270	85	210	< 0.02	0.026	< 0.1	0.053	< 0.01	9.7
	17-Dec-10	MAX	7.6	1380	521	30	1.4	< 2	6	0.3	< 0.05	< 0.02	17	< 1	120	130	150	< 0.02	0.041	< 0.1	0.045	< 0.01	4.6
	14-Jun-11	MAX	7.73	1150	402	26	1.1	< 2	13	0.4	< 0.05	< 0.02	23	< 1	110	93	130	< 0.02	0.024	0.11	0.032	< 0.01	5.8
	15-Dec-11	MAX	7.84	1130	465	30	1.4	< 2	19	1.2	< 0.05	1.2	36	< 1	49	110	140	6.7	0.023	< 0.1	0.055	< 0.01	8.8
	18-Jun-12	MAX	7.68	1200	440	33	1	< 2	15	1	< 0.05	0.34	38	< 1	74	57	150	25	0.014	< 0.1	0.052	< 0.01	13
	11-Dec-12	MAX	7.66	1000	410	32	1.1	< 2	< 4	0.22	0.11	< 0.1	63	< 1	36	38	170	< 0.02	0.025	< 0.1	0.23	< 0.01	8.5
	19-Jun-13	MAX	7.5	1100	340	26	0.89	< 2	4.1	0.35	0.061	0.12	63	< 1	78	40	140	6.5	0.017	< 0.1	0.036	< 0.01	7.8
	03-Dec-13	MAX	7.52	910	410	32	1.1	< 2	< 4	1.3	< 0.05	0.075	34	< 1	30	26	140	< 0.02	0.024	< 0.1	0.039	< 0.01	3.5
Monitor	26-Mar-08	MAX	8	691	251	29	3.6	< 2	4	0.4	0.16	< 0.02	70	< 1	36	42	76	< 0.02	0.039	< 0.1	0.053	0.02	< 0.1
16A-08	25-Jun-08	MAX	8.3	596	238	28	2.7		7	0.5	0.19	< 0.02	46	< 1	28	6.2	82	< 0.02	0.022	< 0.1	0.04	< 0.01	< 0.1
Bedrock	09-Dec-08	MAX	8.1	605	239	26	2	< 2	< 4	0.3	0.06	< 0.02	39	< 1	29	2.5	77	< 0.02	0.025	< 0.1	0.039	< 0.01	< 0.1
	25-Jun-09	MAX	8	645	239	29	2	< 2	< 4	0.3	0.05	< 0.02	47	< 1	39	4	88	< 0.02	0.029	< 0.1	0.043	< 0.01	< 0.1
	16-Dec-09	MAX	8.1	636	240	29	2	< 2	7	0.2	0.07	0.03	42	< 1	36	3.6	87	< 0.02	0.027	< 0.1	0.043	< 0.01	< 0.1
	28-Jun-10	MAX	7.9	634	236	27	1.8	< 2	4	0.2	< 0.05	0.02	53	< 1	31	2.1	83	< 0.02	0.029	< 0.1	0.035	< 0.01	< 0.1
	20-Dec-10	MAX	7.94	630	236	29	1.9	< 2	< 4	0.2	0.05	< 0.02	41	< 1	33	2.2	88	0.04	0.027	< 0.1	0.025	0.01	< 0.1
	16-Jun-11	MAX	7.99	620	232	29	2	< 2	18	0.4	0.06	< 0.02	58	< 1	34	2.2	88	0.06	0.025	< 0.1	0.021	< 0.01	< 0.1
	13-Dec-11	MAX	8.08	653	239	30	2	< 2	< 4	0.3	< 0.05	< 0.02	43	< 1	35	3.5	87	0.63	0.021	< 0.1	0.037	< 0.01	< 0.1
	20-Jun-12	MAX	8.03	640	230	27	1.9	< 2	10	0.19	< 0.05	0.033	39	< 1	33	2.7	84	0.48	0.025	< 0.1	0.032	< 0.01	< 0.1
	12-Dec-12	MAX	8.02	620	250	27	1.8	< 2	< 4	0.27	0.091	< 0.02	43	< 1	32	2.5	86	0.3	0.027	< 0.1	0.029	< 0.01	< 0.1
	17-Jun-13	MAX	8.07	620	230	27	1.7	< 2	< 4	0.26	0.064	< 0.02	40	< 1	31	2.3	79	0.37	0.028	< 0.1	0.026	< 0.01	< 0.1
	09-Dec-13	MAX	8.02	630	240	27	1.8	< 2	< 4	0.23	0.052	< 0.02	37	< 1	32	2.2	83	0.38	0.022	< 0.1	0.023	< 0.01	< 0.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

	Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
Monitor	26-Mar-08	MAX	8	1130	477	42	1.5	< 2	15	0.9	0.09	< 0.02	105	< 1	38	60	130	< 0.02	0.027	< 0.1	0.16	0.12	3.3
16B-08	25-Jun-08	MAX	8.2	1170	318	43	2.4		14	0.3	< 0.05	< 0.02	68	< 1	160	42	130	< 0.02	< 0.01	< 0.1	1.1	< 0.01	< 0.1
Outwash	09-Dec-08	MAX	7.8	1290	597	51	2.1	< 2	17	0.8	< 0.05	< 0.02	50	< 1	53	39	170	< 0.02	0.028	< 0.1	0.72	< 0.01	2.9
	25-Jun-09	MAX	7.8	1640	382	46	3.1	< 2	9	0.4	< 0.05	< 0.02	58	< 1	260	150	150	< 0.02	0.022	< 0.1	1.8	< 0.01	< 0.1
	15-Dec-09	MAX	7.6	1350	555	48	2.1	< 2	19	0.5	< 0.05	0.03	48	< 1	96	71	160	0.03	0.033	< 0.1	1.1	< 0.01	< 0.1
	23-Jun-10	MAX	7.9	1470	373	41	2.8	< 2	9	0.4	< 0.05	0.02	79	< 1	210	120	130	< 0.02	0.022	< 0.1	1.3	< 0.01	< 0.1
	20-Dec-10	MAX	7.55	1240	586	49	1.6	< 2	22	0.8	< 0.05	< 0.02	49	< 1	39	46	170	< 0.02	0.029	< 0.1	0.75	0.03	1.8
	16-Jun-11	MAX	7.78	1340	383	37	2.6	< 2	20	0.4	< 0.05	< 0.02	63	< 1	170	130	120	0.09	0.021	< 0.1	1.3	0.02	0.9
	13-Dec-11	MAX	7.73	1190	518	50	1.3	< 2	17	1.1	< 0.05	0.13	71	< 1	23	38	160	1.3	0.033	< 0.1	0.49	0.03	10
	20-Jun-12	MAX	7.78	1200	360	27	2.1	< 2	14	0.45	< 0.05	< 0.02	38	< 1	120	120	89	0.18	0.021	< 0.1	0.55	< 0.01	< 0.1
	12-Dec-12	MAX	7.75	1100	560	45	1.1	< 2	16	0.74	< 0.05	< 0.02	55	< 5	10	23	170	0.14	0.034	< 0.1	0.53	0.01	5
	17-Jun-13	MAX	7.89	1200	370	30	2.1	< 2	7.3	0.35	< 0.05	< 0.02	41	< 1	130	110	97	0.1	0.021	< 0.1	0.92	< 0.01	< 0.1
	09-Dec-13	MAX	7.58	1200	570	47	1.5	< 2	6.6	0.78	< 0.05	< 0.02	43	< 1	38	43	160	< 0.02	0.031	< 0.1	0.72	< 0.01	0.49
Monitor	26-Mar-08	MAX	8.2	721	248	28	2.1	< 2	7	0.6	0.21	< 0.02	96	< 1	29	67	64	< 0.02	0.039	< 0.1	0.007	< 0.01	0.3
17A-08	25-Jun-08	MAX	8.3	643	233	30	2.2		< 4	0.5	0.29	< 0.02	63	< 1	36	16	80	0.05	0.022	< 0.1	< 0.005	< 0.01	< 0.1
Bedrock	09-Dec-08	MAX	8.1	609	237	26	1.4	< 2	< 4	0.4	0.1	< 0.02	51	< 1	27	15	69	0.02	0.028	< 0.1	< 0.005	< 0.01	< 0.1
	25-Jun-09	MAX	8	608	230	28	1.6	< 2	< 4	0.4	0.18	< 0.02	51	< 1	29	10	77	0.13	0.028	< 0.1	< 0.005	< 0.01	< 0.1
	16-Dec-09	MAX	7.9	615	232	29	1.6	< 2	4	0.2	0.08	< 0.02	48	< 1	30	11	79	0.1	0.027	< 0.1	< 0.005	< 0.01	0.2
	23-Jun-10	MAX	8.1	645	229	30	1.6	< 2	< 4	0.5	0.13	< 0.02	59	< 1	34	12	79	0.11	0.027	< 0.1	< 0.005	< 0.01	< 0.1
	20-Dec-10	MAX	7.92	650	228	29	1.6	< 2	5	0.3	0.19	< 0.02	51	< 1	36	11	81	0.03	0.027	< 0.1	< 0.005	0.04	< 0.1
	16-Jun-11	MAX	8.02	647	225	29	1.6	< 2	11	0.3	0.17	< 0.02	57	< 1	38	12	83	0.05	0.024	< 0.1	< 0.005	< 0.01	< 0.1
	15-Dec-11	MAX	8.21	682	229	29	1.6	< 2	< 4	1	0.08	0.05	56	< 1	39	12	83	0.65	0.025	< 0.1	0.014	0.05	0.1
	20-Jun-12	MAX	8.04	680	230	30	1.6	< 2	10	0.37	0.073	0.03	55	< 1	38	12	84	0.86	0.027	< 0.1	< 0.005	< 0.01	< 0.1
	10-Dec-12	MAX	7.85	680	230	28	1.6	< 2	< 4	0.41	0.12	< 0.02	66	< 1	39	12	85	0.8	0.029	< 0.1	< 0.005	< 0.01	< 0.1
	17-Jun-13	MAX	8.06	690	230	29	1.5	< 2	< 4	0.41	0.14	0.075	61	< 1	41	13	78	2.1	0.026	< 0.1	< 0.005	< 0.01	< 0.1
	04-Dec-13	MAX	7.84	710	240	32	1.9	< 2	6.1	0.46	0.12	0.08	62	< 1	45	14	87	0.13	0.028	< 0.1	0.024	0.04	0.12
Monitor	26-Mar-08	MAX	8	2080	357	41	2.4	< 2	5	0.4	< 0.05	< 0.02	75	< 1	400	240	150	< 0.02	0.025	< 0.1	0.25	0.02	3.6
17B-08	25-Jun-08	MAX	8.3	2380	313	46	2.8		11	0.3	< 0.05	< 0.02	68	< 1	500	290	160	< 0.02	0.015	< 0.1	0.29	< 0.01	4.2
Outwash	09-Dec-08	MAX	8	1580	319	32	2.5	< 2	4	0.3	< 0.05	< 0.02	56	< 1	260	170	110	< 0.02	0.018	< 0.1	0.14	< 0.01	5.1
	25-Jun-09	MAX	7.8	2730	304	48	3.1	< 2	8	0.2	< 0.05	< 0.02	66	< 1	620	330	190	< 0.02	0.018	< 0.1	0.33	< 0.01	4.9
	16-Dec-09	MAX	7.7	1730	321	36	2.3	< 2	6	0.2	< 0.05	0.04	39	< 1	300	180	140	< 0.02	0.021	< 0.1	0.16	< 0.01	4.5
	23-Jun-10	MAX	8	1850	304	34	2.8	< 2	6	0.4	< 0.05	0.02	74	< 1	330	180	140	< 0.02	0.022	< 0.1	0.081	< 0.01	4
	20-Dec-10	MAX	7.82	1640	320	29	2.2	< 2	4	0.2	< 0.05	< 0.02	45	< 1	270	170	120	< 0.02	0.023	< 0.1	0.13	< 0.01	5
	16-Jun-11	MAX	7.77	2020	321	34	2.4	< 2	12	0.2	< 0.05	< 0.02	64	< 1	410	250	130	< 0.02	0.019	< 0.1	0.25	< 0.01	4.1
	15-Dec-11	MAX	8.07	1510	325	28	2.1	< 2	10	0.9	< 0.05	0.34	38	< 1	230	160	110	12	0.021	< 0.1	0.15	< 0.01	3.5
	20-Jun-12	MAX	7.8	2100	330	35	2.3	< 2	11	0.55	< 0.05	0.062	41	< 1	400	230	140	2.7	0.022	< 0.1	0.26	< 0.01	4.4
	10-Dec-12	MAX	7.7	2400	330	36	2.9	< 2	< 4	0.19	< 0.05	< 0.04	59	< 1	480	260	170	1.2	0.026	< 0.1	0.22	< 0.01	3
	17-Jun-13	MAX	7.91	1900	330	31	1.9	< 2	< 4	0.5	< 0.05	< 0.02	47	< 1	350	220	120	1.3	0.02	< 0.1	0.24	< 0.01	2.7
	04-Dec-13	MAX	7.82	1600	330	27	2	< 2	6.5	0.43	< 0.05	0.032	40	< 1	270	200	100	< 0.02	0.02	< 0.1	0.24	< 0.01	3.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Monitor	Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
Monitor	26-Mar-08	MAX	8.1	803	258	27	1.5	< 2	23	0.9	0.09	< 0.02	130	< 1	18	89	65	88	0.029	< 0.1	0.022	0.12	5.7
18A-08	25-Jun-08	MAX	8.3	632	243	28	3		12	0.3	< 0.05	< 0.02	36	< 1	19	20	81	< 0.02	< 0.01	< 0.1	0.25	< 0.01	7.3
Bedrock	09-Dec-08	MAX	8.1	613	247	27	1.1	< 2	< 4	0.5	0.16	< 0.02	35	< 1	16	6.1	76	< 0.02	< 0.01	< 0.1	0.12	< 0.01	6.7
	25-Jun-09	MAX	7.9	605	242	29	1.2	< 2	< 4	0.2	< 0.05	< 0.02	34	< 1	16	5	85	< 0.02	0.012	< 0.1	0.32	< 0.01	6.9
	15-Dec-09	MAX	7.9	628	246	28	1.3	< 2	< 4	0.2	< 0.05	0.04	36	< 1	16	4.5	82	< 0.02	0.01	< 0.1	0.35	< 0.01	8
	30-Jun-10	MAX	8	625	241	29	1.2	< 2	18	0.3	< 0.05	0.03	38	< 1	18	4.6	82	< 0.02	0.01	< 0.1	0.33	0.02	6.5
	22-Dec-10	MAX	7.85	628	241	31	1.2	< 2	< 4	< 0.1	< 0.05	< 0.02	37	< 1	18	4.6	88	< 0.02	< 0.01	< 0.1	0.36	< 0.01	6.8
	16-Jun-11	MAX	7.81	840	233	34	1.5	< 2	13	0.2	< 0.05	< 0.02	130	< 1	57	24	100	0.21	0.024	< 0.1	0.009	< 0.01	< 0.1
	16-Dec-11	MAX	7.91	621	251	27	1.2	< 2	32	2	0.33	1	36	2	16	4	78	20	< 0.01	< 0.1	0.22	0.02	5.3
	22-Jun-12	MAX	7.82	610	240	28	1.3	< 2	55	2.8	< 0.05	0.17	38	< 1	16	4.1	82	3.3	< 0.01	< 0.1	0.36	0.04	4.8
	17-Dec-12	MAX	7.59	610	250	30	1.2	< 2	< 4	< 0.1	< 0.05	0.082	38	< 1	16	4.5	91	2	< 0.01	< 0.1	0.41	< 0.01	5.1
	20-Jun-13	MAX	8.32	610	240	28	1.2	< 2	22	1.1	0.079	1.4	39	< 1	16	4.2	87	33	< 0.01	< 0.1	0.36	0.04	4.7
	09-Dec-13	MAX	7.81	620	240	28	1.1	< 2	6.1	0.66	0.17	0.11	37	< 1	16	4.3	81	0.05	< 0.01	< 0.1	0.37	< 0.01	5
Monitor	26-Mar-08	MAX	8.2	1020	284	12	2.1	< 2	53	1	0.12	0.02	223	< 1	8	270	29	150	0.07	< 0.1	0.021	0.05	1.6
18B-08	25-Jun-08	INS																					
Outwash	09-Dec-08	INS																					
	25-Jun-09	INS																					
	15-Dec-09	INS																					
	30-Jun-10	INS																					
	22-Dec-10	INS																					
	16-Jun-11	MAX	8.03	1080	424	18	5.5	< 2	14	0.4	< 0.05	0.03	120	< 1	19	190	60	< 0.02	0.1	< 0.1	< 0.005	< 0.01	4.4
	16-Dec-11	INS																					
	22-Jun-12	Dry																					
	17-Dec-12	INS																					
	20-Jun-13	INSV																					
	09-Dec-13	Dry																					
Monitor	26-Mar-08	MAX	8.1	844	245	37	1.4	< 2	13	0.3	0.1	0.03	143	< 1	45	47	94	0.02	0.03	< 0.1	< 0.005	0.02	< 0.1
19A-08	25-Jun-08	MAX	8.2	841	240	37	1.3		4	0.3	0.05	< 0.02	134	< 1	50	33	100	0.04	0.022	< 0.1	< 0.005	< 0.01	< 0.1
Bedrock	09-Dec-08	MAX	8.1	811	242	33	1.2	< 2	< 4	0.2	< 0.05	< 0.02	129	< 1	46	19	96	0.17	0.022	< 0.1	< 0.005	< 0.01	< 0.1
	25-Jun-09	MAX	7.9	768	236	35	1.2	< 2	2	0.2	< 0.05	< 0.02	140	< 1	27	12	100	0.17	0.026	< 0.1	< 0.005	< 0.01	< 0.1
	15-Dec-09	MAX	7.9	834	244	35	1.4	< 2	5	0.2	< 0.05	0.02	120	< 1	48	21	100	0.21	0.029	< 0.1	< 0.005	< 0.01	< 0.1
	30-Jun-10	MAX	7.8	788	234	33	1.2	< 2	6	0.2	< 0.05	0.03	130	< 1	37	16	100	0.2	0.023	< 0.1	< 0.005	< 0.01	< 0.1
	22-Dec-10	MAX	7.87	825	236	36	1.3	< 2	< 4	0.1	< 0.05	< 0.02	120	< 1	43	21	110	0.21	0.027	< 0.1	< 0.005	< 0.01	< 0.1
	15-Jun-11	MAX	7.95	838	235	35	1.4	< 2	17	0.2	< 0.05	< 0.02	130	< 1	60	25	100	0.24	0.033	< 0.1	< 0.005	< 0.01	< 0.1
	16-Dec-11	MAX	7.95	898	246	34	1.5	< 2	38	0.8	0.09	0.7	120	< 1	70	29	100	29	0.031	< 0.1	0.067	< 0.01	< 0.1
	22-Jun-12	MAX	7.87	880	240	35	1.4	< 2	< 4	0.49	< 0.05	0.055	110	< 1	65	28	110	2.4	0.028	< 0.1	< 0.005	< 0.01	< 0.1
	17-Dec-12	MAX	7.74	890	250	35	1.5	< 2	8.5	0.61	0.074	0.031	120	< 1	68	32	110	0.53	0.025	< 0.1	0.012	< 0.01	< 0.1
	20-Jun-13	MAX	8.13	860	240	34	1.5	< 2	< 4	0.18	0.071	< 0.02	120	< 1	63	27	110	0.77	0.036	< 0.1	< 0.005	< 0.01	< 0.1
	09-Dec-13	MAX	8.02	900	240	35	1.5	< 2	< 4	0.22	0.07	< 0.02	110	< 1	72	32	110	0.27	0.026	< 0.1	< 0.005	< 0.01	< 0.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

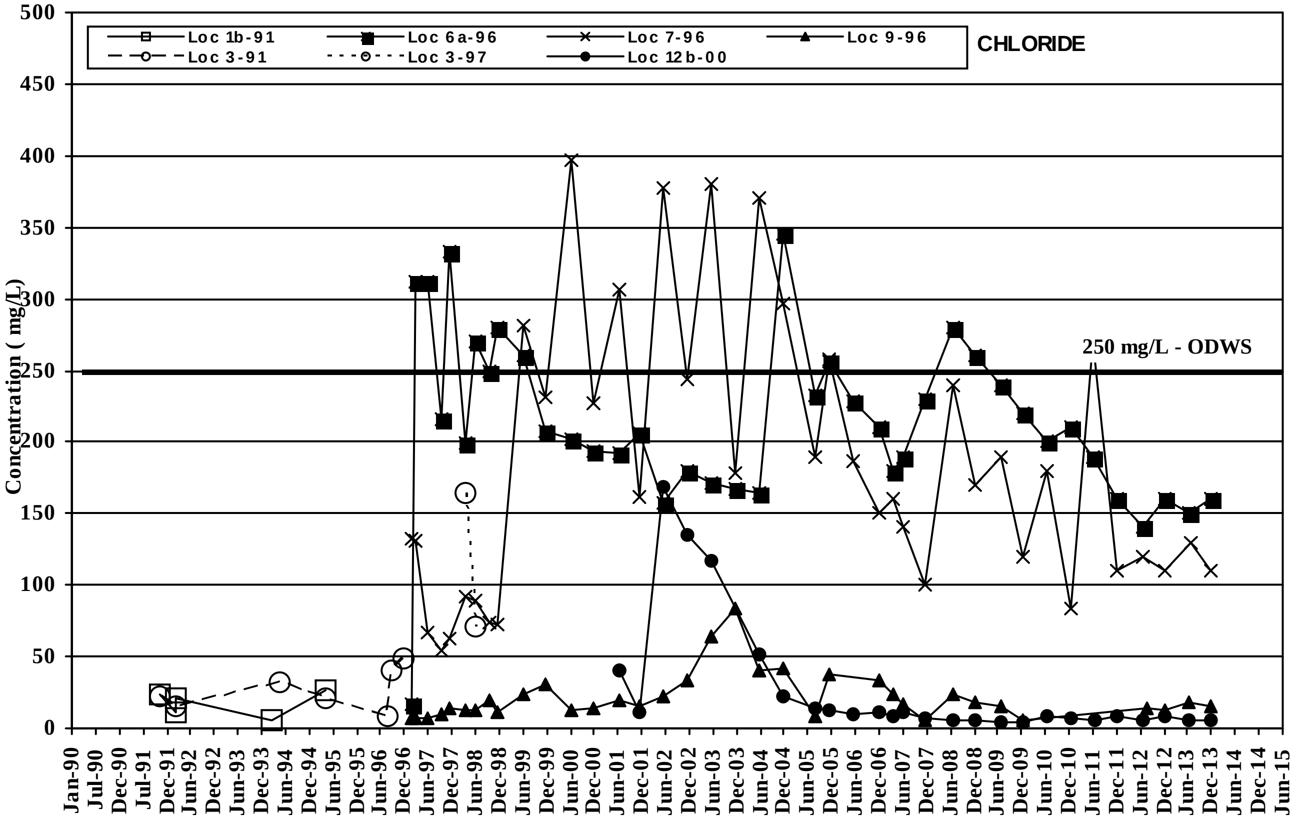
AECOM

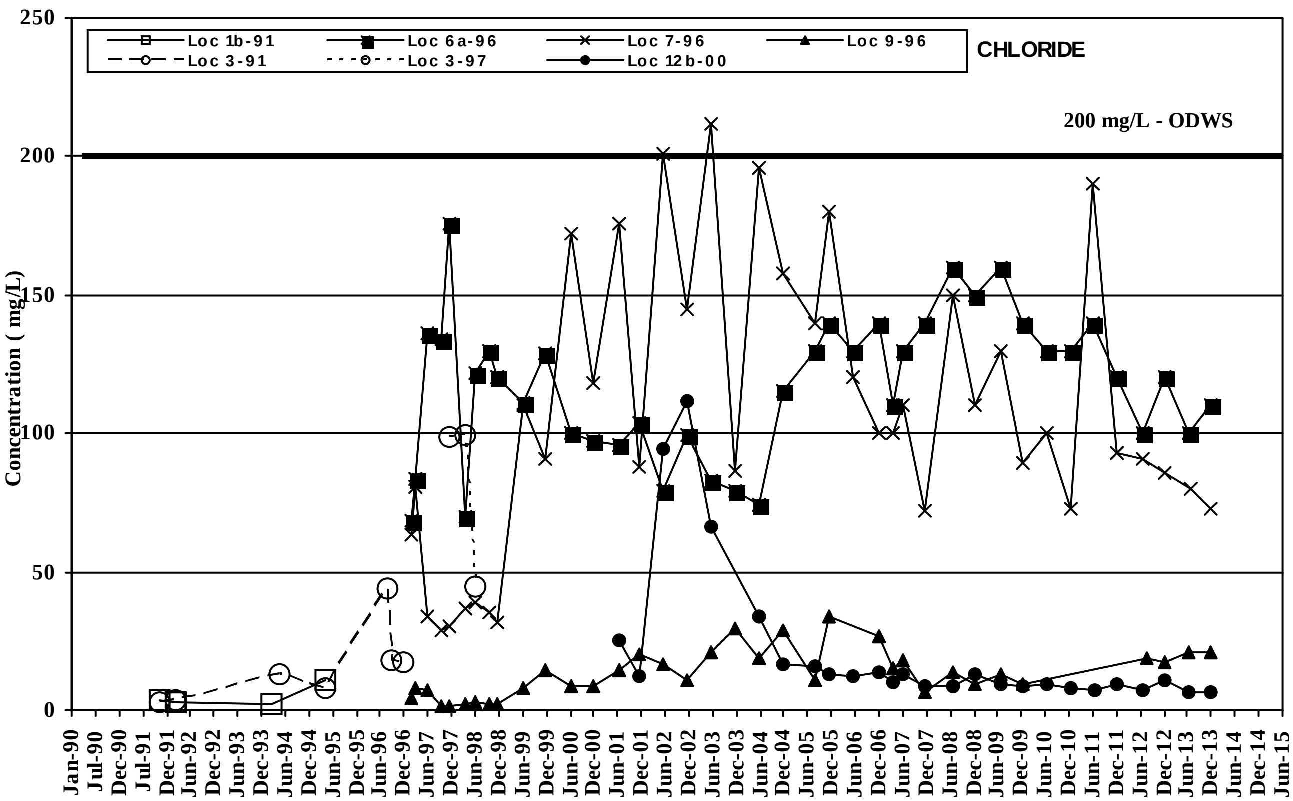
Monitor	Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
Monitor	26-Mar-08	MAX	8.1	1560	289	14	4.5	< 2	51	1.7	0.53	0.03	454	< 1	38	350	35	130	0.14	< 0.1	0.02	< 0.10	1
19B-08	25-Jun-08	MAX	8.3	2070	314	10	7.8		38	1.8	1	< 0.02	576	< 1	60	480	23	< 0.02	0.2	< 0.1	< 0.005	0.26	2.5
Outwash	09-Dec-08	MAX	8.2	2290	485	13	8.6	< 2	13	1.1	0.44	< 0.02	596	< 1	56	470	36	< 0.02	0.27	< 0.1	< 0.005	0.06	8.8
	25-Jun-09	MAX	8.2	2010	499	10	8.1	< 2	9	1.1	0.54	< 0.02	420	< 1	40	470	28	< 0.02	0.23	< 0.1	< 0.005	0.12	10
	15-Dec-09	INS																					
	30-Jun-10	INS																					
	22-Dec-10	INS																					
	15-Jun-11	MAX	8.07	1220	485	15	6.4	< 2	16	0.4	< 0.05	0.03	150	< 1	16	250	44	1.7	0.15	< 0.1	0.005	< 0.01	5.4
	16-Dec-11	MAX	7.93	1670	666	25	7.3	< 2	25	0.8	< 0.05	0.57	180	< 1	18	160	85	15	0.1	< 0.1	0.006	< 0.01	5.6
	22-Jun-12	Dry																					
	17-Dec-12	MAX	7.72	1300	620	18	11	< 2	17	0.75	< 0.05	0.69	77	< 1	7	260	57	11	0.14	< 0.1	0.007	< 0.01	2.8
	20-Jun-13	INSV																					
	09-Dec-13	MAX	8.02	1400	650	14	10	< 2	< 4	0.3	< 0.05	0.14	77	< 1	16	220	45	0.02	0.14	< 0.1	< 0.005	< 0.01	3.8
Monitor	26-Mar-08	MAX	8.1	732	262	30	1.8	< 2	15	0.8	0.07	< 0.02	107	< 1	19	56	72	53	0.025	< 0.1	0.012	0.13	2
20A-08	25-Jun-08	MAX	8.3	597	242	28	1.2		11	0.4	< 0.05	< 0.02	53	< 1	16	4.9	83	< 0.02	< 0.01	< 0.1	0.032	0.07	2.5
Bedrock	09-Dec-08	MAX	8.1	633	251	26	1.1	< 2	4	0.3	< 0.05	< 0.02	55	< 1	17	9.2	84	< 0.02	0.02	< 0.1	0.068	0.05	4.1
	25-Jun-09	MAX	7.9	602	242	28	1.2	< 2	< 4	0.3	< 0.05	< 0.02	49	< 1	16	5.9	83	< 0.02	0.011	< 0.1	0.089	0.09	2.4
	15-Dec-09	MAX	7.9	622	247	29	1.3	< 2	< 4	0.2	< 0.05	0.03	47	< 1	16	4.9	84	< 0.02	0.012	< 0.1	0.11	0.04	3.8
	29-Jun-10	MAX	8	794	236	27	1.2	< 2	10	0.4	< 0.05	< 0.02	130	< 1	37	5.3	80	0.19	< 0.01	< 0.1	0.096	< 0.01	< 0.1
	22-Dec-10	MAX	7.79	630	242	31	1.2	< 2	< 4	0.4	< 0.05	< 0.02	50	< 1	18	4.7	88	< 0.02	< 0.01	< 0.1	0.12	0.06	2.9
	15-Jun-11	MAX	7.94	604	239	26	1	< 2	15	0.2	< 0.05	< 0.02	48	< 1	17	4.9	80	< 0.02	< 0.01	< 0.1	0.11	0.08	3.1
	16-Dec-11	MAX	8.04	629	244	27	1.2	< 2	51	1	< 0.05	1	49	< 1	18	5.4	81	15	< 0.01	< 0.1	0.074	0.02	3.1
	22-Jun-12	MAX	7.95	620	240	27	1.2	< 2	9.7	0.67	< 0.05	0.21	43	< 1	17	4	82	4.1	< 0.01	< 0.1	0.14	< 0.01	3.4
	17-Dec-12	MAX	7.63	620	250	30	1.3	< 2	< 4	0.17	< 0.05	< 0.02	48	< 1	17	4.5	87	2.6	< 0.01	< 0.1	0.13	0.01	3.3
	20-Jun-13	MAX	8.38	610	240	28	1.1	< 2	6.2	0.24	< 0.05	< 0.02	44	< 1	15	3.9	86	0.81	< 0.01	< 0.1	0.13	0.03	2.5
	09-Dec-13	MAX	7.92	630	250	26	1	< 2	< 4	0.32	< 0.05	0.029	43	< 1	17	5.7	78	0.33	< 0.01	< 0.1	0.11	0.04	3.6
Monitor	26-Mar-08	MAX	8	572	244	30	1.2	< 2	10	0.5	< 0.05	< 0.02	52	< 1	11	3.5	82	73	< 0.01	< 0.1	0.09	< 0.01	1.2
20B-08	25-Jun-08	MAX	8.2	933	235	26	3.3		20	0.6	< 0.05	< 0.02	78	< 1	110	57	99	< 0.02	0.013	< 0.1	0.63	< 0.01	< 0.1
Outwash	09-Dec-08	MAX	8	694	266	25	1.3	< 2	7	0.3	< 0.05	< 0.02	73	< 1	25	16	84	< 0.02	0.018	< 0.1	0.16	< 0.01	< 0.1
	25-Jun-09	MAX	7.7	822	254	26	1.9	< 2	10	0.3	< 0.05	< 0.02	49	< 1	88	45	95	< 0.02	0.014	< 0.1	0.37	< 0.01	< 0.1
	15-Dec-09	MAX	7.9	628	271	27	1.5	< 2	< 4	0.2	< 0.05	< 0.02	56	< 1	8	9.6	85	< 0.02	0.012	< 0.1	0.18	< 0.01	< 0.1
	29-Jun-10	MAX	7.8	1080	256	29	1.9	< 2	14	0.4	< 0.05	0.02	44	< 1	170	58	110	< 0.02	0.013	< 0.1	0.64	< 0.01	< 0.1
	22-Dec-10	MAX	7.87	631	272	31	1.5	< 2	< 4	0.2	< 0.05	< 0.02	49	< 1	12	5.9	93	< 0.02	< 0.01	< 0.1	0.14	< 0.01	0.3
	15-Jun-11	MAX	7.9	614	296	28	1.3	< 2	13	0.3	< 0.05	< 0.02	29	< 1	7	3.6	89	< 0.02	0.016	< 0.1	0.13	< 0.01	< 0.1
	16-Dec-11	MAX	7.94	590	272	25	1.1	< 2	14	0.8	< 0.05	0.27	32	< 1	10	4.3	78	7.1	< 0.01	< 0.1	0.098	< 0.01	< 0.1
	22-Jun-12	MAX	7.8	790	270	27	1.8	3	93	1.3	0.19	0.4	44	8.9	67	30	93	7.7	< 0.01	< 0.1	0.28	< 0.01	< 0.1
	17-Dec-12	MAX	7.65	670	280	32	1.5	< 2	13	0.3	< 0.05	0.072	44	< 1	24	11	97	2.5	< 0.01	< 0.1	0.11	< 0.01	0.14
	20-Jun-13	MAX	8.25	910	260	28	1.5	< 2	16	0.5	< 0.05	0.089	49	< 1	100	50	100	3.1	0.013	< 0.1	0.43	< 0.01	< 0.1
	09-Dec-13	MAX	7.88	790	280	28	1.4	< 2	< 4	0.34	< 0.05	0.021	43	< 1	59	23	91	< 0.02	< 0.01	< 0.1	0.23	< 0.01	< 0.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Monitor	Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
Monitor	25-Jun-08	N/A																					
21A-08	25-Jun-08	N/A																					
Bedrock	25-Jun-08	MAX																					
	25-Jun-08	MAX																					
	09-Dec-08	MAX	8.1	820	284	32	1.2	< 2	8	0.5	< 0.05	< 0.02	49	< 1	54	34	86	< 0.02	0.013	< 0.1	0.22	0.02	6.2
	25-Jun-09	MAX	7.8	583	261	26	0.89	< 2	6	0.3	< 0.05	< 0.02	30	< 1	5	13	78	< 0.02	0.015	< 0.1	0.26	< 0.01	4.8
	15-Dec-09	MAX	7.8	776	277	29	1.1	< 2	4	0.3	< 0.05	0.02	39	< 1	47	33	86	0.05	0.018	< 0.1	0.32	< 0.01	6.3
	25-Jun-10	MAX	8	589	262	25	0.87	< 2	4	0.4	< 0.05	< 0.02	26	< 1	8	13	75	< 0.02	0.012	< 0.1	0.29	< 0.01	4.3
	22-Dec-10	MAX	7.79	660	278	29	1.1	< 2	< 4	0.3	< 0.05	< 0.02	32	< 1	18	19	87	< 0.02	0.01	< 0.1	0.29	< 0.01	5.1
	14-Jun-11	MAX	7.85	557	263	26	0.86	< 2	15	0.5	< 0.05	< 0.02	21	< 1	4	7.5	79	< 0.02	0.02	< 0.1	0.36	< 0.01	3.1
	14-Dec-11	MAX	8.07	619	278	26	1	< 2	15	2	< 0.05	0.14	27	< 1	10	14	79	0.83	< 0.01	< 0.1	0.31	< 0.01	3.5
	18-Jun-12	MAX	7.93	570	260	24	0.88	< 2	12	0.26	< 0.05	< 0.02	24	< 1	6	9.8	73	0.44	< 0.01	< 0.1	0.31	< 0.01	2.9
	10-Dec-12	MAX	7.81	650	290	28	1.1	< 2	< 4	0.34	< 0.05	< 0.02	28	< 1	19	18	84	0.07	0.011	< 0.1	0.36	< 0.01	3.1
	19-Jun-13	MAX	8.23	560	270	23	0.8	< 2	6.1	0.41	< 0.05	0.032	19	< 1	4	6.9	71	0.97	0.014	< 0.1	0.31	< 0.01	1.9
	03-Dec-13	MAX	7.76	570	280	27	1.1	< 2	5.5	0.54	0.25	0.039	20	14	6	10	80	< 0.02	0.016	< 0.1	0.27	< 0.01	2.1
Monitor	19-Dec-11	MAX	7.88	769	212	35	1.6	< 2	< 4	0.9	< 0.05	0.14	89	< 1	56	16	110	1.3	0.015	0.16	0.015	< 0.01	< 0.1
22A-11	19-Jun-12	MAX	7.96	990	260	20	1.5	< 2	10	< 0.1	0.1	< 0.02	25	< 1	130	78	94	0.19	0.024	< 0.1	0.015	< 0.01	4
Bedrock	11-Dec-12	MAX	7.82	780	240	31	1.4	< 2	< 4	0.11	< 0.05	0.029	93	< 1	49	16	100	0.89	0.023	< 0.1	< 0.005	< 0.01	< 0.1
	17-Jun-13	MAX	8.22	780	230	31	1.3	< 2	< 4	0.26	0.062	0.055	88	< 1	49	16	88	1.2	0.02	< 0.1	0.006	< 0.01	< 0.1
	04-Dec-13	MAX	7.86	770	240	33	2.3	< 2	7.1	0.35	0.14	0.11	85	< 1	55	17	93	1.2	0.025	0.18	0.01	0.02	0.12
Monitor	19-Dec-11	MAX	7.83	817	299	24	1.6	< 2	< 4	0.3	< 0.05	0.03	25	< 1	57	43	110	0.21	0.014	< 0.1	0.021	< 0.01	3.7
22B-11	19-Jun-12	MAX	7.97	770	230	32	1.3	< 2	9.8	0.43	< 0.05	0.04	83	< 1	46	13	96	1.4	0.019	< 0.1	< 0.005	< 0.01	< 0.1
Outwash	11-Dec-12	MAX	7.82	870	340	22	1.5	< 2	< 4	0.46	< 0.05	< 0.02	26	< 1	59	48	110	0.28	0.024	< 0.1	0.012	< 0.01	3.5
	17-Jun-13	MAX	7.89	1100	240	22	1.7	< 2	< 4	0.69	< 0.05	< 0.02	28	< 1	150	93	100	0.23	0.028	< 0.1	0.013	< 0.01	3.9
	04-Dec-13	MAX	7.85	910	300	19	1.6	< 2	7.5	0.44	< 0.05	< 0.02	23	< 1	98	83	84	< 0.02	0.025	< 0.1	0.021	< 0.01	3
Monitor	05-Jul-12	MAX	7.8	700	230	28	0.95	< 2	4.8	< 0.1	< 0.05	< 0.02	100	< 1	24	11	85	0.49	0.026	< 0.1	< 0.005	< 0.01	< 0.1
23A-12	17-Dec-12	MAX	7.71	720	250			< 2	< 4	0.29	< 0.05	< 0.02	95	< 1	30			0.13				< 0.01	< 0.1
Bedrock	18-Dec-12	MAX	7.68	720	250	34	1.3	< 2	< 4	0.3	0.063	0.035	93	< 1	30	15	97	0.13	0.014	< 0.1	< 0.005	< 0.01	< 0.1
	18-Jun-13	MAX	7.99	710	230	32	1.2	< 2	< 4	0.23	0.052	< 0.02	100	< 1	25	12	96	0.15	0.024	< 0.1	< 0.005	< 0.01	< 0.1
	05-Dec-13	MAX	7.86	720	240	34	1.3	< 2	9.4	0.28	< 0.05	< 0.02	90	< 1	30	14	96	0.12	0.024	< 0.1	< 0.005	< 0.01	< 0.1
Monitor	05-Jul-12	MAX	7.83	1200	320	35	4.6	< 2	74	< 1	0.075	5.6	35	< 1	150	79	96	120	0.094	< 0.1	0.039	0.05	3.7
23B-12	19-Jul-12	MAX	7.75	1400	330	40	5	< 2	12	0.75	0.088	0.6	29	< 1	190	120	120	27	0.061	< 0.1	0.18	0.01	3.5
Outwash	18-Dec-12	MAX	7.65	1300	380	35	4.2	< 2	23	< 0.5	0.074	1.2	36	< 1	140	120	130	26	0.59	< 0.1	0.22	< 0.01	4.8
	18-Jun-13	MAX	7.91	1100	320	29	3	< 2	< 4	0.4	< 0.05	0.23	26	< 1	150	83	120	9.9	0.49	< 0.1	0.16	< 0.01	3.3
	05-Dec-13	MAX	7.71	1100	400	33	3.4	< 2	12	1.7	< 0.05	0.41	28	< 1	110	98	130	0.03	0.39	< 0.1	0.2	< 0.01	3.4





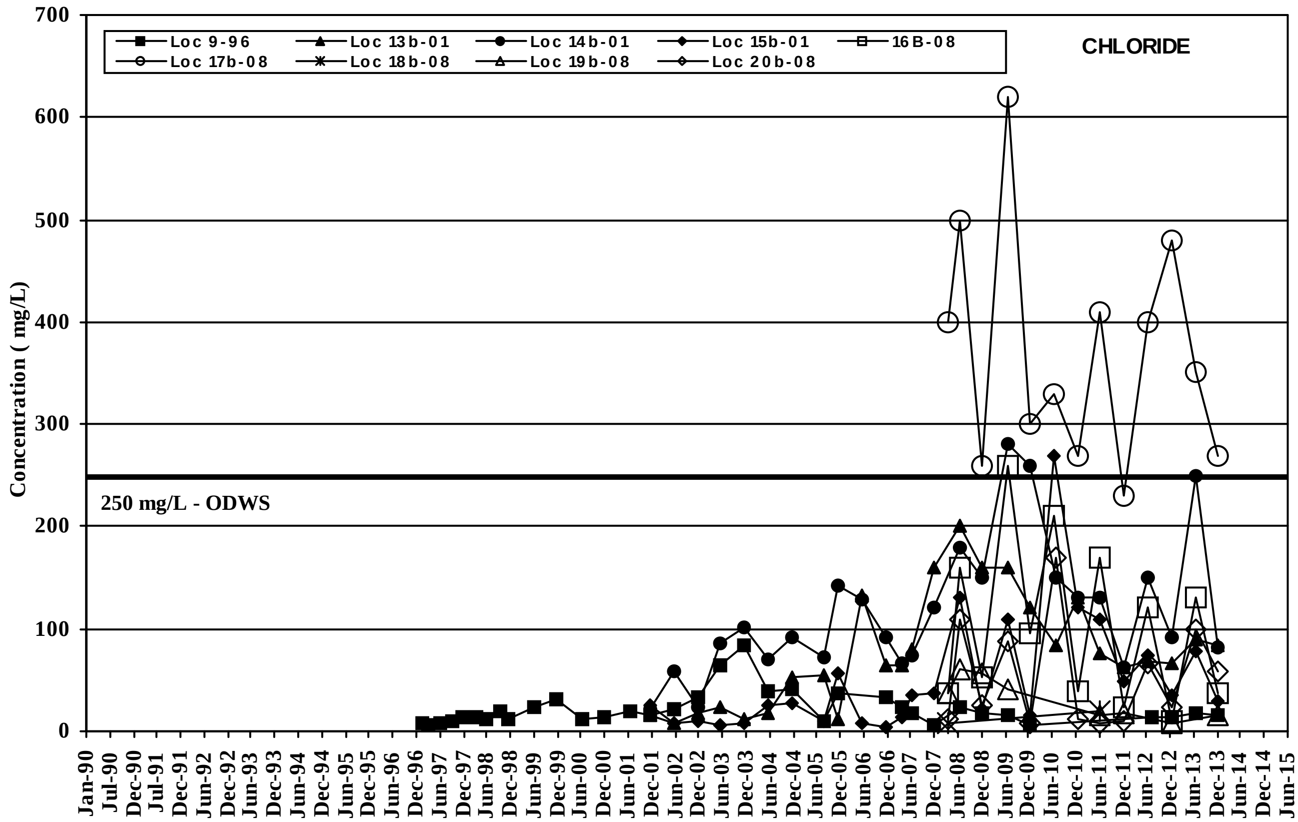
AECOM

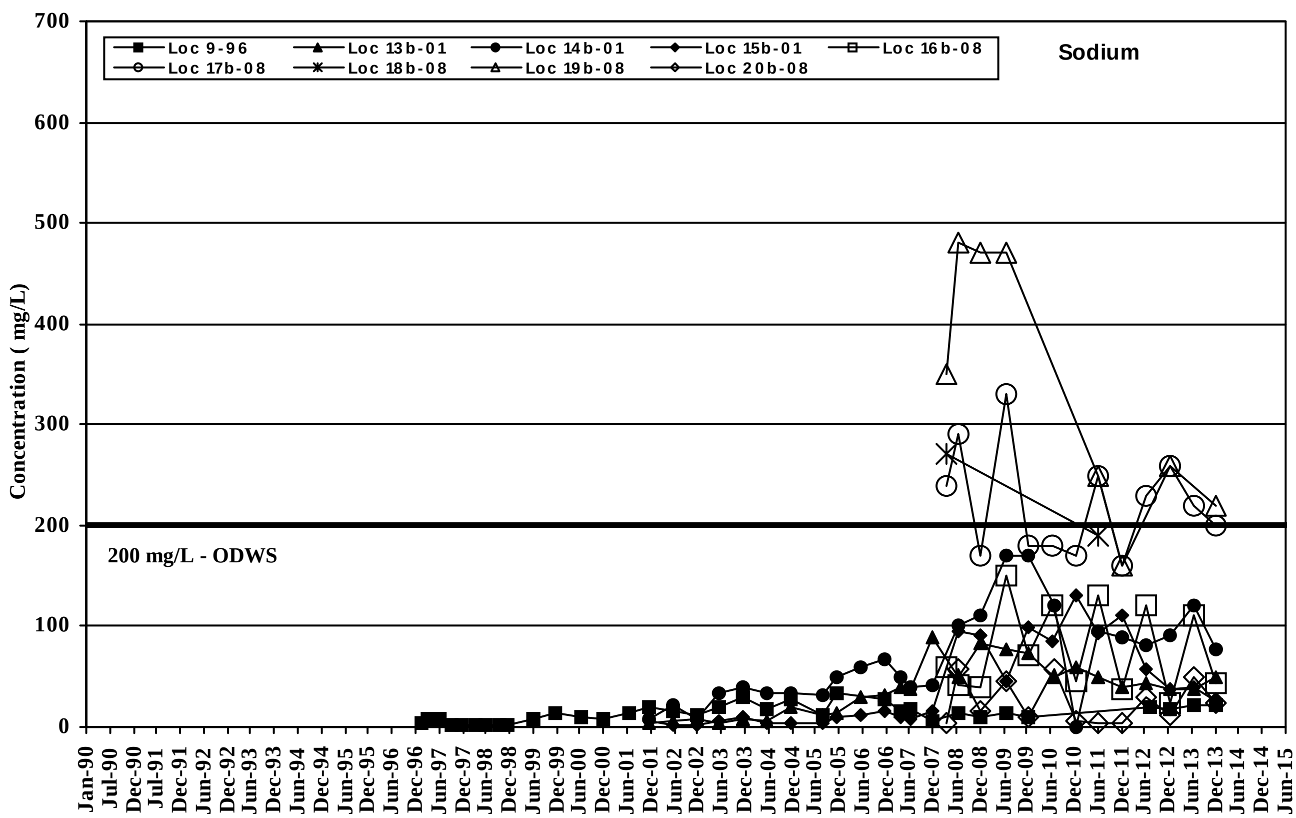
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends
Overburden Locations on Wet/Dry Facility

FIGURE
B1

60315291
12 Cl-NA Location WestOB





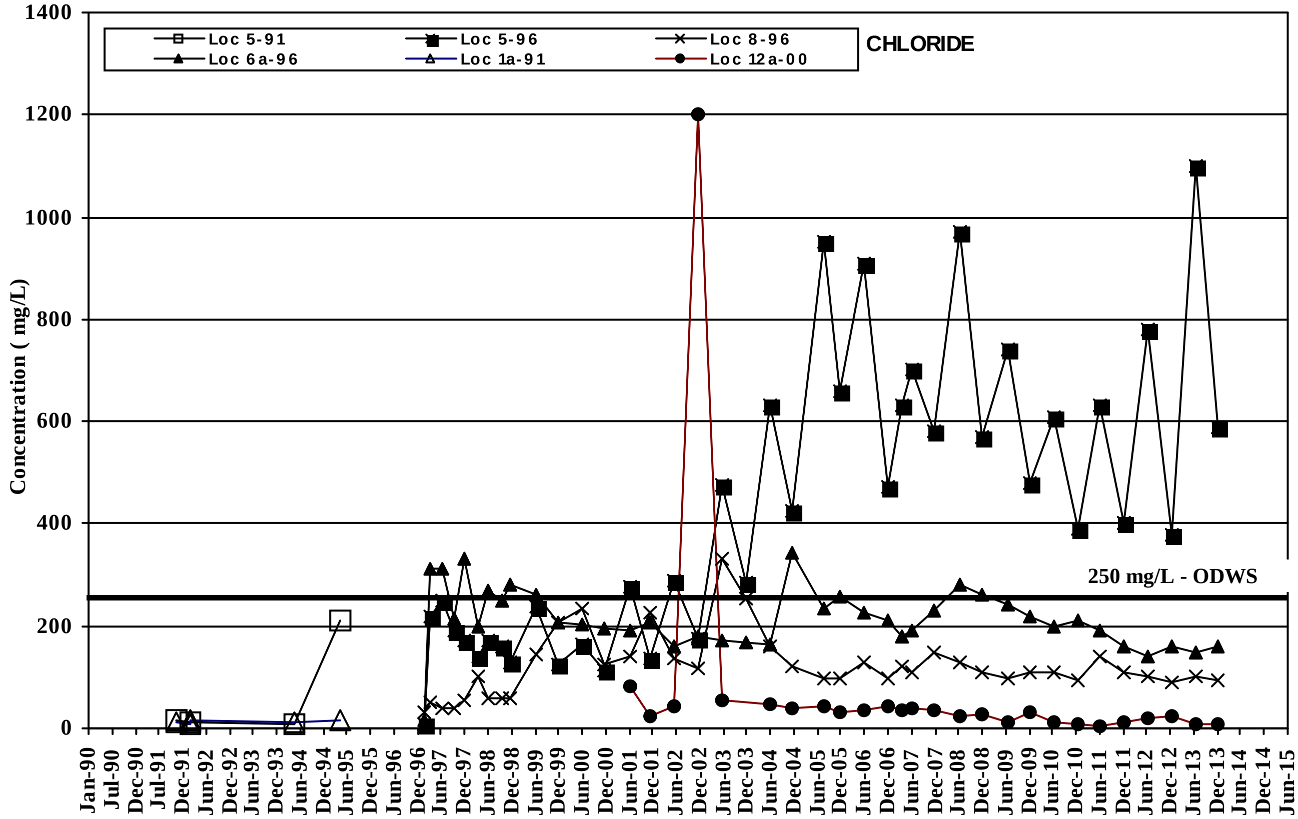
AECOM

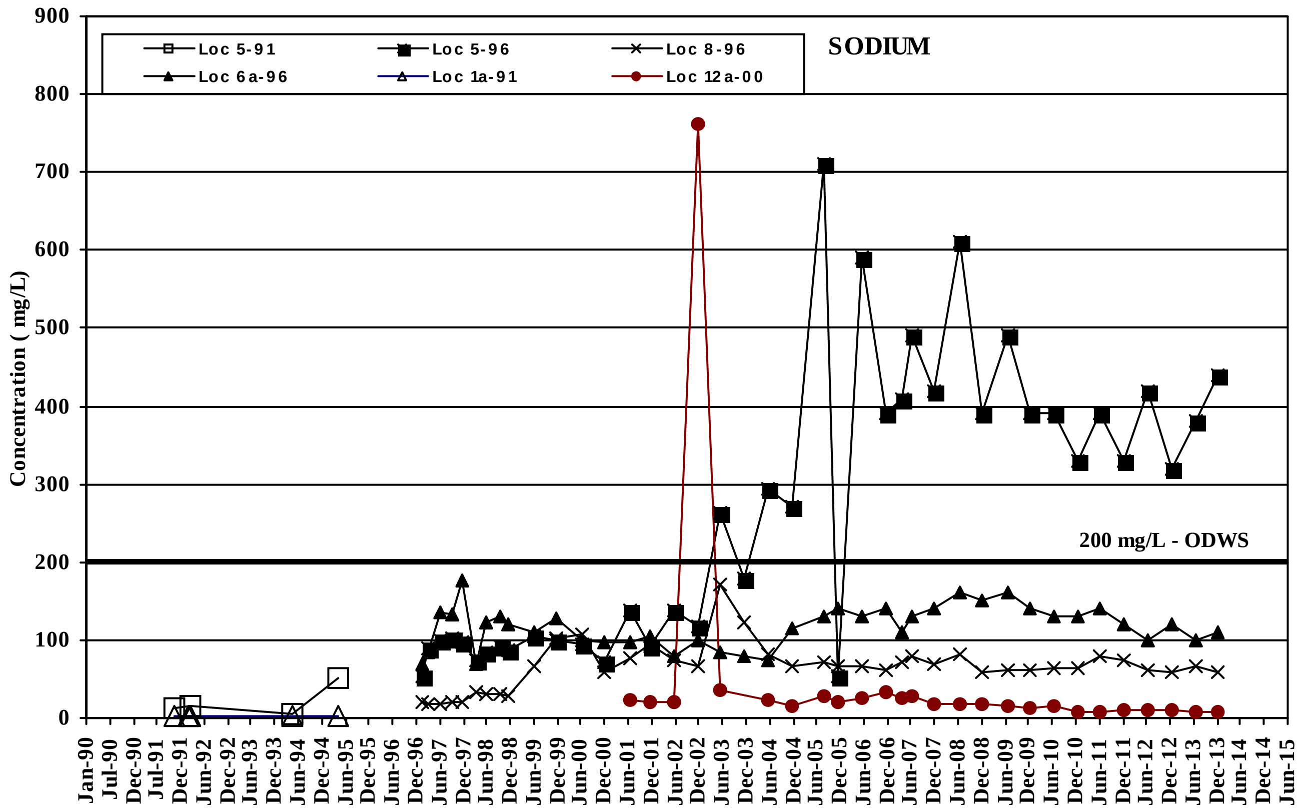
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends
Overburden Locations East of Wet/Dry or Transfer Station Property

FIGURE
B2

60315291
12 Cl-NA Location EastOB





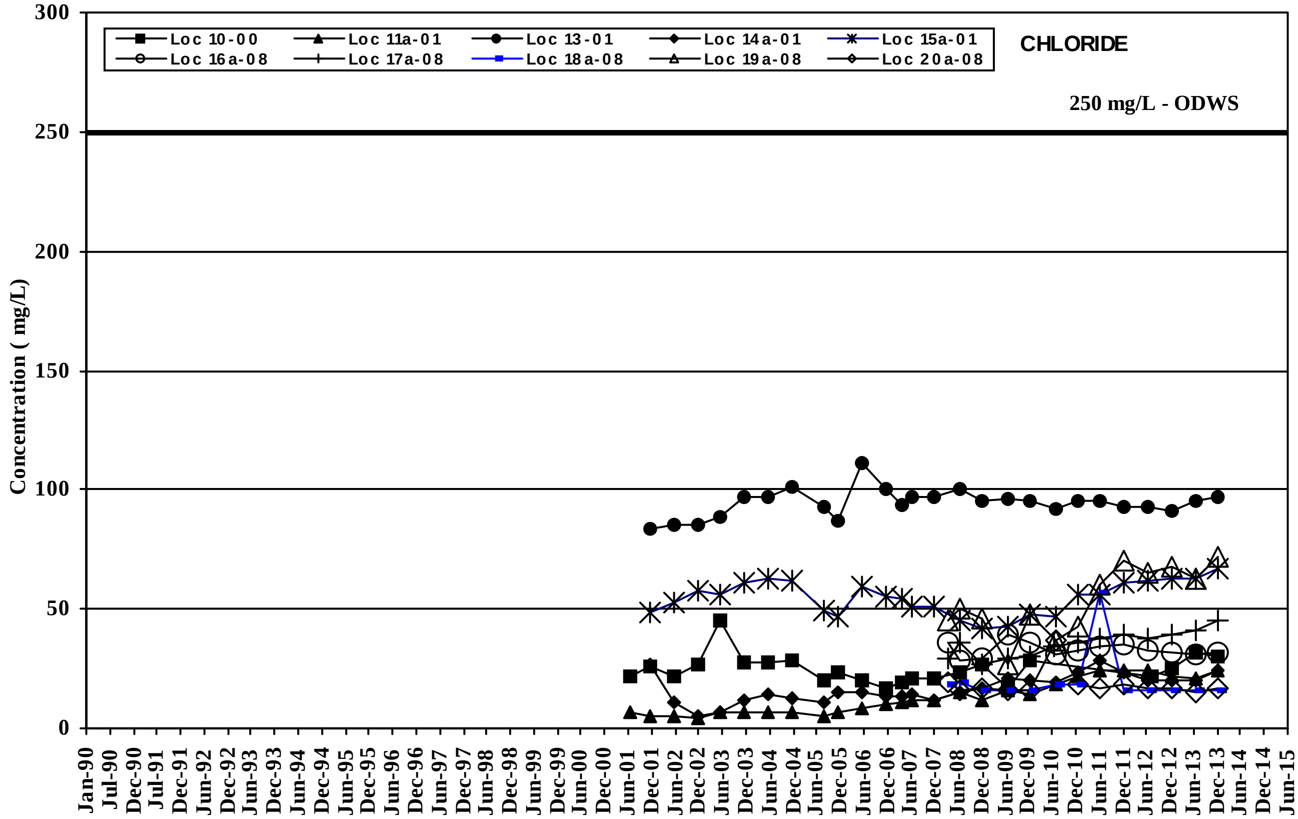
AECOM

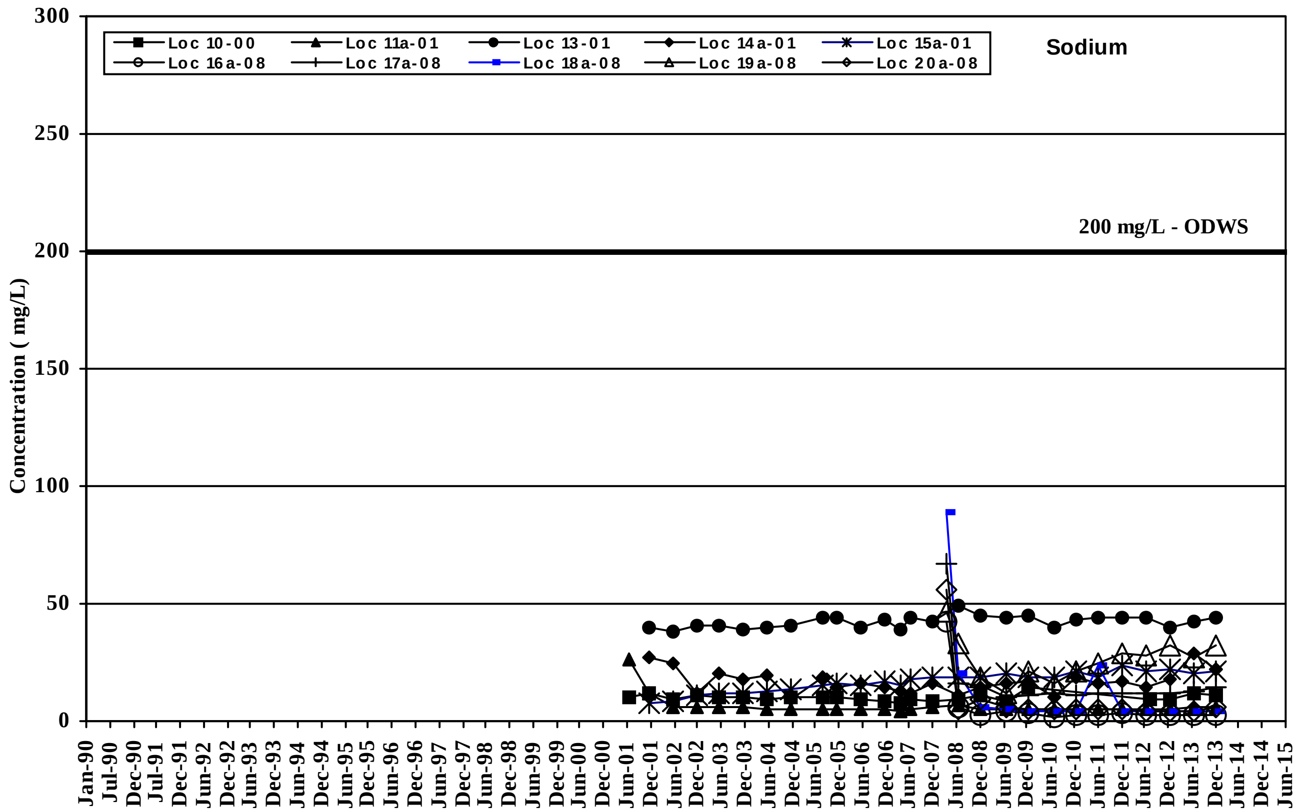
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends
Bedrock Locations West or on Wet/Dry Facility

FIGURE
B3

60315291
12 Cl-NA Location WestBed





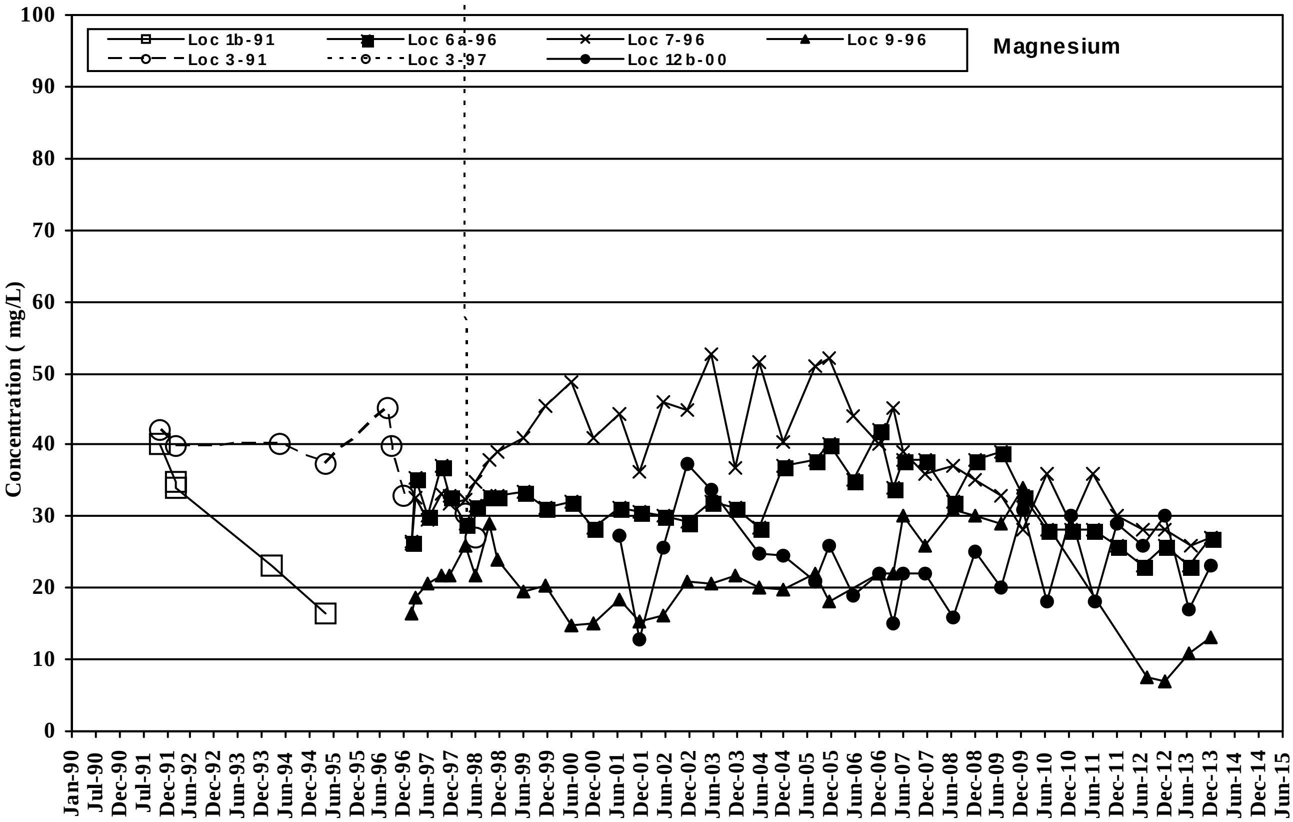
AECOM

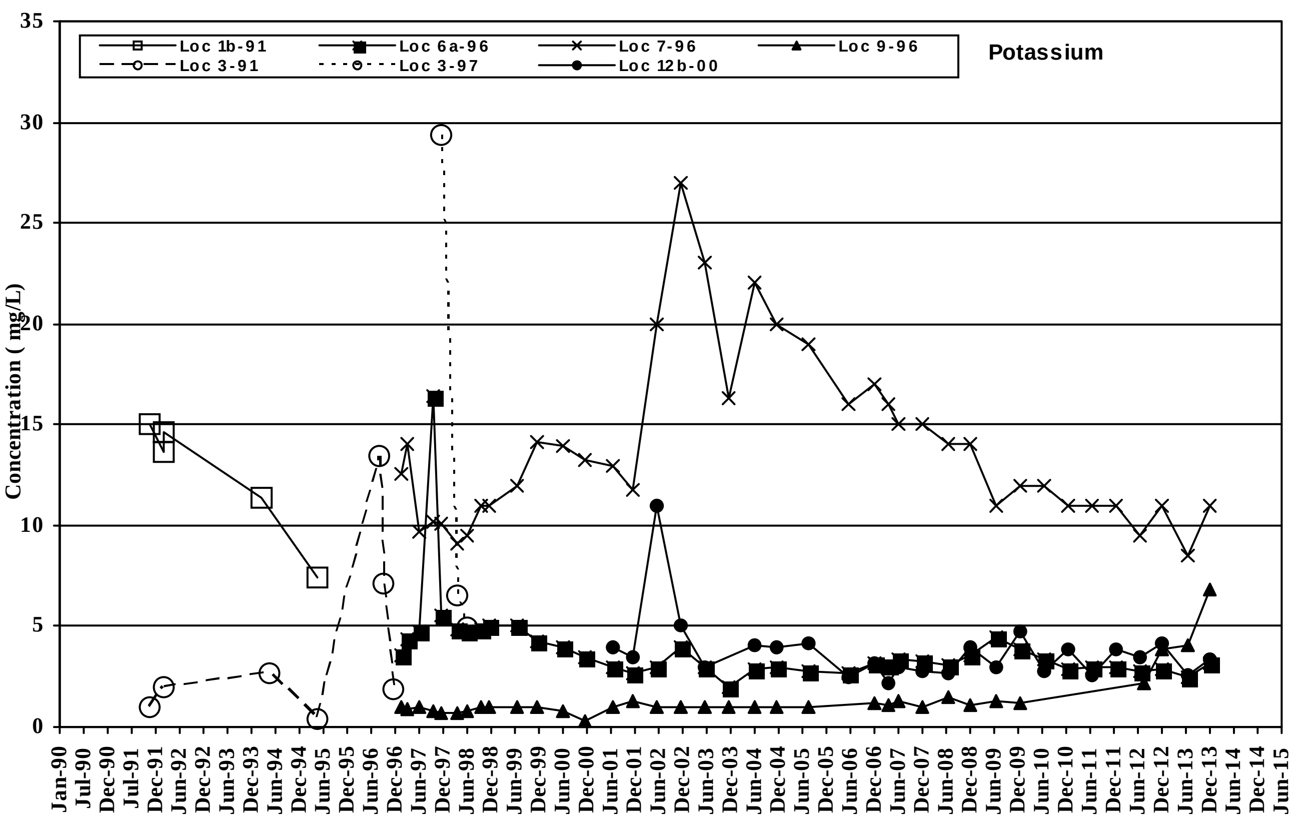
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends
Bedrock Locations East of Wet/Dry or on Transfer Station Property

FIGURE
B4

60315291
12 Cl-NA Location EastBed





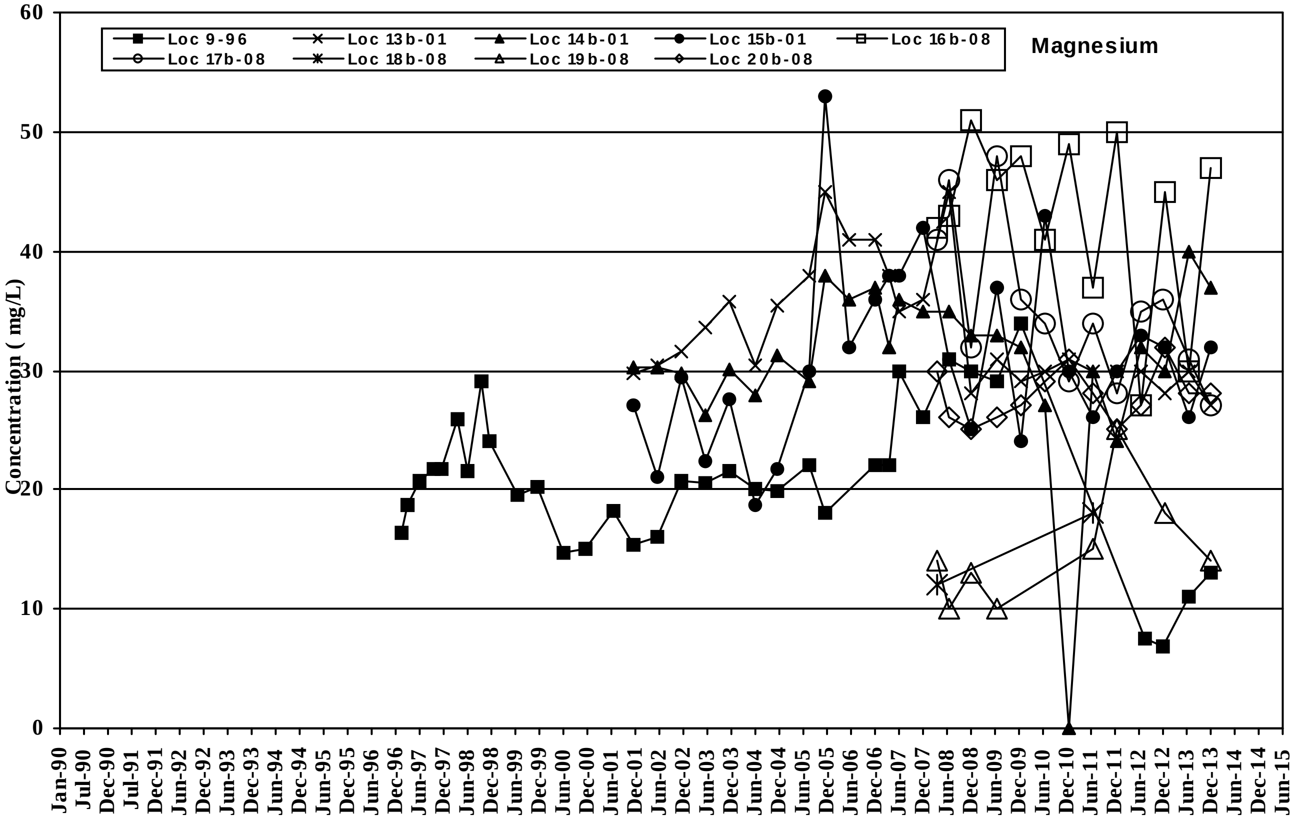
AECOM

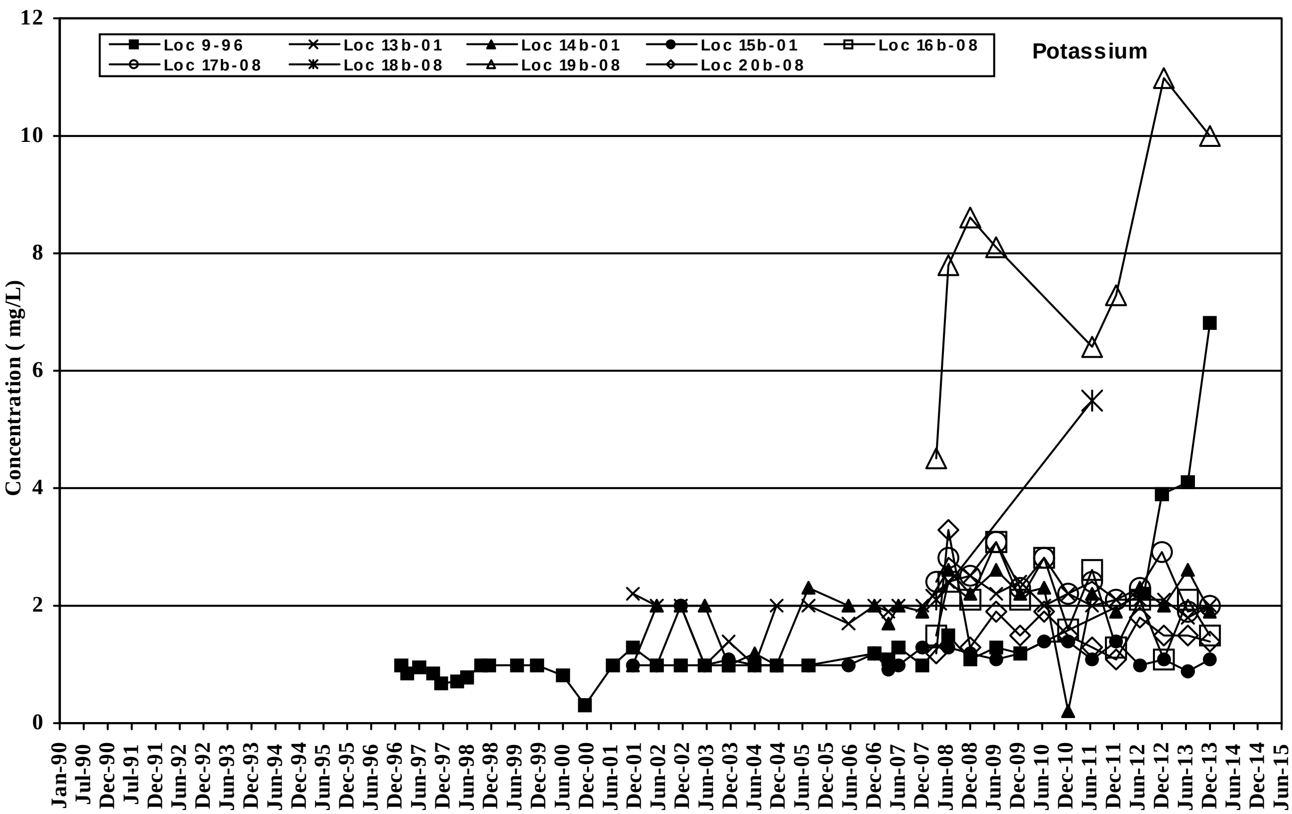
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends
Overburden Locations on Wet/Dry Facility

FIGURE
B5

60315291
12 Mg-K Location WestOB





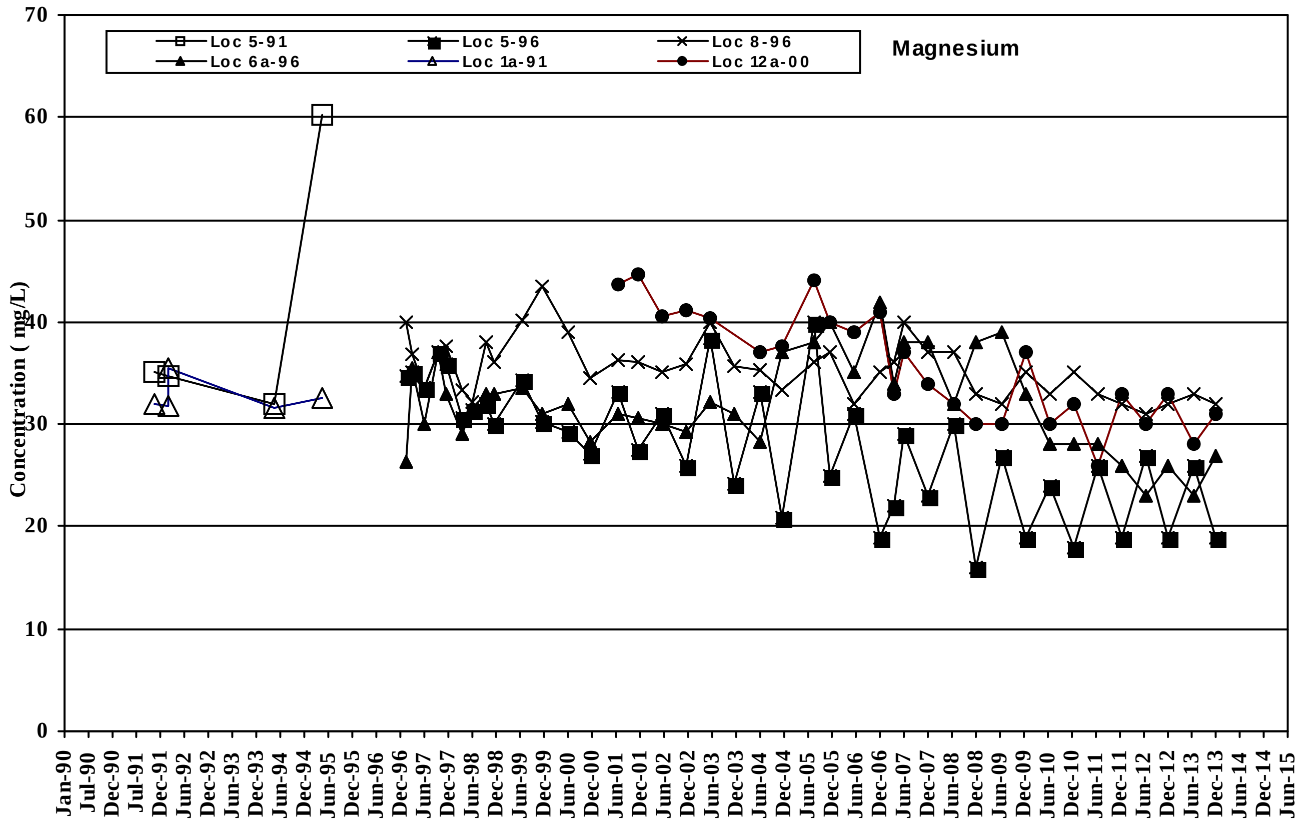
AECOM

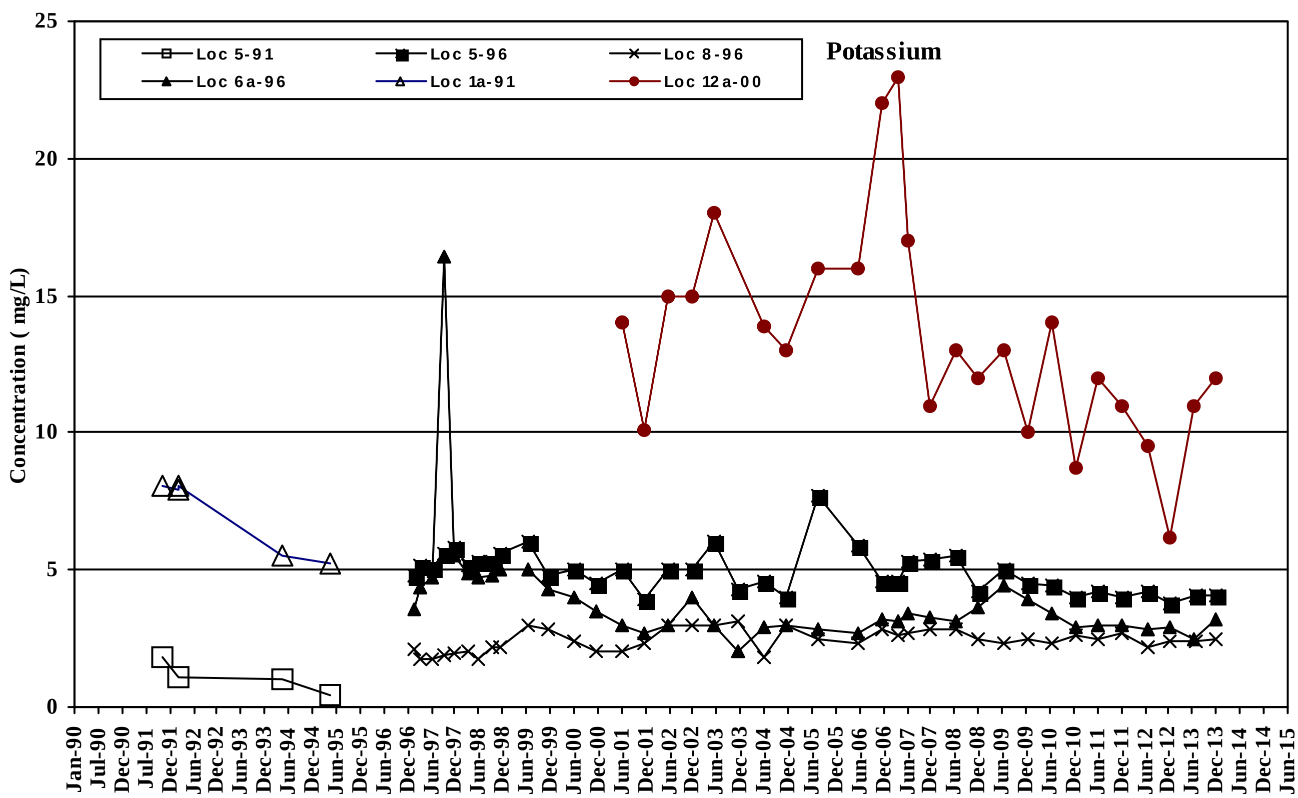
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends Overburden Locations East of Wet/Dry or Transfer Station Property

FIGURE B6

60315291
12 Mg-K Location EastOB





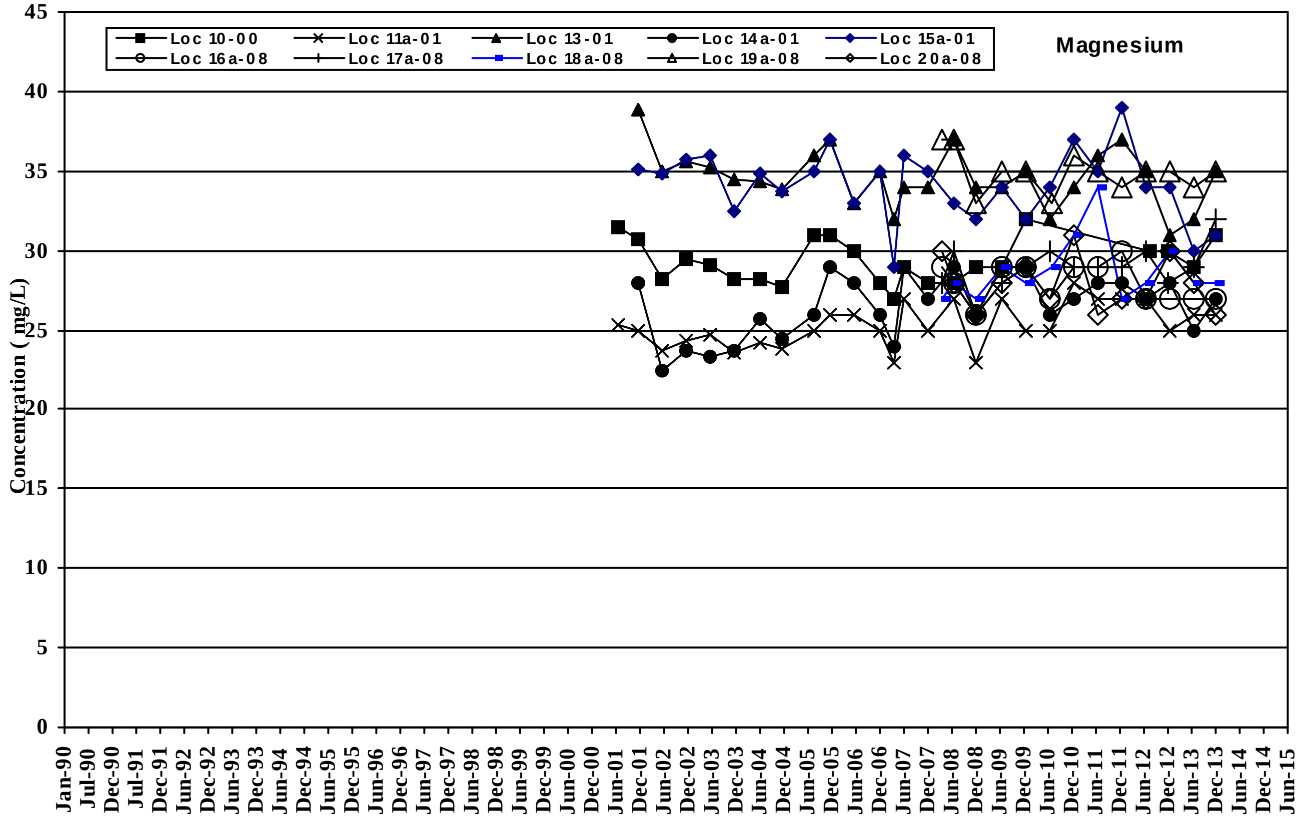
AECOM

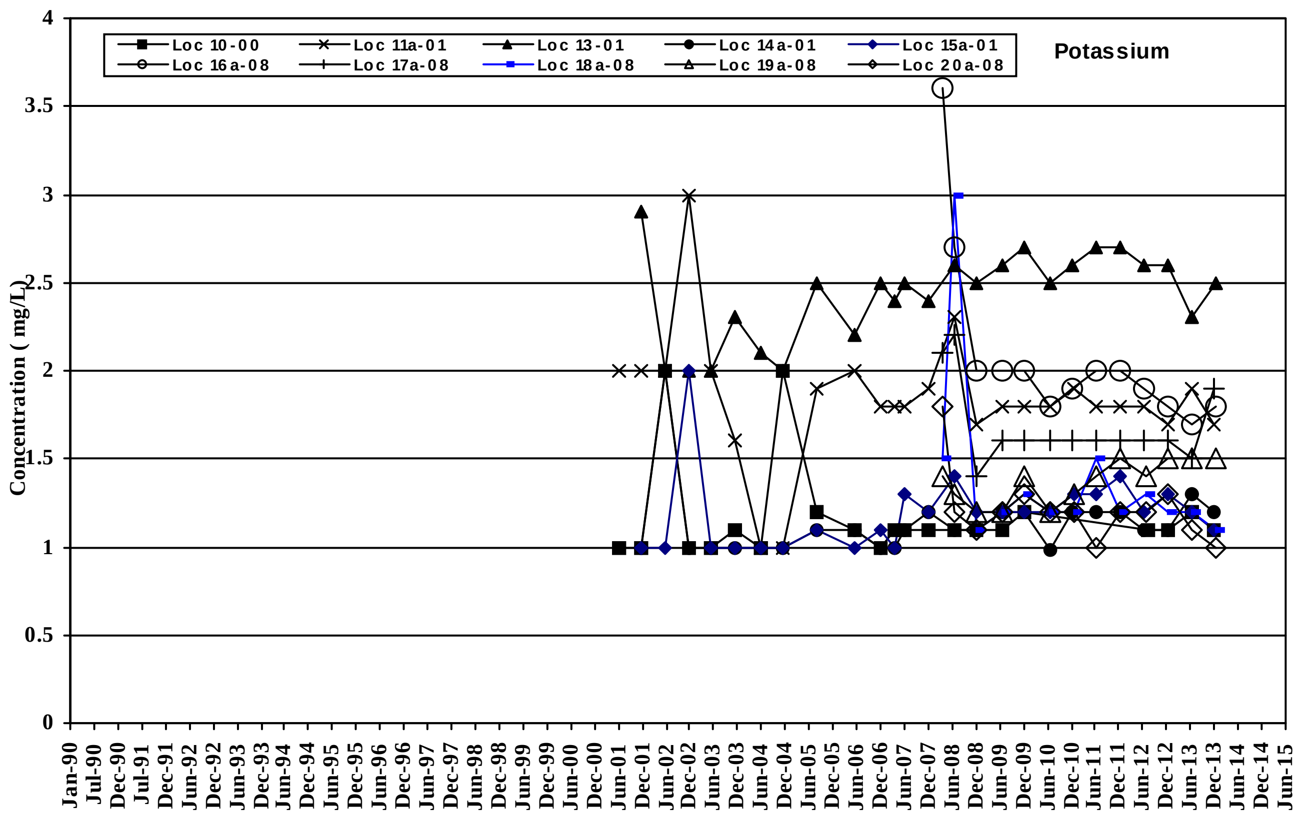
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends
Bedrock Locations West or on Wet/Dry Facility

FIGURE
B7

60315291
12 Mg-K Location WestBed





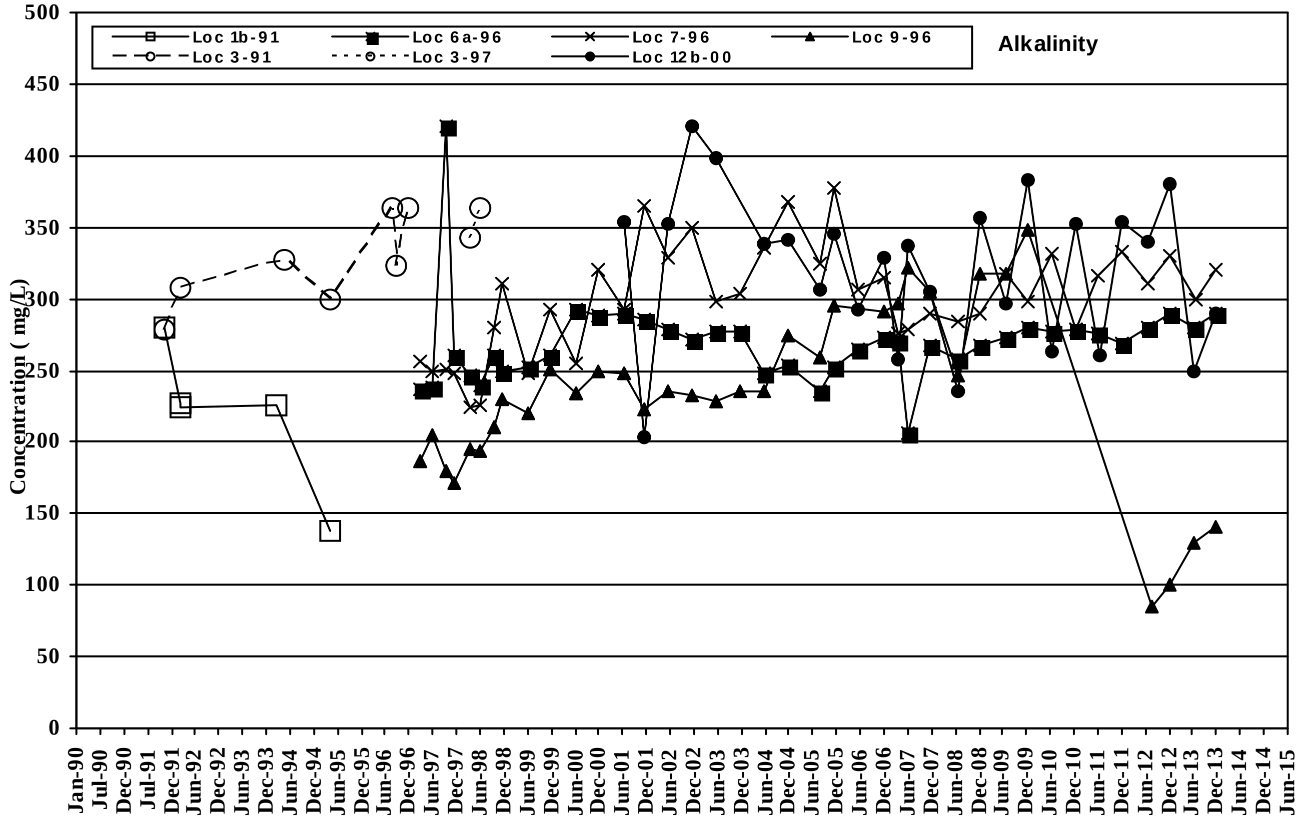
AECOM

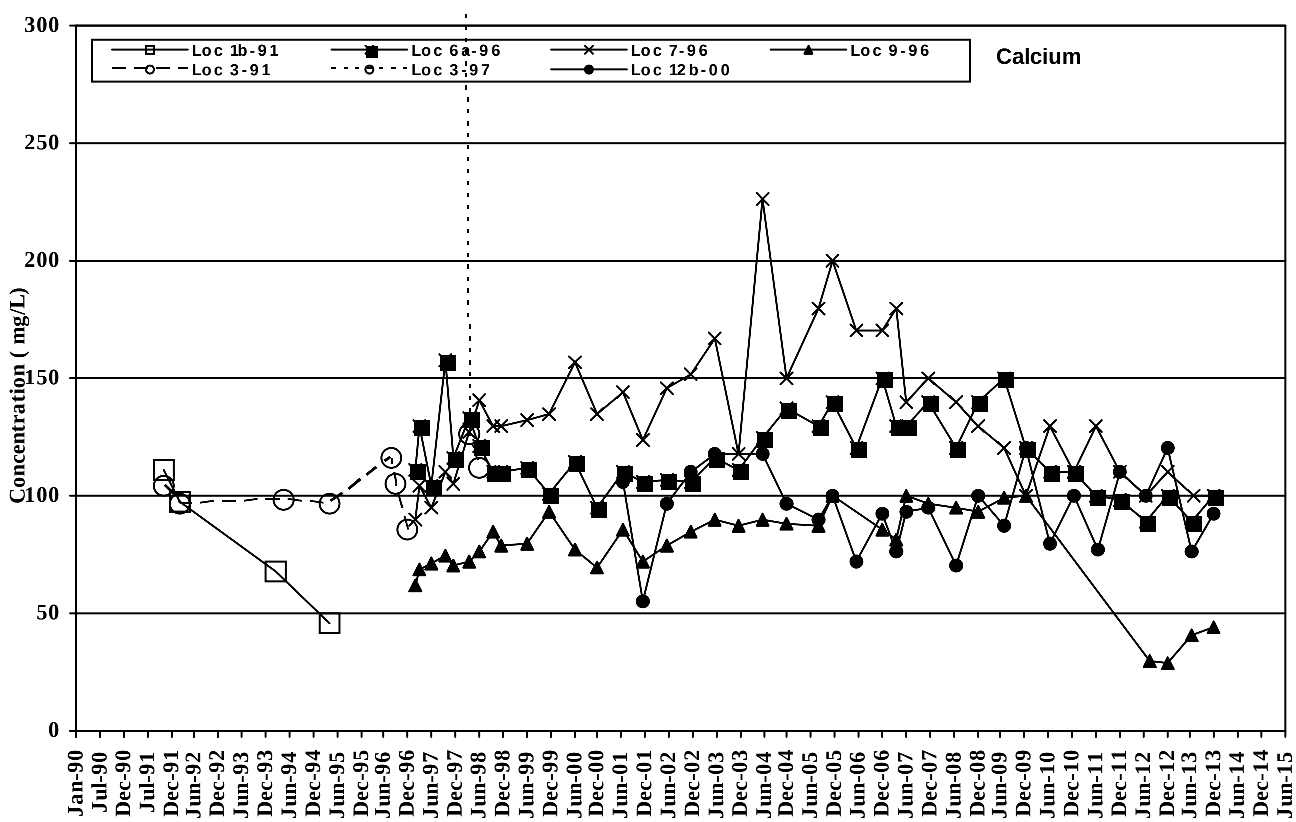
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends
Bedrock Locations East of Wet/Dry or on Transfer Station Property

FIGURE
B8

60315291
12 Mg-K Location EastBed





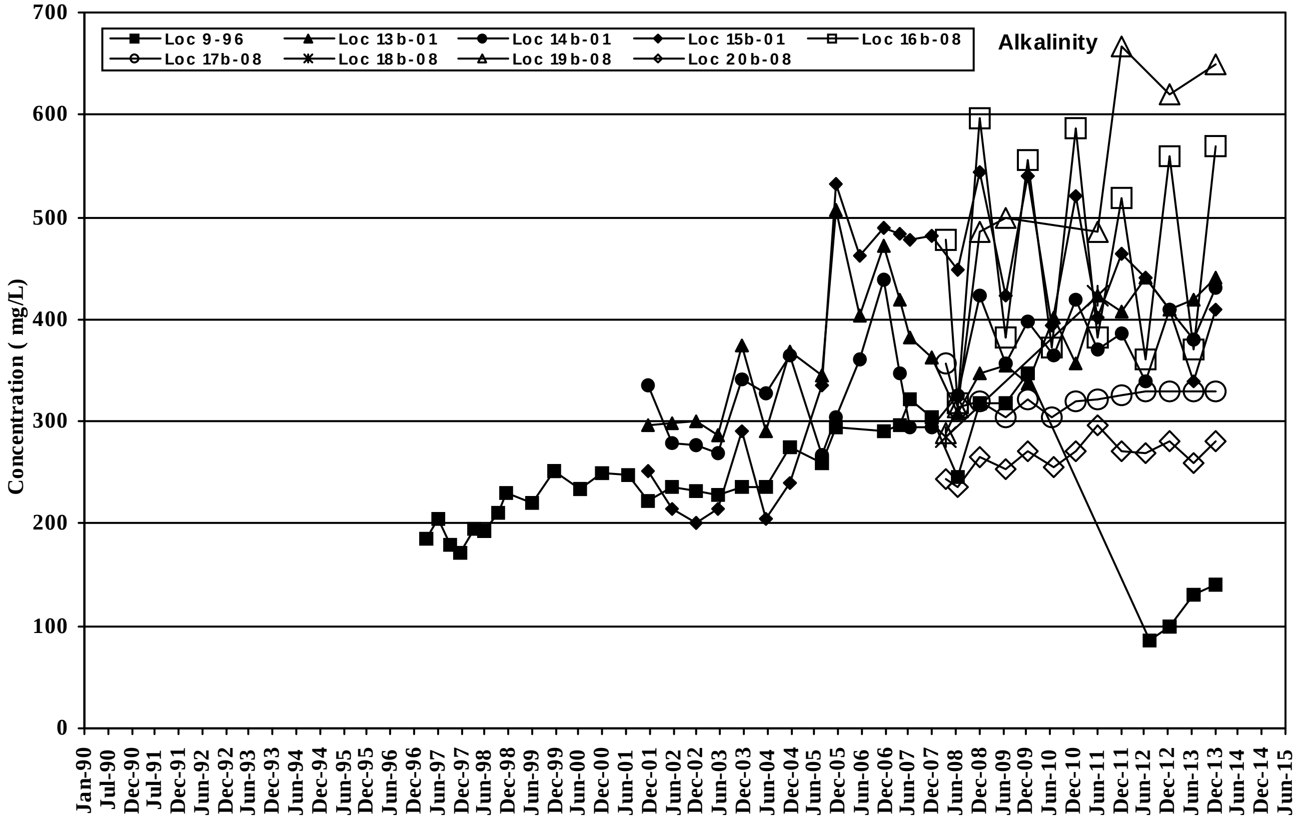
AECOM

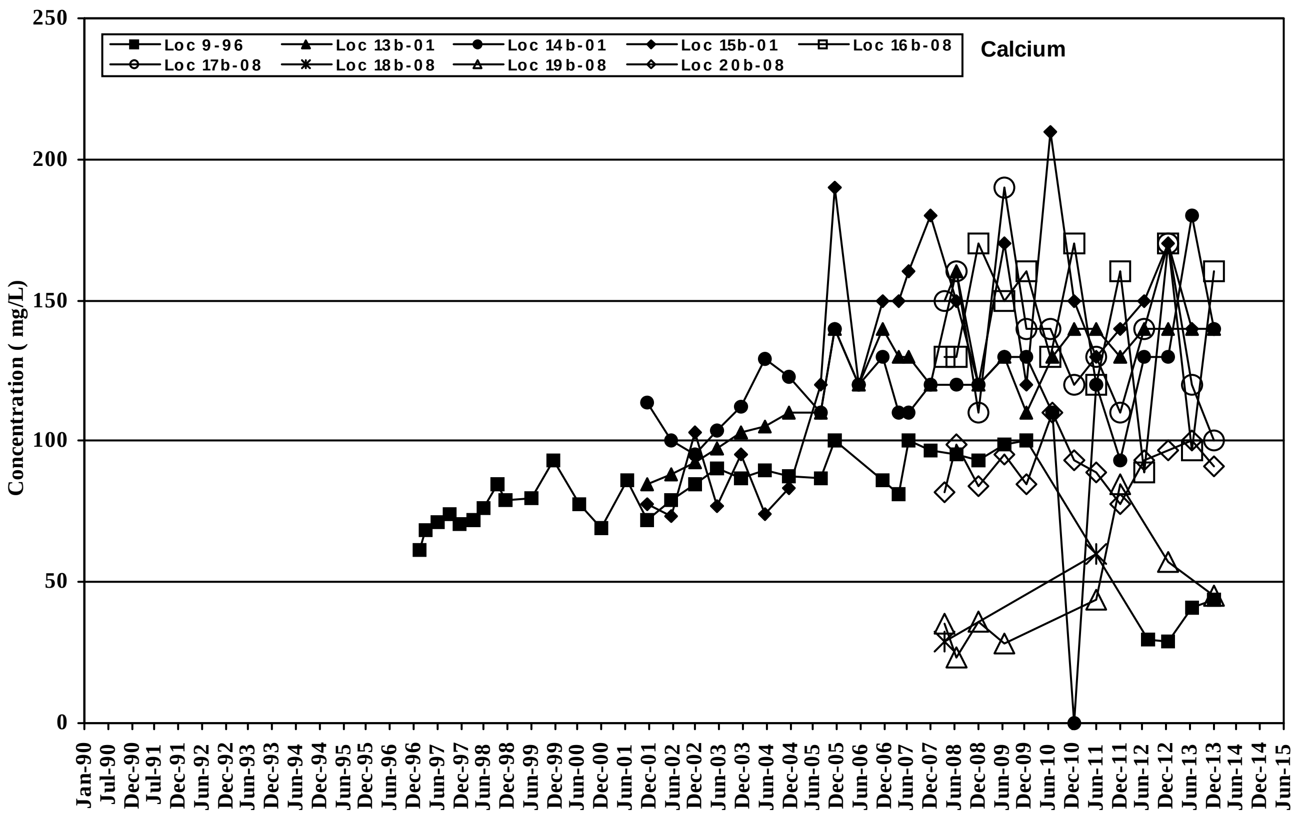
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends
Overburden Locations on Wet/Dry Facility

FIGURE
B9

60315291
12 Alk-Ca Location WestOB





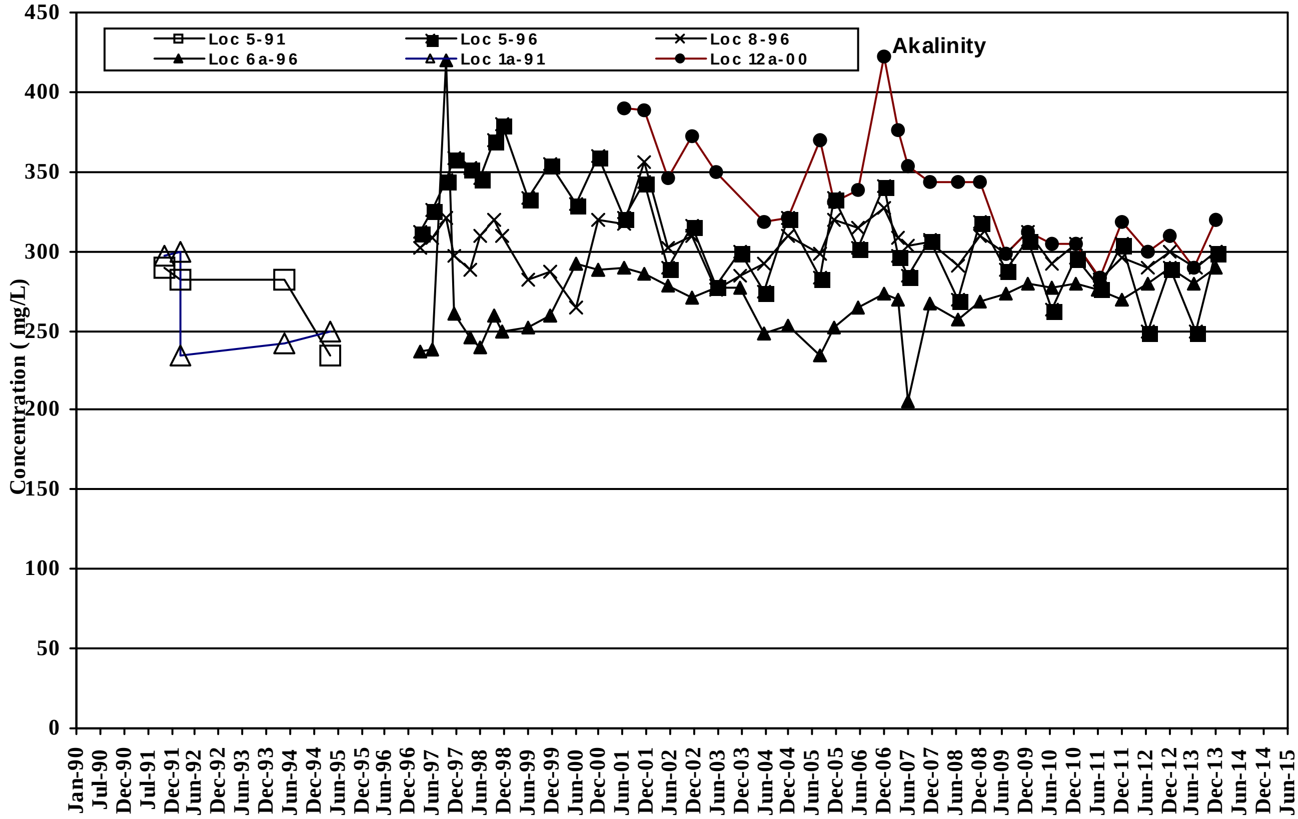
AECOM

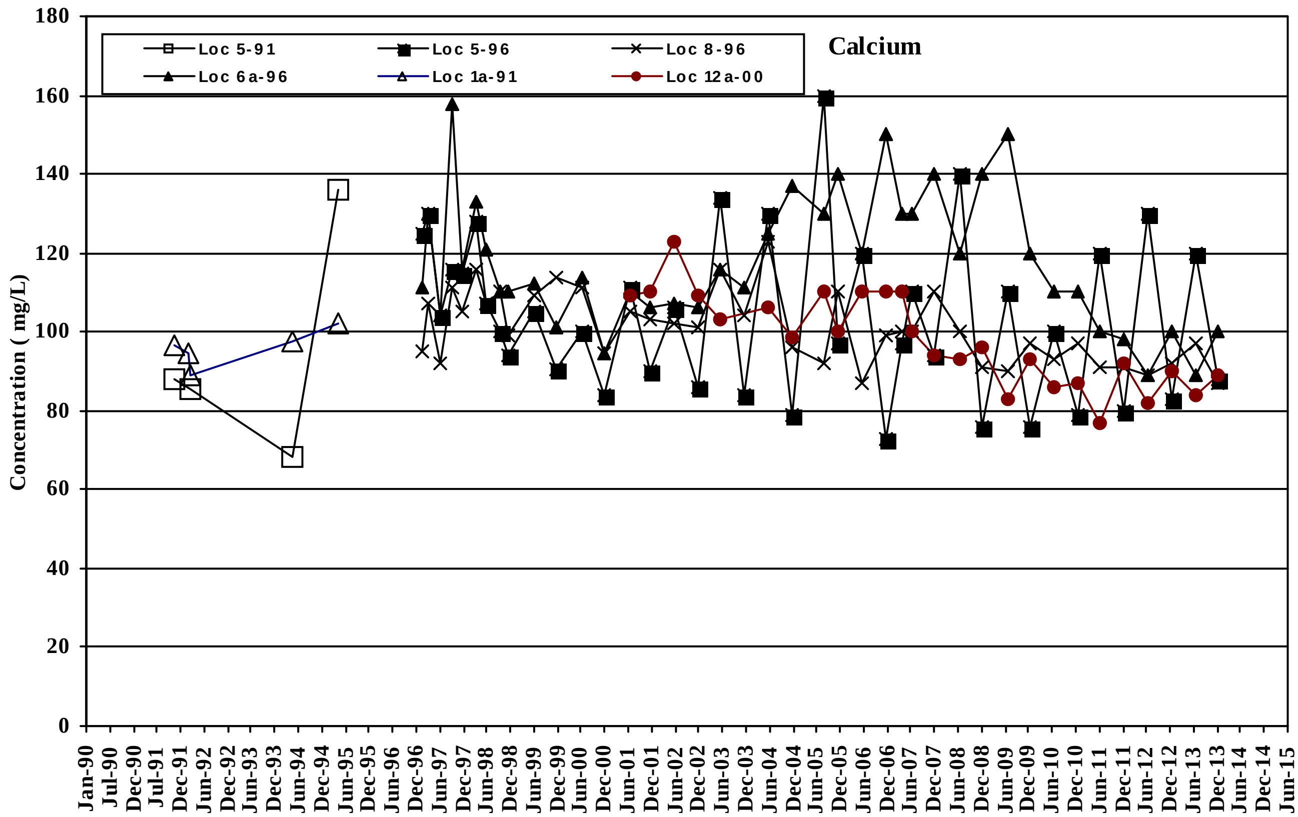
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends Overburden Locations East of Wet/Dry or Transfer Station Property

FIGURE
B10

60315291
12 Alk-Ca Location EastOB





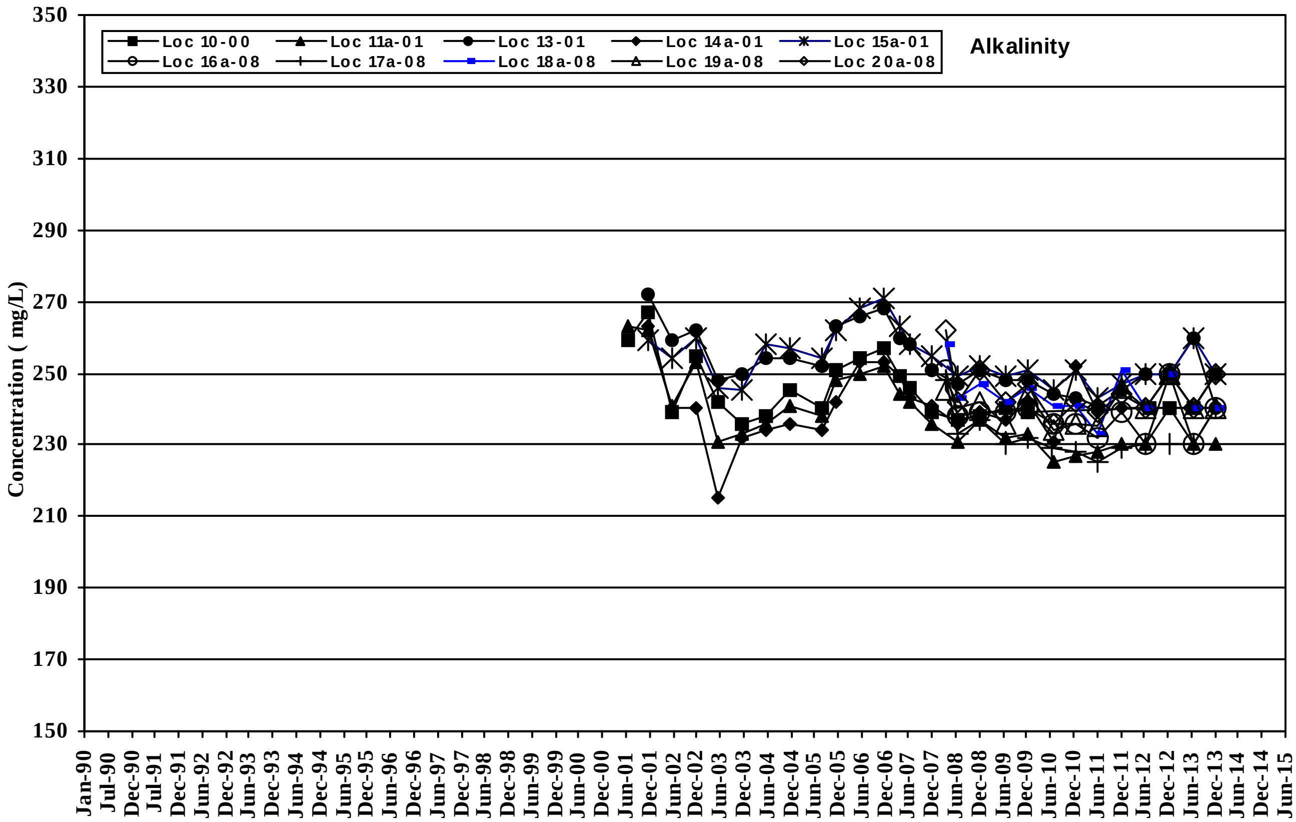
AECOM

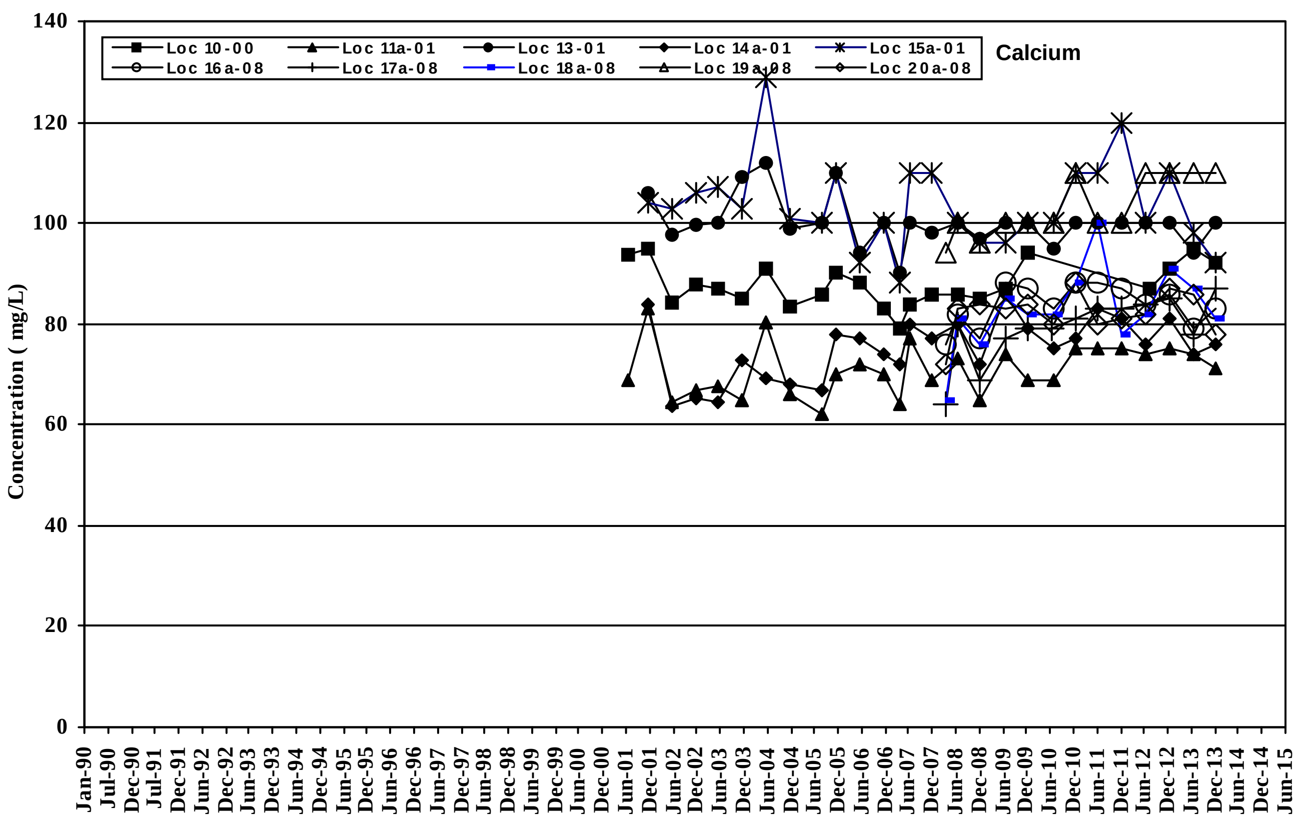
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends
Bedrock Locations West or on Wet/Dry Facility

FIGURE
B11

60315291
12 Alk-Ca Location WestBed





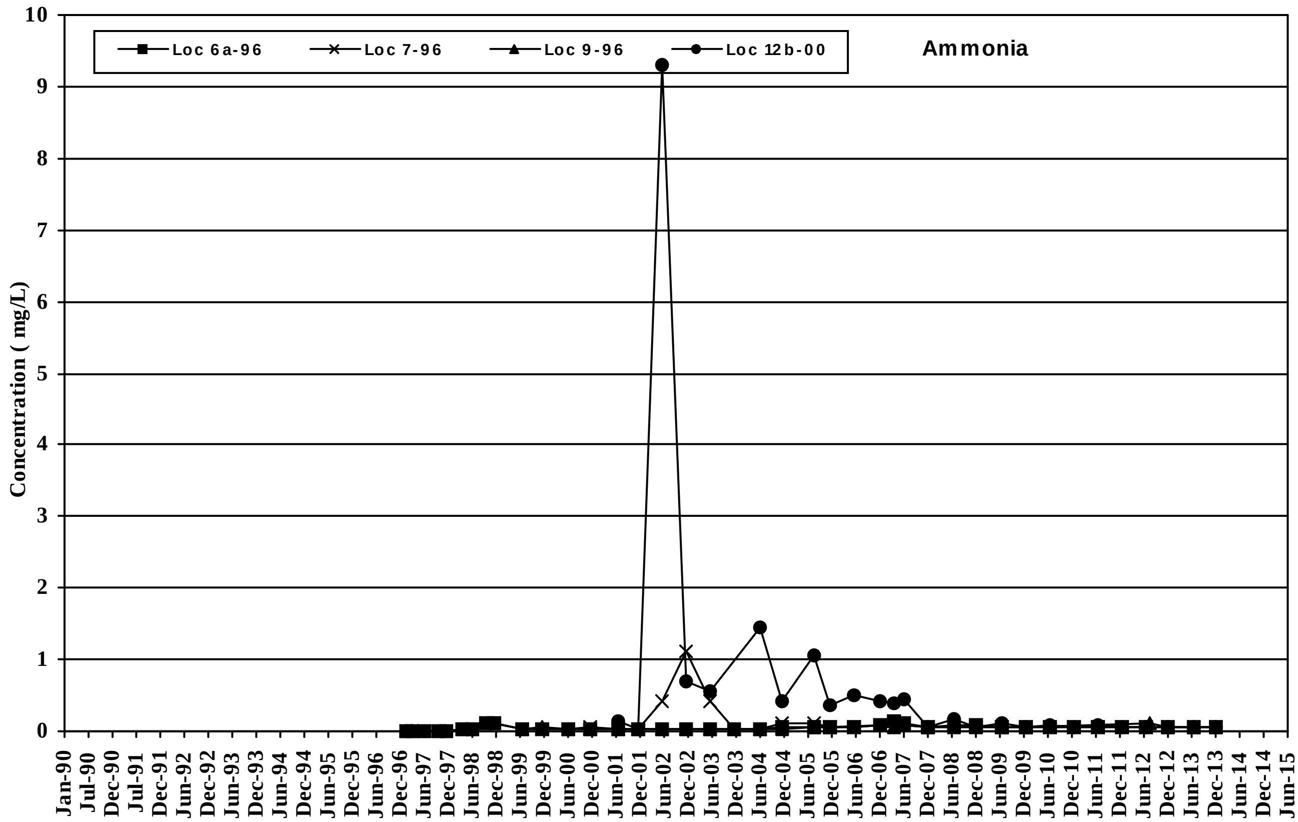
AECOM

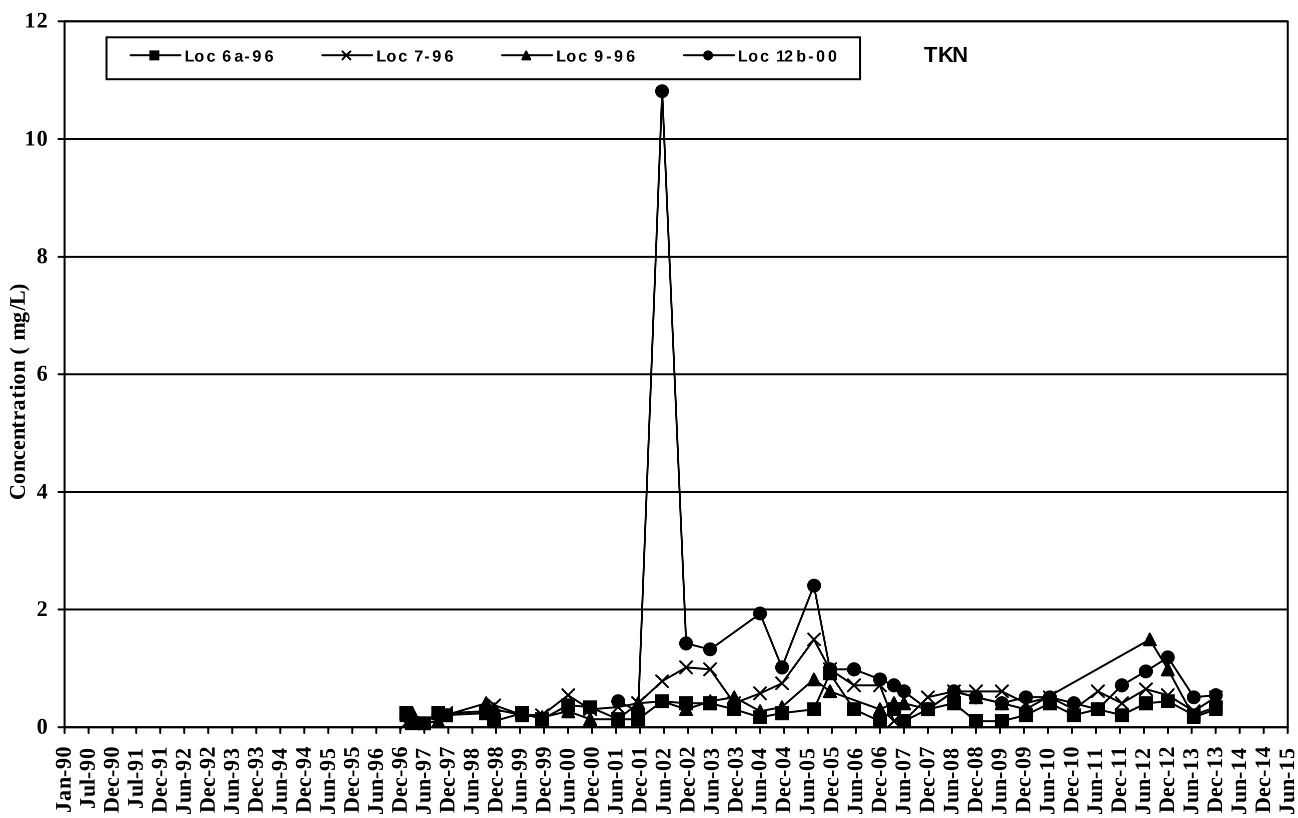
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends
Bedrock Locations East of Wet/Dry or on
Transfer Station Property

FIGURE
B12

60315291
12 Alk-Ca Location EastBed





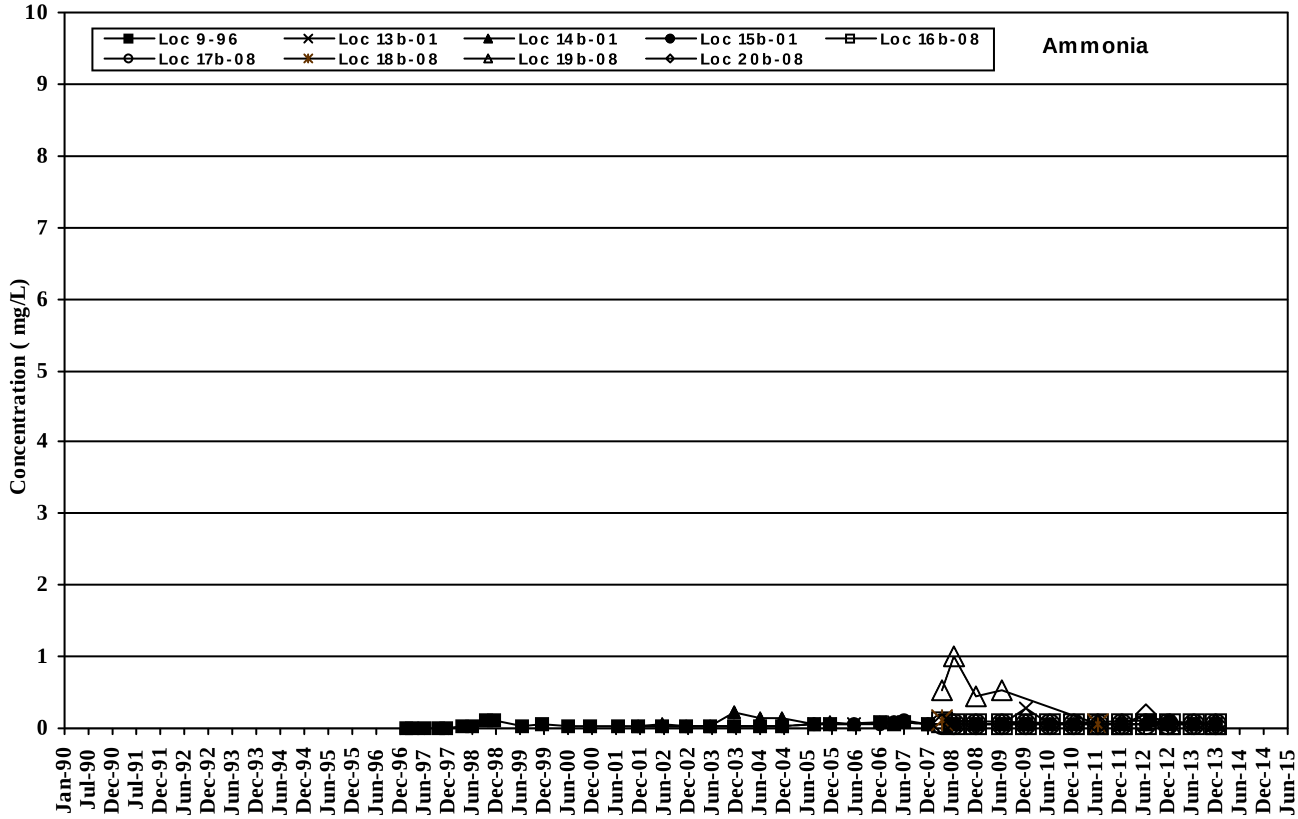
AECOM

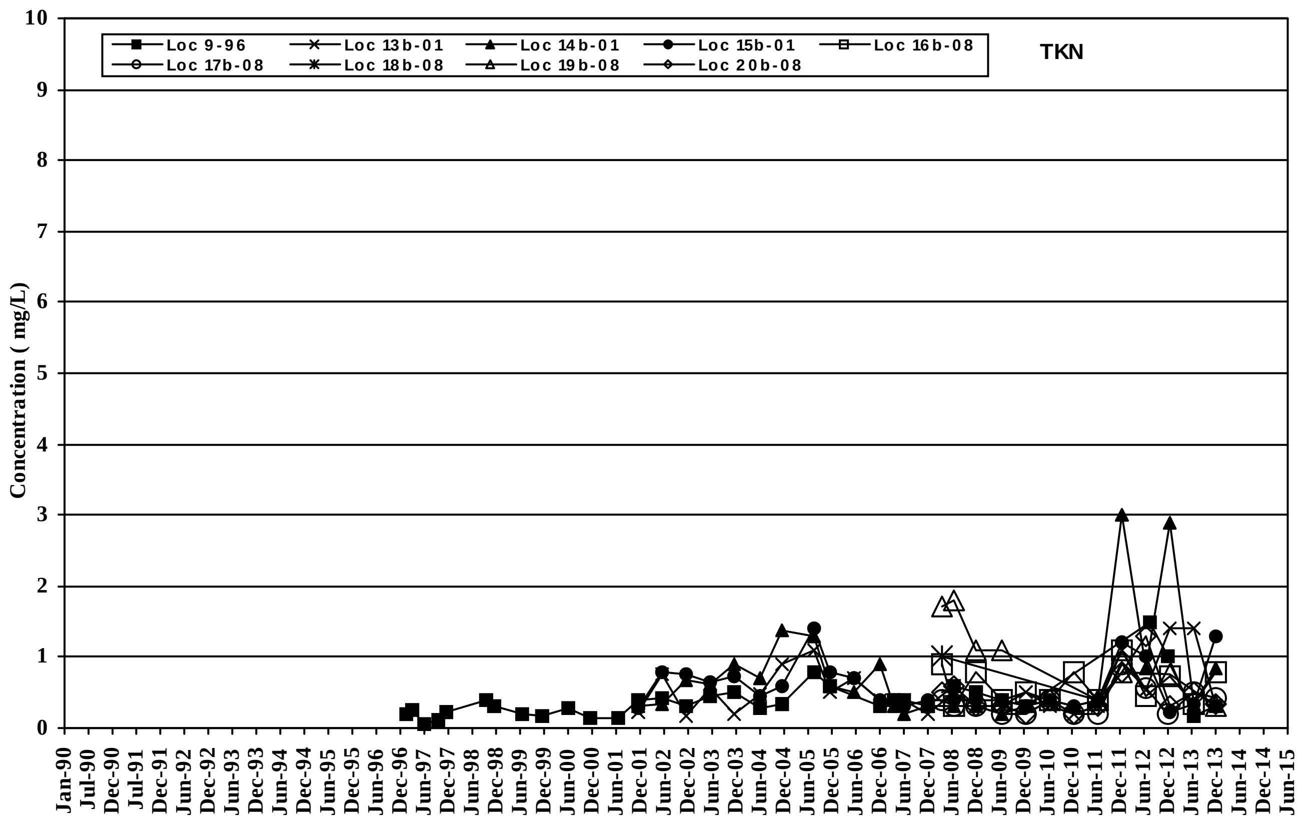
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends
Overburden Locations on Wet/Dry Facility

FIGURE
B13

60315291
12 NH3-TKN Location WestOB





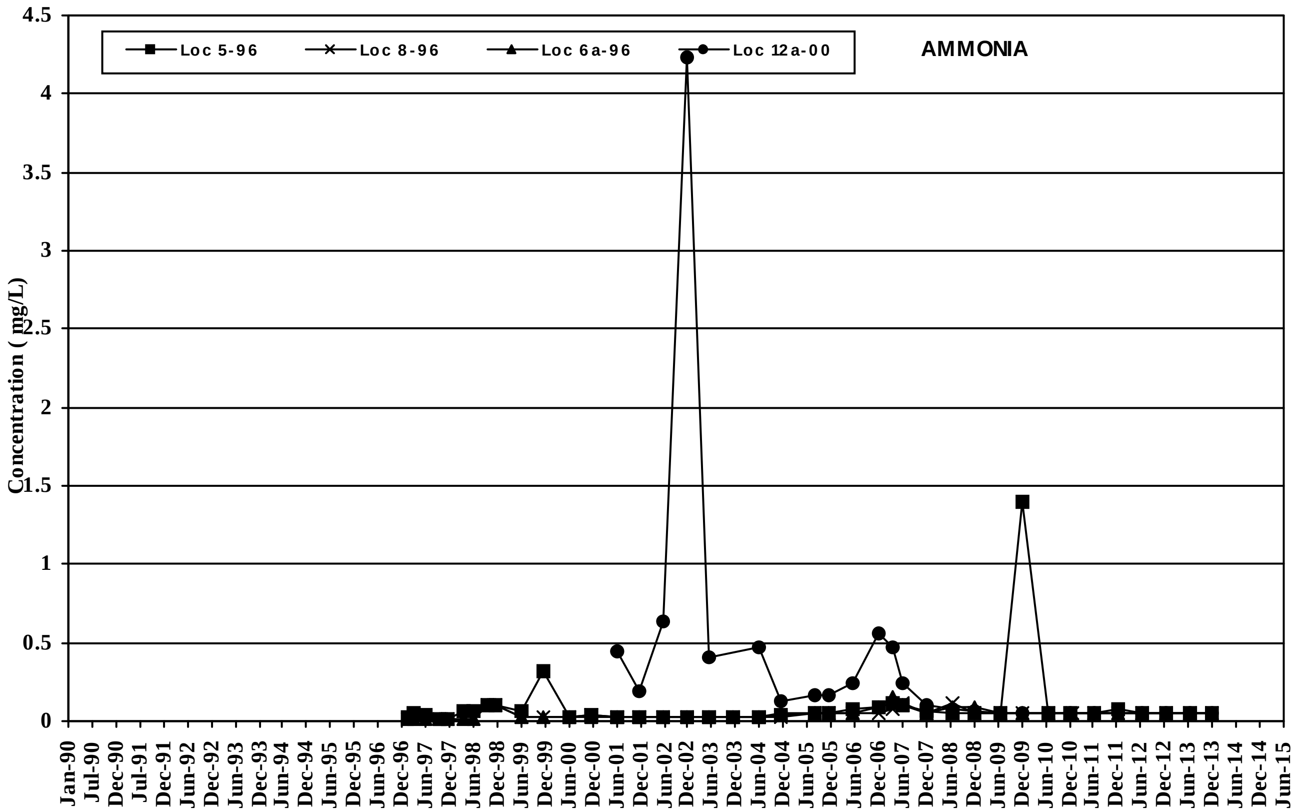
AECOM

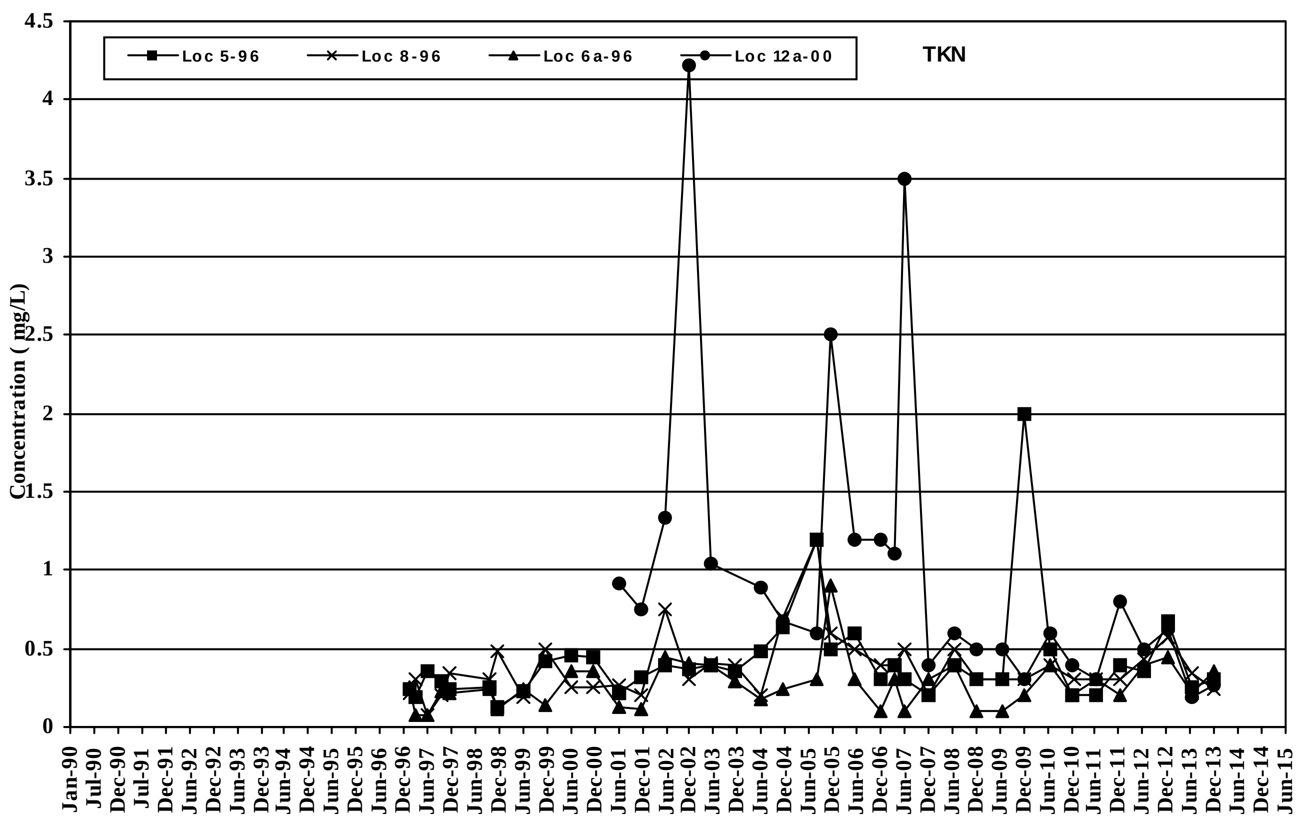
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends Overburden Locations East of Wet/Dry or Transfer Station Property

FIGURE B14

60315291
12 NH3-TKN Location EasttOB





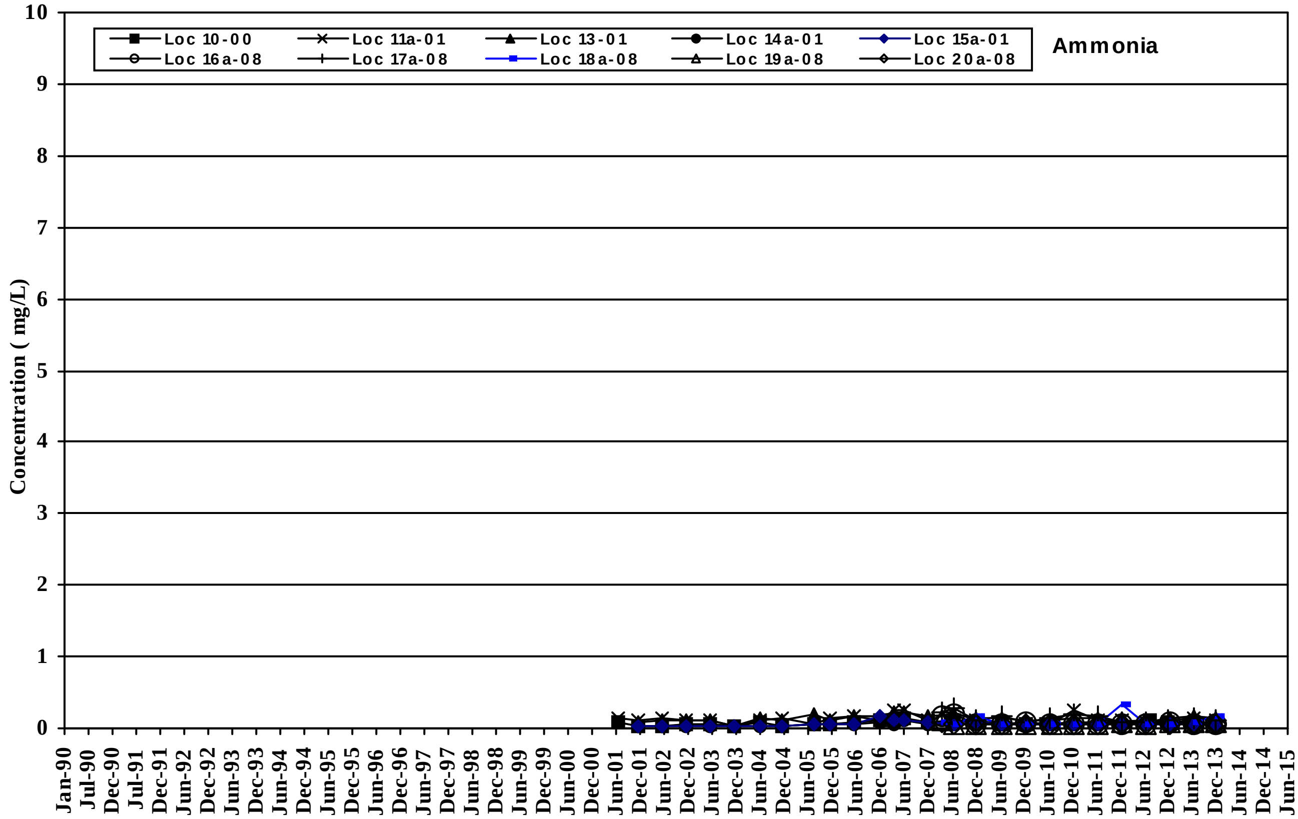
AECOM

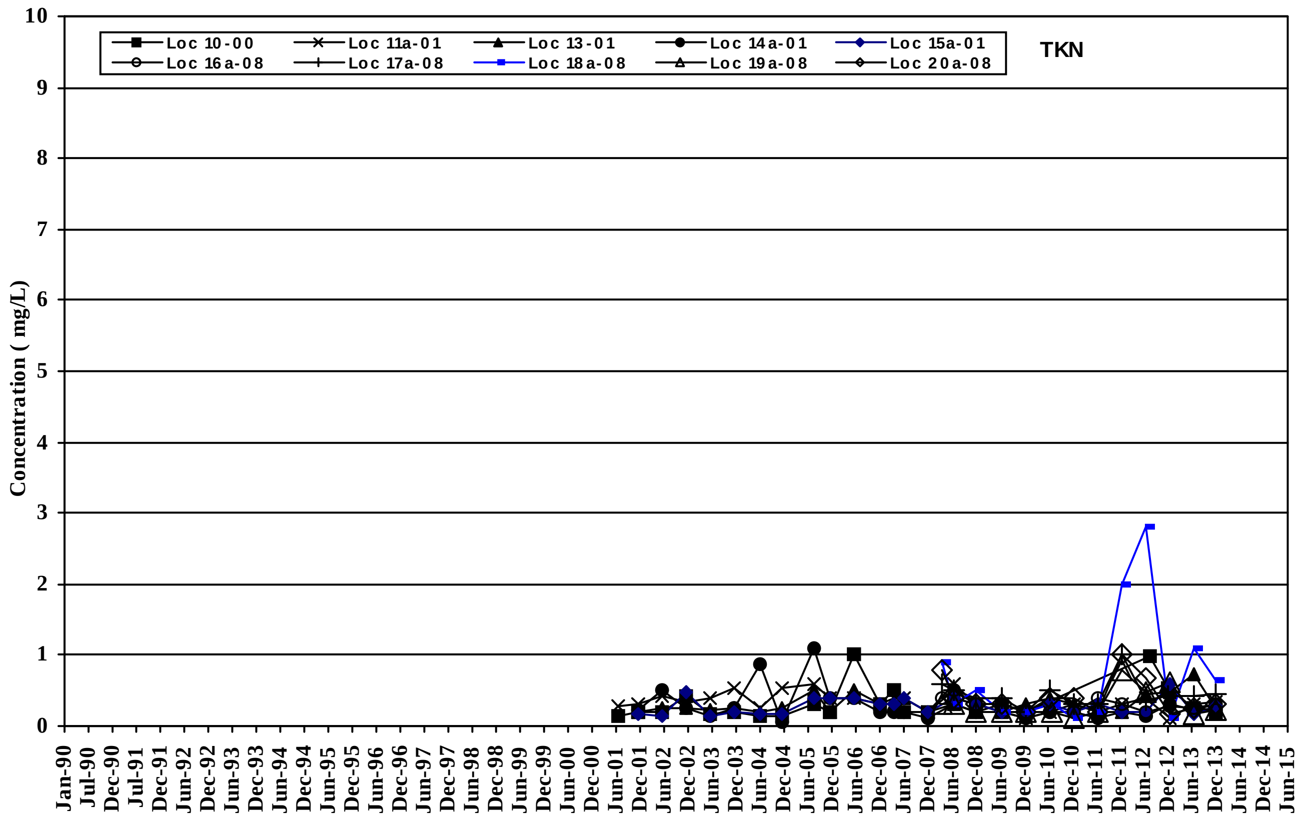
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends
Bedrock Locations West or on Wet/Dry Facility

FIGURE
B15

60315291
12 NH3-TKN Location WestBed





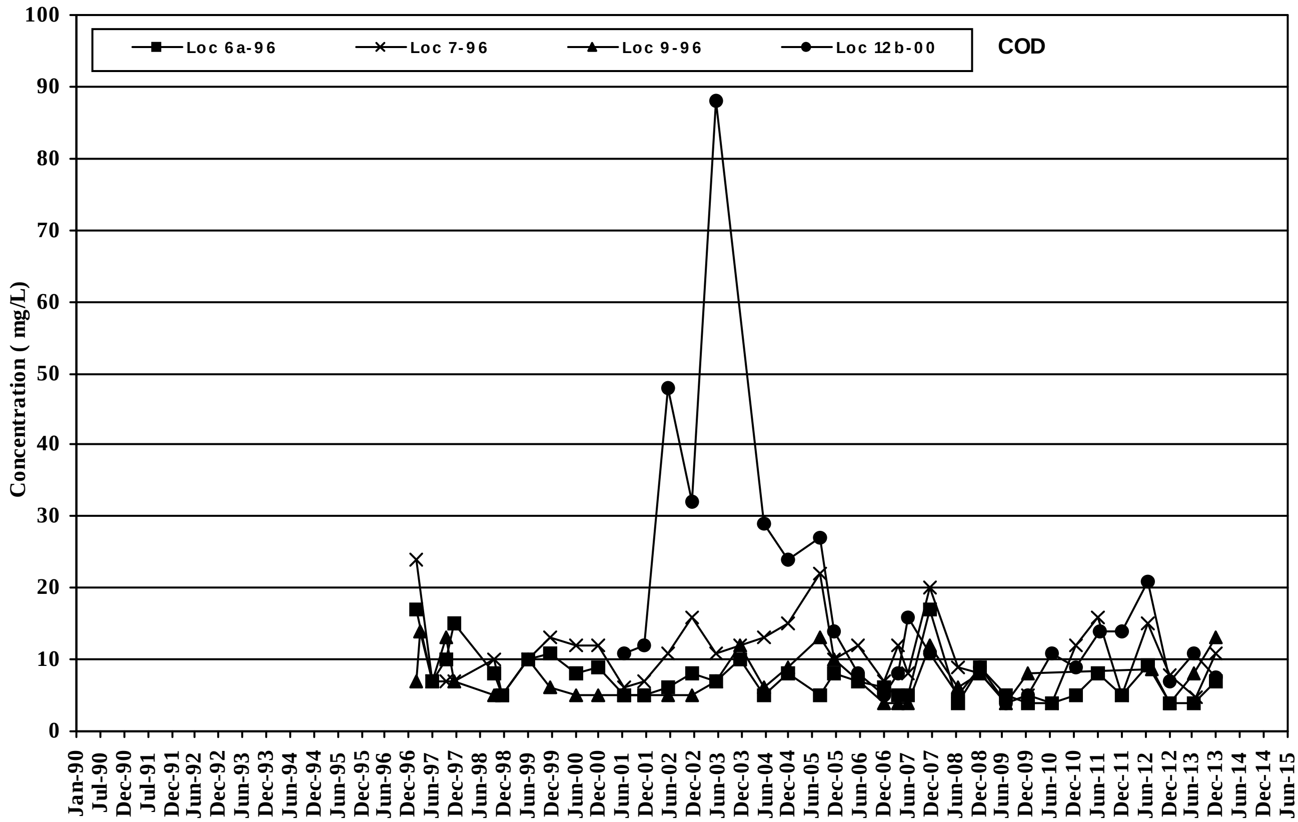
AECOM

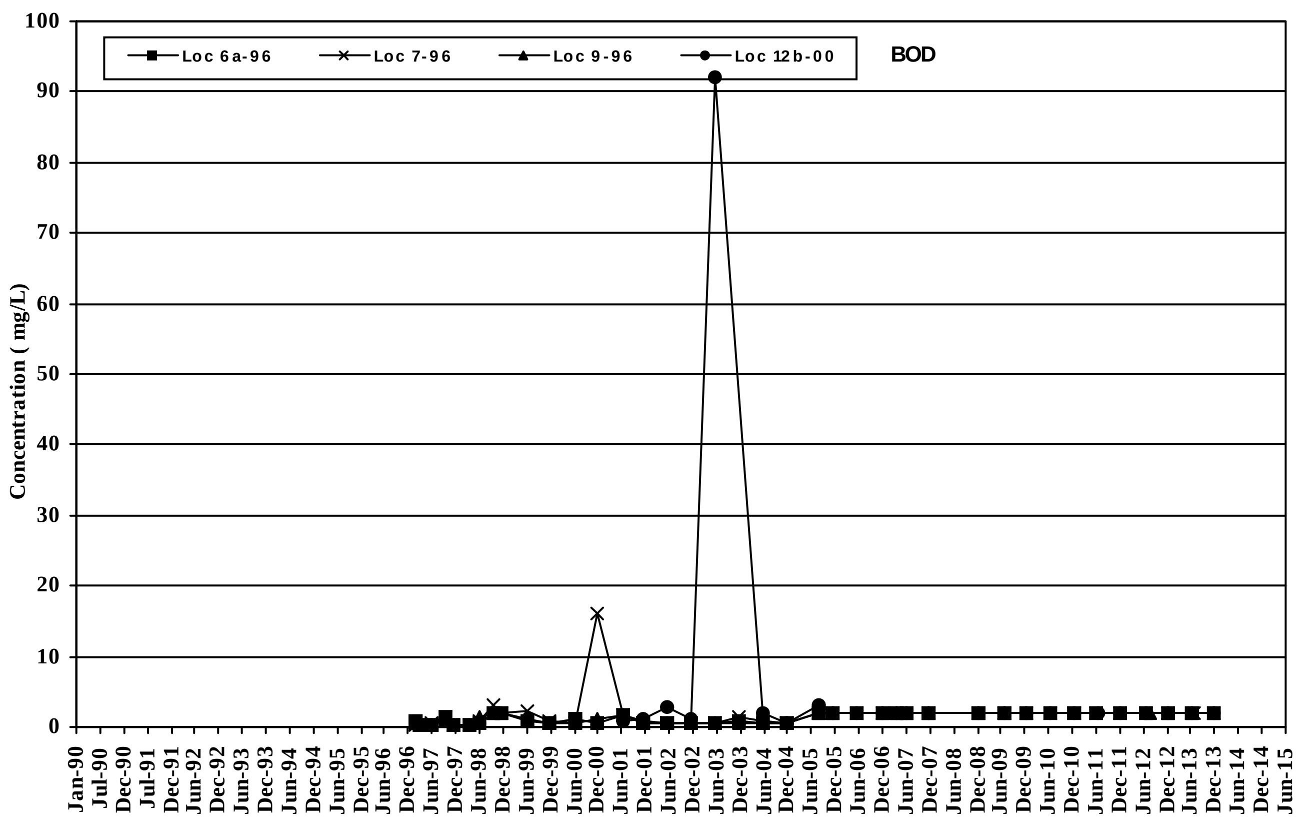
Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends
Bedrock Locations East of Wet/Dry or on
Transfer Station Property

FIGURE
B16

60315291
12 NH3-TKN Location EasttBed





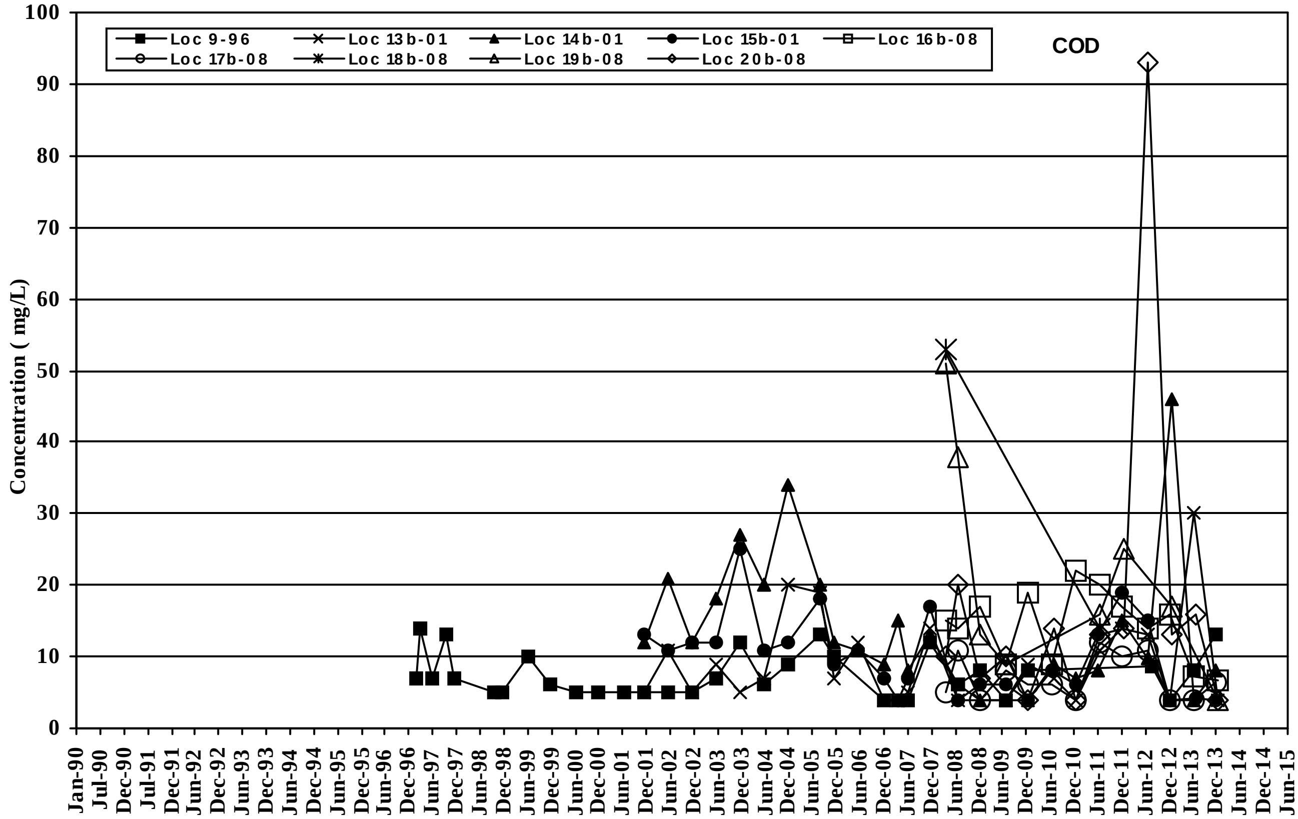
AECOM

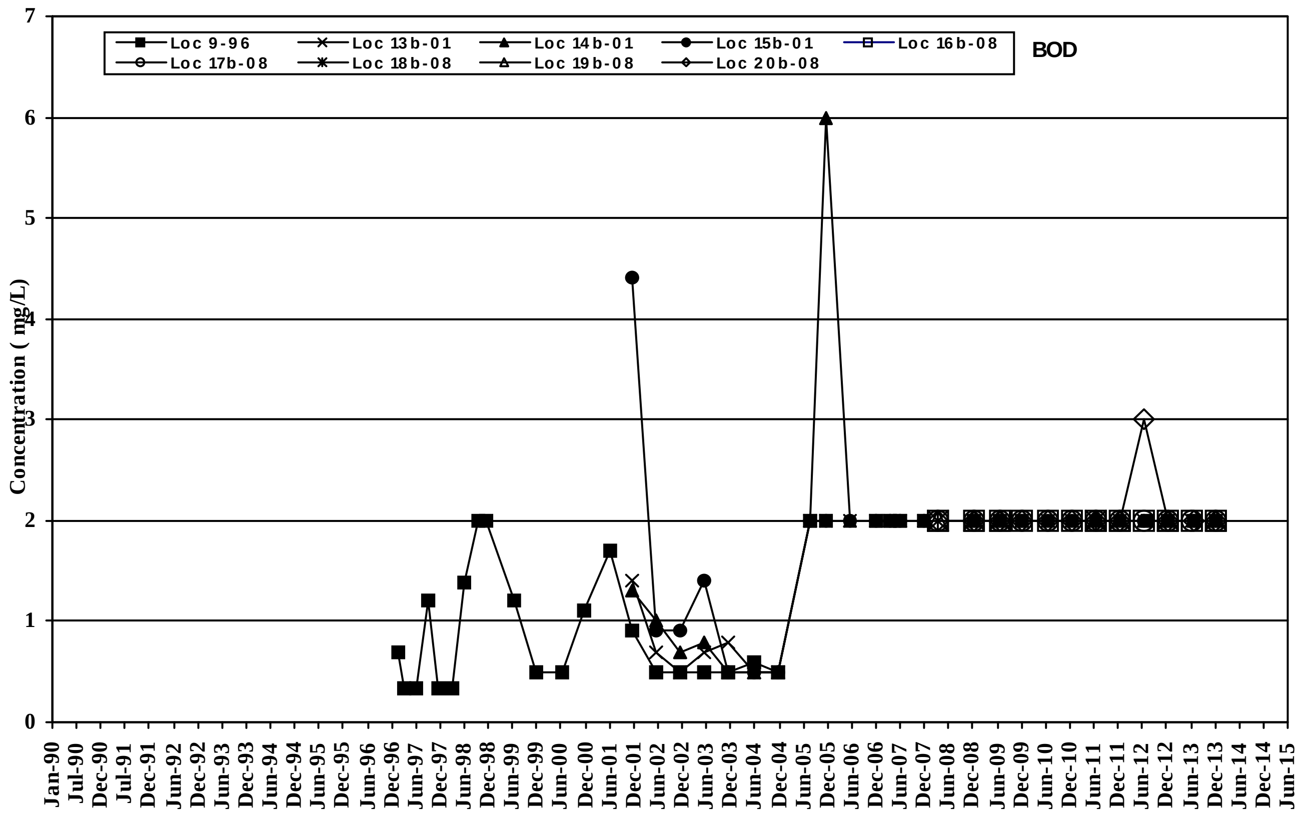
Guelph WRIC & Waste Transfer Station

**Ground Water Chemistry Trends
Overburden Locations on Wet/Dry Facility**

**FIGURE
B17**

60315291
12 COD-BOD Location WestOB





AECOM

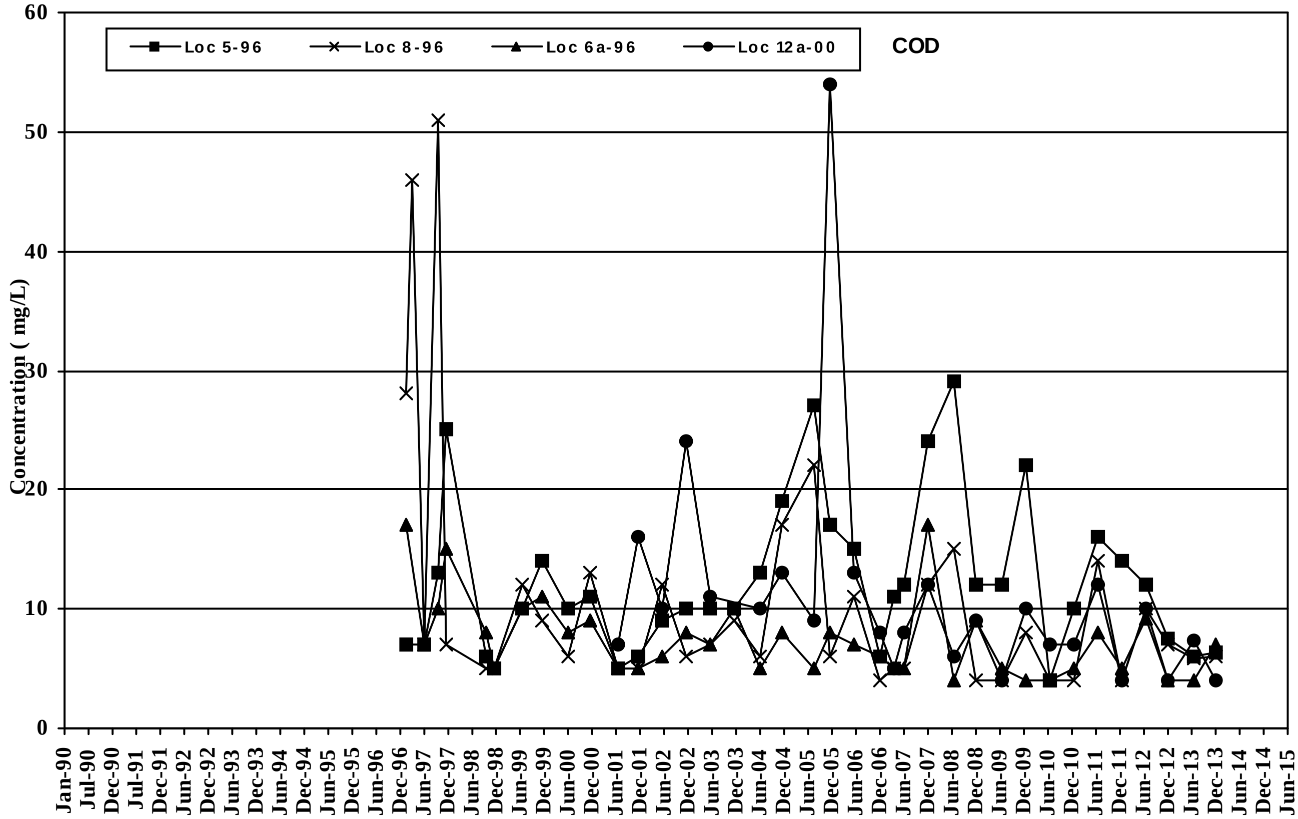
Guelph WRIC & Waste Transfer Station

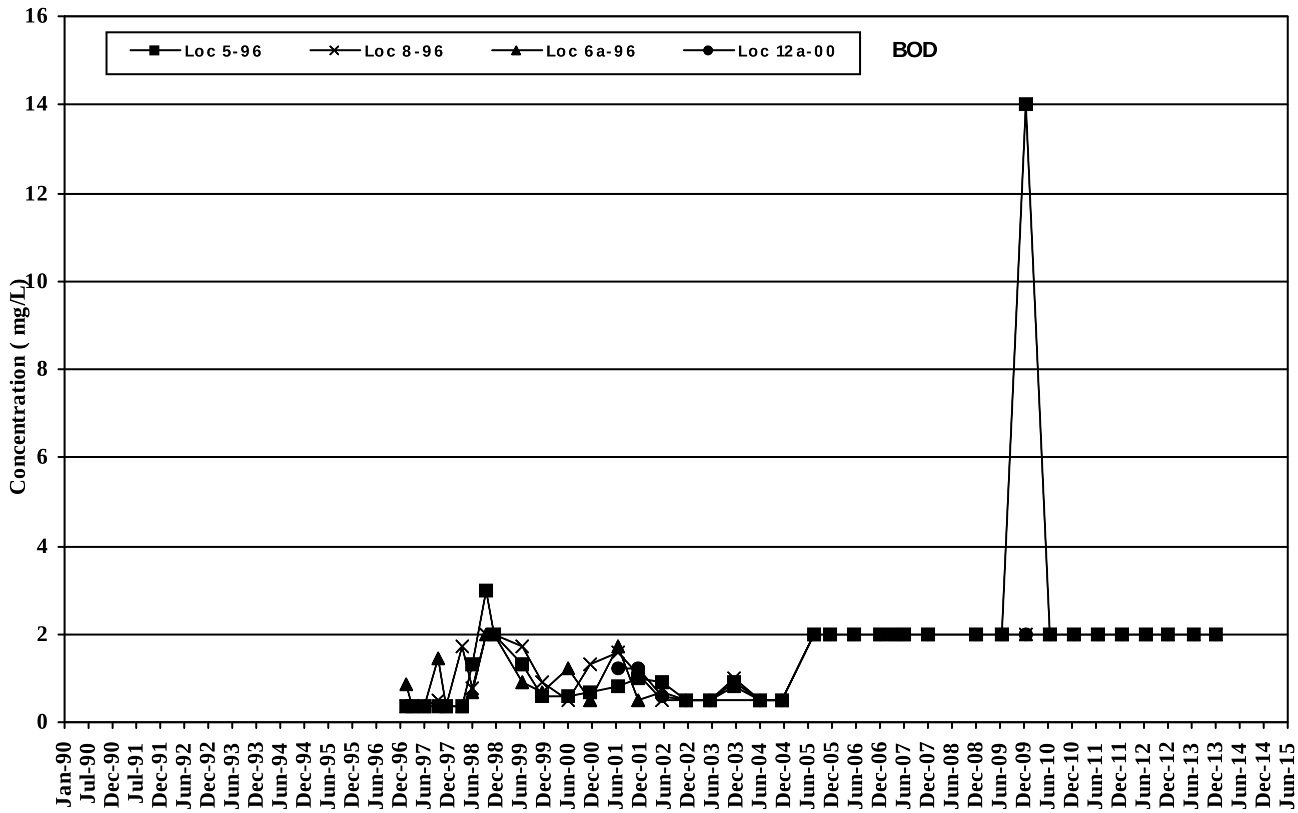
Ground Water Chemistry Trends Overburden Locations East of Wet/Dry or Transfer Station Property

FIGURE B18

60315291

12 COD-BOD Location EastOB





AECOM

Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends
Bedrock Locations West or on Wet/Dry Facility

FIGURE
B19

60315291
12 COD-BOD Location WestBed

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	2a-91 18-Jun-13	2a-91 02-Dec-13	2b-91 19-Jun-13	2b-91 02-Dec-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2		< 0.2
5-Nitroacenaphthene:	< 1	< 1		< 1
Acenaphthylene:	< 0.2	< 0.2		< 0.2
Anthracene:	< 0.2	< 0.2		< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2		< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2		< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2		< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2		< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2		< 0.2
Biphenyl:	< 0.5	< 0.5		< 0.5
Camphene:	< 1	< 1		< 1
1-Chloronaphthalene:	< 1	< 1		< 1
2-Chloronaphthalene:	< 0.5	< 0.5		< 0.5
Chrysene:	< 0.2	< 0.2		< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2		< 0.2
Fluoranthene:	< 0.2	< 0.2		< 0.2
Fluorene:	< 0.2	< 0.2		< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2		< 0.2
Indole:	< 1	< 1		< 1
1-Methylnaphthalene:	< 0.2	< 0.2		< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2		< 0.2
Naphthalene:	< 0.2	< 0.2		< 0.2
Perylene:	< 0.2	< 0.2		< 0.2
Phenanthrene:	< 0.2	< 0.2		< 0.2
Pyrene:	< 0.2	< 0.2		< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5		< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2		< 2
Di-N-butylPhthalate:	< 2	< 2		< 2
Di-N-octylPhthalate:	< 0.8	< 0.8		< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3		< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5		< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5		< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5		< 0.5
Diphenyl ether:	< 0.3	< 0.3		< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5		< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5		< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5		< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1		< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5		< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4		< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5		< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5		< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5		< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5		< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5		< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5		< 0.5
2,4-Dinitrophenol:	< 2	< 2		< 2
2,4-Dimethylphenol:	< 0.5	< 0.5		< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3		< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5		< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3		< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5		< 0.5
4-Nitrophenol:	< 1	< 1		< 1
o-Cresol:	< 0.5	< 0.5		< 0.5
m-,p-Cresol:	< 0.5	< 0.5		< 0.5
Pentachlorophenol:	< 1	< 1		< 1
Phenol:	< 0.5	< 0.5		< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	5-96 20-Jun-13	5-96 03-Dec-13	6a-96 17-Jun-13	6a-96 05-Dec-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	0.3	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 5	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	0.4	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 1	< 1	< 1
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	6b-96 17-Jun-13	6b-96 05-Dec-13	7-96 19-Jun-13	7-96 03-Dec-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 2	< 2	< 5
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 1	< 1	< 1
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

Parameter	8-96 20-Jun-13	8-96 03-Dec-13	9-96 18-Jun-13	9-96 02-Dec-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 5	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 1	< 1	< 1
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

Parameter	10-00 18-Jun-13	10-00 02-Dec-13	11a-00 21-Jun-13	11a-00 04-Dec-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 2	< 2	< 5
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 1	< 1	< 1
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	11b-00 19-Jun-13	11b-00 04-Dec-13	12a-00 18-Jun-13	12a-00 02-Dec-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	4
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 5	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 1	< 1	< 1
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

Parameter	12b-00	12b-00	13a-01	13a-01
	18-Jun-13	02-Dec-13	17-Jun-13	09-Dec-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 2	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 1	< 1	< 1
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	13b-01 17-Jun-13	13b-01 09-Dec-13	14a-01 18-Jun-13	14a-01 04-Dec-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	5	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 2	< 2	< 5
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 1	< 1	< 1
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

Parameter	14b-01 18-Jun-13	14b-01 04-Dec-13	15a-01 19-Jun-13	15a-01 03-Dec-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 5	< 2	< 5
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 1	< 1	< 1
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	15b-01 19-Jun-13	15b-01 03-Dec-13	16A-08 17-Jun-13	16A-08 09-Dec-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:		< 0.5	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 5	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 1	< 1	< 1
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

Parameter	16B-08 17-Jun-13	16B-08 09-Dec-13	17A-08 17-Jun-13	17A-08 04-Dec-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 2	< 2	< 5
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 1	< 1	< 1
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	17B-08 17-Jun-13	17B-08 04-Dec-13	18A-08 20-Jun-13	18A-08 09-Dec-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 5	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 1	< 1	< 1
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	19A-08 20-Jun-13	19A-08 09-Dec-13	19B-08 09-Dec-13	20A-08 20-Jun-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2		< 0.2
5-Nitroacenaphthene:	< 1	< 0.2		< 1
Acenaphthylene:	< 0.2	< 0.2		< 0.2
Anthracene:	< 0.2	< 0.2		< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2		< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2		< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2		< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2		< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2		< 0.2
Biphenyl:	< 0.5	< 0.5		< 0.5
Camphene:	< 1	< 0.3		< 1
1-Chloronaphthalene:	< 1	< 0.2		< 1
2-Chloronaphthalene:	< 0.5	< 1		< 0.5
Chrysene:	< 0.2	< 0.5		< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2		< 0.2
Fluoranthene:	< 0.2	< 0.2		< 0.2
Fluorene:	< 0.2	< 0.2		< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2		< 0.2
Indole:	< 1	< 0.3		< 1
1-Methylnaphthalene:	< 0.2	< 0.2		< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2		< 0.2
Naphthalene:	< 0.2	< 0.2		< 0.2
Perylene:	< 0.2	< 1		< 0.2
Phenanthrene:	< 0.2	< 0.2		< 0.2
Pyrene:	< 0.2	< 0.2		< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5		< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 0.5		< 2
Di-N-butylPhthalate:	< 2	< 0.5		< 2
Di-N-octylPhthalate:	< 0.8	< 2		< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 2		< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 1		< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5		< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5		< 0.5
Diphenyl ether:	< 0.3	< 0.5		< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.8		< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5		< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5		< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1		< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 1		< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.5		< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.4		< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5		< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5		< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5		< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5		< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5		< 0.5
2,4-Dinitrophenol:	< 2	< 0.5		< 2
2,4-Dimethylphenol:	< 0.5	< 0.5		< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.5		< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.3		< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.2		< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.3		< 0.5
4-Nitrophenol:	< 1	< 2		< 1
o-Cresol:	< 0.5	< 0.5		< 0.5
m-,p-Cresol:	< 0.5	< 0.5		< 0.5
Pentachlorophenol:	< 1	< 1		< 1
Phenol:	< 0.5	< 1		< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	20A-08 09-Dec-13	20B-08 20-Jun-13	20B-08 09-Dec-13	21A-08 19-Jun-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	5	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	0.4	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 2	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 1	< 1	< 1
o-Cresol:	< 0.5	< 0.5	1.3	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	7.6	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	30	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	21A-08 03-Dec-13	22A-11 17-Jun-13	22A-11 04-Dec-13	22B-11 17-Jun-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 5	< 2	< 5	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 1	< 1	< 1
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	22B-11 04-Dec-13	23A-12 18-Jun-13	23A-12 05-Dec-13	23B-12 18-Jun-13
MISA Group 19				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	0.3	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	0.9	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	0.4	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 5	< 2	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 1	< 1	< 1
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	23B-12 05-Dec-13	Field Blank 17-Jun-13	Field Blank 18-Jun-13	Field Blank 21-Jun-13
MISA Group 19				
Acenaphthene:	< 0.2		< 0.2	< 0.2
5-Nitroacenaphthene:	< 1		< 1	< 1
Acenaphthylene:	< 0.2		< 0.2	< 0.2
Anthracene:	< 0.2		< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2		< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2		< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2		< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2		< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2		< 0.2	< 0.2
Biphenyl:	< 0.5		< 0.5	< 0.5
Camphene:	< 1		< 1	< 1
1-Chloronaphthalene:	< 1		< 1	< 1
2-Chloronaphthalene:	< 0.5		< 0.5	< 0.5
Chrysene:	< 0.2		< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2		< 0.2	< 0.2
Fluoranthene:	< 0.2		< 0.2	< 0.2
Fluorene:	< 0.2		< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2		< 0.2	< 0.2
Indole:	< 1		< 1	< 1
1-Methylnaphthalene:	< 0.2		< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2		< 0.2	< 0.2
Naphthalene:	< 0.2		< 0.2	< 0.2
Perylene:	< 0.2		< 0.2	< 0.2
Phenanthrene:	< 0.2		< 0.2	< 0.2
Pyrene:	< 0.2		< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5		< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	15		< 2	< 2
Di-N-butylPhthalate:	< 2		< 2	< 2
Di-N-octylPhthalate:	< 0.8		< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3		< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5		< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5		< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5		< 0.5	< 0.5
Diphenyl ether:	< 0.3		< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5		< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5		< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5		< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1		< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5		< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4		< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5		< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5		< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5		< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5		< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5		< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5		< 0.5	< 0.5
2,4-Dinitrophenol:	< 2		< 2	< 2
2,4-Dimethylphenol:	< 0.5		< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3		< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5		< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3		< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5		< 0.5	< 0.5
4-Nitrophenol:	< 1		< 1	< 1
o-Cresol:	< 0.5		< 0.5	< 0.5
m-,p-Cresol:	< 0.5		< 0.5	< 0.5
Pentachlorophenol:	< 1		< 1	< 1
Phenol:	< 0.5		< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

Parameter	Field Blank 05-Dec-13	Trip Blank 17-Jun-13	Trip Blank 18-Jun-13	Trip Blank 21-Jun-13
MISA Group 19				
Acenaphthene:	< 0.2		< 0.2	< 0.2
5-Nitroacenaphthene:	< 1		< 1	< 1
Acenaphthylene:	< 0.2		< 0.2	< 0.2
Anthracene:	< 0.2		< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2		< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2		< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2		< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2		< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2		< 0.2	< 0.2
Biphenyl:	< 0.5		< 0.5	< 0.5
Camphene:	< 1		< 1	< 1
1-Chloronaphthalene:	< 1		< 1	< 1
2-Chloronaphthalene:	< 0.5		< 0.5	< 0.5
Chrysene:	< 0.2		< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2		< 0.2	< 0.2
Fluoranthene:	< 0.2		< 0.2	< 0.2
Fluorene:	< 0.2		< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2		< 0.2	< 0.2
Indole:	< 1		< 1	< 1
1-Methylnaphthalene:	< 0.2		< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2		< 0.2	< 0.2
Naphthalene:	< 0.2		< 0.2	< 0.2
Perylene:	< 0.2		< 0.2	< 0.2
Phenanthrene:	< 0.2		< 0.2	< 0.2
Pyrene:	< 0.2		< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5		< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2		< 2	< 2
Di-N-butylPhthalate:	< 2		< 2	< 2
Di-N-octylPhthalate:	< 0.8		< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3		< 0.3	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5		< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5		< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5		< 0.5	< 0.5
Diphenyl ether:	< 0.3		< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5		< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5		< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5		< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1		< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5		< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4		< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5		< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5		< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5		< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5		< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5		< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5		< 0.5	< 0.5
2,4-Dinitrophenol:	< 2		< 2	< 2
2,4-Dimethylphenol:	< 0.5		< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3		< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5		< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3		< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5		< 0.5	< 0.5
4-Nitrophenol:	< 1		< 1	< 1
o-Cresol:	< 0.5		< 0.5	< 0.5
m-,p-Cresol:	< 0.5		< 0.5	< 0.5
Pentachlorophenol:	< 1		< 1	< 1
Phenol:	< 0.5		< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	Trip Blank 05-Dec-13
MISA Group 19	
Acenaphthene:	< 0.2
5-Nitroacenaphthene:	< 1
Acenaphthylene:	< 0.2
Anthracene:	< 0.2
Benzo(a)anthracene:	< 0.2
Benzo(a)Pyrene:	< 0.2
Benzo(b)Fluoranthene:	< 0.2
Benzo(g,h,i)perylene:	< 0.2
Benzo(k)Fluoranthene:	< 0.2
Biphenyl:	< 0.5
Camphene:	< 1
1-Chloronaphthalene:	< 1
2-Chloronaphthalene:	< 0.5
Chrysene:	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2
Fluoranthene:	< 0.2
Fluorene:	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2
Indole:	< 1
1-Methylnaphthalene:	< 0.2
2-Methylnaphthalene:	< 0.2
Naphthalene:	< 0.2
Perylene:	< 0.2
Phenanthrene:	< 0.2
Pyrene:	< 0.2
Benzyl Butyl Phthalate:	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2
Di-N-butylPhthalate:	< 2
Di-N-octylPhthalate:	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3
4-Chlorophenyl Phenyl Ethe	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5
Diphenyl ether:	< 0.3
2,4-Dinitrotoluene:	< 0.5
2,6-Dinitrotoluene:	< 0.5
bis(2-chloroethoxy)Methan	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1
N-Nitrosodi-N-propylamine:	< 0.5
MISA Group 20	
2,3,4,5-Tetrachlorophenol:	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5
2,3,4-Trichlorophenol:	< 0.5
2,3,5-Trichlorophenol:	< 0.5
2,4,5-Trichlorophenol:	< 0.5
2,4,6-Trichlorophenol:	< 0.5
2,4-Dinitrophenol:	< 2
2,4-Dimethylphenol:	< 0.5
2,4-Dichlorophenol:	< 0.3
2,6-Dichlorophenol:	< 0.5
4,6-Dinitro-o-Cresol:	
2-Chlorophenol:	< 0.3
4-Chloro-3-methylphenol	< 0.5
4-Nitrophenol:	< 1
o-Cresol:	< 0.5
m-,p-Cresol:	< 0.5
Pentachlorophenol:	< 1
Phenol:	< 0.5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	2a-91 18-Jun-13	2a-91 02-Dec-13	2b-91 19-Jun-13	2b-91 02-Dec-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	0.16	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	0.44	< 0.1	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	5-96 20-Jun-13	5-96 03-Dec-13	6a-96 17-Jun-13	6a-96 05-Dec-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	0.19	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.1	0.48	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	6b-96 17-Jun-13	6b-96 05-Dec-13	7-96 19-Jun-13	7-96 03-Dec-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	8-96 20-Jun-13		8-96 03-Dec-13		9-96 18-Jun-13		9-96 02-Dec-13	
MISA Group 16								
1,1,1,2-Tetrachloroethane:	<	0.2	<	0.2	<	0.2	<	0.2
1,1,1-Trichloroethane:	<	0.1	<	0.1	<	0.1	<	0.1
1,1,2,2-Tetrachloroethane:	<	0.2	<	0.2	<	0.2	<	0.2
1,1,2-Trichloroethane:	<	0.2	<	0.2	<	0.2	<	0.2
1,1-Dichloroethane:	<	0.1	<	0.1	<	0.1	<	0.1
1,1-Dichloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
1,2-Dichlorobenzene:	<	0.2	<	0.2	<	0.2	<	0.2
1,2-Dibromoethane:*	<	0.2	<	0.2	<	0.2	<	0.2
1,2-Dichloroethane:	<	0.2	<	0.2	<	0.2	<	0.2
1,2-Dichloropropane:	<	0.1	<	0.1	<	0.1	<	0.1
1,3-Dichlorobenzene:	<	0.2	<	0.2	<	0.2	<	0.2
1,4-Dichlorobenzene:	<	0.2	<	0.2	<	0.2	<	0.2
Bromodichloromethane:	<	0.1	<	0.1	<	0.1	<	0.1
Bromoform:	<	0.2	<	0.2	<	0.2	<	0.2
Bromomethane:	<	0.5	<	0.5	<	0.5	<	0.5
Carbon Tetrachloride:	<	0.1	<	0.1	<	0.1	<	0.1
Chlorobenzene:	<	0.1	<	0.1	<	0.1	<	0.1
Chloroform:	<	0.1	<	0.1	<	0.1	<	0.1
Chloromethane:	<	0.5	<	0.5	<	0.5	<	0.5
Cis-1,2-Dichloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
Cis-1,3-Dichloropropylene:	<	0.2	<	0.2	<	0.2	<	0.2
Dibromochloromethane:	<	0.2	<	0.2	<	0.2	<	0.2
Methylene Chloride:	<	0.5	<	0.5	<	0.5	<	0.5
Tetrachloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
trans-1,2-Dichloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
Trans-1,3-Dichloropropylene:	<	0.2	<	0.2	<	0.2	<	0.2
Trichloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
Trichlorofluoromethane:	<	0.2	<	0.2	<	0.2	<	0.2
Vinyl chloride:	<	0.2	<	0.2	<	0.2	<	0.2
MISA Group 17								
Benzene:	<	0.1	<	0.1	<	0.1	<	0.1
Ethylbenzene:	<	0.1	<	0.1	<	0.1	<	0.1
Styrene:	<	0.2	<	0.2	<	0.2	<	0.2
Toluene:	<	0.2	<	0.2	<	0.2	<	0.2
o-Xylene:	<	0.1	<	0.1	<	0.1	<	0.1
m-Xylene and p-Xylene:	<	0.1	<	0.1	<	0.1	<	0.1
MISA Group 18								
Acrolein:	<	10	<	10	<	10	<	10
Acrylonitrile:	<	5	<	5	<	5	<	5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

Parameter	10-00 18-Jun-13	10-00 02-Dec-13	11a-00 21-Jun-13	11a-00 04-Dec-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	11b-00 19-Jun-13		11b-00 04-Dec-13		12a-00 18-Jun-13		12a-00 02-Dec-13	
MISA Group 16								
1,1,1,2-Tetrachloroethane:	<	0.2	<	0.2	<	0.2	<	0.2
1,1,1-Trichloroethane:	<	0.1	<	0.1	<	0.1	<	0.1
1,1,2,2-Tetrachloroethane:	<	0.2	<	0.2	<	0.2	<	0.2
1,1,2-Trichloroethane:	<	0.2	<	0.2	<	0.2	<	0.2
1,1-Dichloroethane:	<	0.1	<	0.1	<	0.1	<	0.1
1,1-Dichloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
1,2-Dichlorobenzene:	<	0.2	<	0.2	<	0.2	<	0.2
1,2-Dibromoethane:*	<	0.2	<	0.2	<	0.2	<	0.2
1,2-Dichloroethane:	<	0.2	<	0.2	<	0.2	<	0.2
1,2-Dichloropropane:	<	0.1	<	0.1	<	0.1	<	0.1
1,3-Dichlorobenzene:	<	0.2	<	0.2	<	0.2	<	0.2
1,4-Dichlorobenzene:	<	0.2	<	0.2	<	0.2	<	0.2
Bromodichloromethane:		0.22		0.14	<	0.1	<	0.1
Bromoform:	<	0.2	<	0.2	<	0.2	<	0.2
Bromomethane:	<	0.5	<	0.5	<	0.5	<	0.5
Carbon Tetrachloride:	<	0.1	<	0.1	<	0.1	<	0.1
Chlorobenzene:	<	0.1	<	0.1	<	0.1	<	0.1
Chloroform:		0.42		0.19	<	0.1	<	0.1
Chloromethane:	<	0.5	<	0.5	<	0.5	<	0.5
Cis-1,2-Dichloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
Cis-1,3-Dichloropropylene:	<	0.2	<	0.2	<	0.2	<	0.2
Dibromochloromethane:	<	0.2	<	0.2	<	0.2	<	0.2
Methylene Chloride:	<	0.5	<	0.5	<	0.5	<	0.5
Tetrachloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
trans-1,2-Dichloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
Trans-1,3-Dichloropropylene:	<	0.2	<	0.2	<	0.2	<	0.2
Trichloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
Trichlorofluoromethane:	<	0.2	<	0.2	<	0.2	<	0.2
Vinyl chloride:	<	0.2	<	0.2	<	0.2	<	0.2
MISA Group 17								
Benzene:	<	0.1	<	0.1	<	0.1	<	0.1
Ethylbenzene:	<	0.1	<	0.1	<	0.1	<	0.1
Styrene:	<	0.2	<	0.2	<	0.2	<	0.2
Toluene:	<	0.2	<	0.2	<	0.2	<	0.2
o-Xylene:	<	0.1	<	0.1	<	0.1	<	0.1
m-Xylene and p-Xylene:	<	0.1	<	0.1	<	0.1	<	0.1
MISA Group 18								
Acrolein:	<	10	<	10	<	10	<	10
Acrylonitrile:	<	5	<	5	<	5	<	5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	12b-00 18-Jun-13	12b-00 02-Dec-13	13a-01 17-Jun-13	13a-01 09-Dec-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

Parameter	13b-01 17-Jun-13	13b-01 09-Dec-13	14a-01 18-Jun-13	14a-01 04-Dec-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	14b-01 18-Jun-13	14b-01 04-Dec-13	15a-01 19-Jun-13	15a-01 03-Dec-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	15b-01 19-Jun-13	15b-01 03-Dec-13	16A-08 17-Jun-13	16A-08 09-Dec-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	16B-08 17-Jun-13	16B-08 09-Dec-13	17A-08 17-Jun-13	17A-08 04-Dec-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	17B-08 17-Jun-13	17B-08 04-Dec-13	18A-08 20-Jun-13	18A-08 09-Dec-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	0.62	0.59	< 0.1	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	19A-08 20-Jun-13	19A-08 09-Dec-13	19B-08 09-Dec-13	20A-08 20-Jun-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

Parameter	20A-08 09-Dec-13	20B-08 20-Jun-13	20B-08 09-Dec-13	21A-08 19-Jun-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	21A-08 03-Dec-13	22A-11 17-Jun-13	22A-11 04-Dec-13	22B-11 17-Jun-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.1	< 0.1	0.13
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

Parameter	22B-11 04-Dec-13	23A-12 18-Jun-13	23A-12 05-Dec-13	23B-12 18-Jun-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	0.1	< 0.1	< 0.1	0.12
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

Parameter	23B-12 05-Dec-13	Field Blank 17-Jun-13	Field Blank 18-Jun-13	Field Blank 21-Jun-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	0.14	< 0.1	< 0.1	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	Field Blank 05-Dec-13		Trip Blank 17-Jun-13		Trip Blank 18-Jun-13		Trip Blank 21-Jun-13	
MISA Group 16								
1,1,1,2-Tetrachloroethane:	<	0.2	<	0.2	<	0.2	<	0.2
1,1,1-Trichloroethane:	<	0.1	<	0.1	<	0.1	<	0.1
1,1,2,2-Tetrachloroethane:	<	0.2	<	0.2	<	0.2	<	0.2
1,1,2-Trichloroethane:	<	0.2	<	0.2	<	0.2	<	0.2
1,1-Dichloroethane:	<	0.1	<	0.1	<	0.1	<	0.1
1,1-Dichloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
1,2-Dichlorobenzene:	<	0.2	<	0.2	<	0.2	<	0.2
1,2-Dibromoethane:*	<	0.2	<	0.2	<	0.2	<	0.2
1,2-Dichloroethane:	<	0.2	<	0.2	<	0.2	<	0.2
1,2-Dichloropropane:	<	0.1	<	0.1	<	0.1	<	0.1
1,3-Dichlorobenzene:	<	0.2	<	0.2	<	0.2	<	0.2
1,4-Dichlorobenzene:	<	0.2	<	0.2	<	0.2	<	0.2
Bromodichloromethane:	<	0.1	<	0.1	<	0.1	<	0.1
Bromoform:	<	0.2	<	0.2	<	0.2	<	0.2
Bromomethane:	<	0.5	<	0.5	<	0.5	<	0.5
Carbon Tetrachloride:	<	0.1	<	0.1	<	0.1	<	0.1
Chlorobenzene:	<	0.1	<	0.1	<	0.1	<	0.1
Chloroform:	<	0.1	<	0.1	<	0.1	<	0.1
Chloromethane:	<	0.5	<	0.5	<	0.5	<	0.5
Cis-1,2-Dichloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
Cis-1,3-Dichloropropylene:	<	0.2	<	0.2	<	0.2	<	0.2
Dibromochloromethane:	<	0.2	<	0.2	<	0.2	<	0.2
Methylene Chloride:	<	0.5	<	0.5	<	0.5	<	0.5
Tetrachloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
trans-1,2-Dichloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
Trans-1,3-Dichloropropylene:	<	0.2	<	0.2	<	0.2	<	0.2
Trichloroethylene:	<	0.1	<	0.1	<	0.1	<	0.1
Trichlorofluoromethane:	<	0.2	<	0.2	<	0.2	<	0.2
Vinyl chloride:	<	0.2	<	0.2	<	0.2	<	0.2
MISA Group 17								
Benzene:	<	0.1	<	0.1	<	0.1	<	0.1
Ethylbenzene:	<	0.1	<	0.1	<	0.1	<	0.1
Styrene:	<	0.2	<	0.2	<	0.2	<	0.2
Toluene:	<	0.2	<	0.2	<	0.2	<	0.2
o-Xylene:	<	0.1	<	0.1	<	0.1	<	0.1
m-Xylene and p-Xylene:	<	0.1	<	0.1	<	0.1	<	0.1
MISA Group 18								
Acrolein:	<	10	<	10	<	10	<	10
Acrylonitrile:	<	5	<	5	<	5	<	5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	Trip Blank 05-Dec-13
MISA Group 16	
1,1,1,2-Tetrachloroethane:	< 0.2
1,1,1-Trichloroethane:	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2
1,1,2-Trichloroethane:	< 0.2
1,1-Dichloroethane:	< 0.1
1,1-Dichloroethylene:	< 0.1
1,2-Dichlorobenzene:	< 0.2
1,2-Dibromoethane:*	< 0.2
1,2-Dichloroethane:	< 0.2
1,2-Dichloropropane:	< 0.1
1,3-Dichlorobenzene:	< 0.2
1,4-Dichlorobenzene:	< 0.2
Bromodichloromethane:	< 0.1
Bromoform:	< 0.2
Bromomethane:	< 0.5
Carbon Tetrachloride:	< 0.1
Chlorobenzene:	< 0.1
Chloroform:	< 0.1
Chloromethane:	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2
Dibromochloromethane:	< 0.2
Methylene Chloride:	< 0.5
Tetrachloroethylene:	< 0.1
trans-1,2-Dichloroethylene:	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2
Trichloroethylene:	< 0.1
Trichlorofluoromethane:	< 0.2
Vinyl chloride:	< 0.2
MISA Group 17	
Benzene:	< 0.1
Ethylbenzene:	< 0.1
Styrene:	< 0.2
Toluene:	< 0.2
o-Xylene:	< 0.1
m-Xylene and p-Xylene:	< 0.1
MISA Group 18	
Acrolein:	< 10
Acrylonitrile:	< 5

Appendix C

Surface Water Chemistry – Routine and Organics

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
SW 1		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
13-Apr-96	ENT	7.6	310	60						392		123		< 0.5	59.4				0.02		
29-May-96	ENT	7.8			4.74	5.32	< 10	22	1	0.04	0.22	21	14.1	7	42.2	29.8	32.4	0.51	0.06	0.2	0.08
03-Jul-96	ENT						13		2.4	0.19	0.08	73		1							
22-Aug-96	ENT	7.82			0.46	13.1	< 10	< 10	0.56	0.27	0.23	10	7.4	< 0.5	19.7	20.5	38.6	0.25	0.3	0.18	< 0.0004
18-Sep-96	ENT						< 10		2	0.13	0.07	6		< 0.5							
16-Oct-96	ENT						< 10		2	0.13	0.01	1		< 1							
20-Nov-96	ENT						< 10		3	0.08	0.15	7		15							
11-Dec-96	ENT	7.94			6.84	9.6	< 10	93	1.34	0.08	0.18	4	12.6	1	272	155	41.7	0.59	0.02	0.15	0.02
08-Apr-97	WBL	8.64	2840	118	8.09	18.3	9.24	170	2.73	< 0.01	0.206	19	18	< 0.72	732	434	49.7	1.05	< 0.016	< 0.028	0.034
06-May-97	WBL	8.29	1450	81	4.47	9.81	5.7	134	1.37	0.067	0.174	39	13.2	1.15	423	236	27.3	1.73	0.023	0.16	0.071
26-Jun-97	WBL	9.23	826	111	3.86	11.1	4.11	57	1.35	< 0.01	0.124	5	14.3	< 0.72	164	114	26.3	0.743	0.062	0.128	0.017
31-Jul-97	WBL	9.53	1460	123	4.79	13.1	2.82	88	3.51	0.119	0.234	4	15	0.99	394	245	24.2	0.873	0.054	0.234	0.015
11-Sep-97	WBL	8.73	527	94.1	4.47	12.3	2.17	71	1.48	0.017	0.072	< 6	14.7	< 0.72	89.6	76	25.4	0.56	0.095	0.099	0.02
26-Nov-97	WBL	7.6	960				3.12		1.72	0.084	0.139	542		< 0.72							
09-Dec-97	WBL	7.79	970	132	7.02	12.5	1.94	59	1.6	0.014	0.095	3	13.9	< 0.72	198	140	45.7	0.381	0.023	0.081	0.014
08-Jan-98	WBL	7.65	545				6.3		1	0.2	0.31	357		7							
28-Feb-98	Froze																				
31-Mar-98	WBL	8.32	1480	121	3.48	6.75	2.53		1.52	0.023	0.107	5	12.7	< 0.72	443	250	35.5	0.542	0.051	0.107	0.007
30-Apr-98	Dry																				
12-May-98	WBL	7.55	1420				8.52		4.02	0.795	0.3	840		0.72							
24-Jun-98	WBL	9.52	597	112	4.14	9.73	5.58		2.73	0.058	0.245	< 2	10.9	< 0.72	109	72.8	27.7	0.644	0.064	0.245	0.02
31-Jul-98	Dry																				
31-Aug-98	Dry																				
30-Sep-98	Dry																				
31-Oct-98	Dry																				
30-Nov-98	Dry																				
31-Dec-98	Dry																				
31-Jan-99	Froze																				
28-Feb-99	Froze																				
31-Mar-99	Barr	8.01	1624	142	7.49	13	6.7	68	3.6	0.37	0.27	21	33	< 2	441	298	52.7	0.5	0.05	0.4	0.026
30-Apr-99	Dry																				
31-May-99	Dry																				
29-Jun-99	Barr	7.91	307	77	2.9	9	6.4	51	1.72	0.84	0.057	12	15		41.9	34.3	20.6	0.12		0.4	0.019
31-Jul-99	Dry																				
31-Aug-99	Dry																				
30-Sep-99	Dry																				
31-Oct-99	Dry																				
30-Nov-99	Dry																				
14-Dec-99	Barr	8.01	716	168	16.7	18	19.4	49	2.77	1.05	0.11	40	46.9	< 1	57.4	42.5	65.5	0.01	0.04	0.2	0.018
30-Jan-00	Froze																				
28-Feb-00	Froze																				
31-Mar-00	Philip	7.37	2380	123	10.2	15	9.1	87	3.31	0.07	0.224	17	21	< 1	634	370	59.7	0.62	0.03		0.031
27-Apr-00	Philip	7.13	2595	140	29.8	43	16.5	117	115	104	0.423	23	35.8	1	123	85.7	146	0.36	0.06	0.5	0.041
23-May-00	Philip	7.46	1930	142	25.9	53	3.2	137	66.3	68.2	0.47	13	35.3	< 1	96.5	70.2	120	0.42	0.09	0.6	0.073
30-Jun-00	Philip	7.33	88	241	3.7	10	27	60	1.92	0.19	0.286	5	6.6	< 1	23.6	19	24.9	0.36		0.4	0.031

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
SW 1		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
30-Jul-00	Dry																				
29-Aug-00	Dry																				
28-Sep-00	Philip	7.81	374	97	4.32	12.4	12.8	57	2.5	0.08	0.194	128	15.5	< 1	51.8	40.1	30.5	0.16	0.029	0.23	0.035
30-Oct-00	Dry																				
28-Nov-00	Philip	7.63	778	90	7.41	16.8	6	57	2.54	0.08	0.5	29	24.4	< 1	193	109	73.7	0.96	0.022	0.7	0.112
07-Dec-00	Froze																				
31-Jan-01	Froze																				
28-Feb-01	Froze																				
31-Mar-01	Froze																				
24-Apr-01	Philip	7.9	747	175	6.13	11	2.2	65	3.16	0.17	0.12	6	9.8	2	140	122	34.4	0.83		0.4	0.024
28-May-01	Philip	7.29	333	119	3.93	9	8.3	77	2.4	0.11	0.288	10	13.2	< 1	39.4	46	49.4	0.58	0.03	0.4	0.048
30-Jun-01	Dry																				
25-Jul-01	Philip	7.3	322	105	4.82	15	8.1	143	5.3	0.3	0.765	21	21.7	< 1	30.3	29.7	56.9	0.96	0.06	1	0.103
31-Aug-01	Dry																				
27-Sep-01	Philip	7.5	383	128	5.48	15	3	57	1.64	0.07	0.318	2	19	< 1	33.8	31.7	30.5	0.09	0.03	0.3	0.019
18-Oct-01	Philip	7.84	304	125	4.94	9	3.4	50	2.94	< 0.03	0.294	7	4.3	< 1	19.3	24.8	31.7	0.91	0.04	0.4	0.042
30-Nov-01	Philip	7.48	104	39	1.72	4	1.3	24	0.87	0.03	0.3	11	1.5	< 1	4.5	6.8	9.38	0.54	< 0.01	0.2	0.031
04-Dec-01	Philip	7.57	153	61	3.04	6.3	3.1	26	0.68	< 0.03	0.128	1	2.7	< 1	6.5	8.8	19.2	0.31	0.01	0.4	0.043
31-Jan-02	Froze																				
28-Feb-02	Froze																				
29-Mar-02	Froze																				
29-Apr-02	Philip	7.52	398	77	2.9	5	5.6	58	1.88	0.06	0.456	11	7.3	< 1	69.3	57.4	30.8	0.57	0.02	0.5	0.361
31-May-02	Dry																				
05-Jun-02	Philip	7.8	228	55	2.46	4	5.2	75	2.19	0.14	0.438	16	5.6	< 1	28.9	26.4	18.1	0.87	0.02	0.6	0.099
31-Jul-02	Dry																				
30-Aug-02	Dry																				
27-Sep-02	Dry																				
31-Oct-02	Dry																				
29-Nov-02	Dry																				
20-Dec-02	Dry																				
31-Jan-03	Froze																				
28-Feb-03	Froze																				
29-Mar-03	Froze																				
30-Apr-03	Dry																				
31-May-03	Dry																				
05-Jun-03	Philip	6.99	240	68	2.89	4	6.1	51	6	0.16	0.934	118	6.1	< 1	26.1						
31-Jul-03	N/A																				
30-Aug-03	N/A																				
27-Sep-03	Dry																				
31-Oct-03	Dry																				
29-Nov-03	Dry																				
01-Dec-03	Philip	7.21	256	52	3.16	4	4.2	24	0.63	< 0.03	0.146	12	6	< 1	49.7	28.9	18.8	0.54	< 0.01	0.3	0.07
31-Jan-06	Dry																				
28-Feb-06	Dry																				
09-Mar-06	MAX	7.5	245	25	2.2	2	4	22	1.3	0.29	0.17	24	5	2	53	37	8.9	1.8	< 0.02	0.2	0.09

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
SW 1		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
30-Apr-06	Dry																				
16-May-06	MAX	7.6	346	126	4.8	7.6	3	43	1.6	0.16	0.21	3	4	< 1	36	43	31	0.43	0.018		0.023
30-Jun-06	Dry																				
31-Jul-06	Dry																				
31-Aug-06	Dry																				
13-Sep-06	N/A																				
31-Oct-06	Dry																				
30-Nov-06	Dry																				
31-Dec-06	Dry																				
31-Jan-07	Snow																				
28-Feb-07	Snow																				
14-Mar-07	MAX	7.3	238	22	2.4	5.3	3	25	1.3	0.53	0.26	4	7	< 1	49	33	8.7	0.16	< 0.01		0.021
29-Mar-07	MAX	7.8	686	101	6.7	4.4	3	31	1.5	0.08	0.19	10	13	1	140	120	34	0.93	0.021		0.043
30-Apr-07	Dry																				
31-May-07	Dry																				
30-Jun-07	Dry																				
31-Jul-07	Dry																				
31-Aug-07	Dry																				
28-Sep-07	Dry																				
31-Oct-07	Dry																				
21-Nov-07	MAX	7.9	239	69	4.4	8	3	33	1.3	0.09	0.41	8	10	< 1	24	24	15	0.56	0.011		0.035
31-Dec-07	Snow																				
08-Jan-08	MAX	7.5	731	83	5.7	5.4	2	31	1.4	0.06	0.22	3	13	< 1	170	160	35	1.5	0.022		0.09
28-Feb-08	Snow																				
31-Mar-08	Snow																				
10-Apr-08	MAX	8.3	2260	225	20	9.5	< 2	22	0.9	< 0.05	0.06	2	29	< 1	520	350	100	0.2	0.02		0.03
31-May-08	Dry																				
24-Jun-08	MAX	7.6	121	39	2.3	2.6	5	33	2.5	0.9	0.28	24	4	< 1	9	11	11	0.99	0.011		0.067
24-Jul-08	MAX	7.6	98	47	2.1	2.6	5	22	0.6	< 0.05	0.19	5	< 1	< 1	3	2.7	14	0.2	0.01		0.023
11-Aug-08	MAX	7.3	157	61	2.2	2.2	3	19	0.8	0.15	0.19	4	2	< 1	10	11	16	0.2	0.02		0.017
28-Sep-08	Dry																				
31-Oct-08	Dry																				
30-Nov-08	Dry																				
31-Dec-08	Snow																				
30-Jan-09	Snow																				
12-Feb-09	MAX	7.3	374	36	1.7	2.4	< 2	14	0.6	< 0.05	0.19	7	7	< 1	85	60	12	0.5	< 0.01		0.035
11-Mar-09	MAX	6.4	253	47	1.7	2.6	3	19	0.7	< 0.05	0.13	< 10	9	< 1	43	36	12	0.3	< 0.01		0.028
28-Apr-09	MAX	7	374	80	2.7	2.2	< 2	33	0.1	< 0.05	0.11	10	6	1	58	50	23	0.4	0.02		0.04
27-May-09	MAX	7.4	472	88	4	7.6	7	67	3.1	0.63	1.3	9	20	< 1	74	80	22	0.3	0.03		0.032
30-Jun-09	Dry																				
31-Jul-09	Dry																				
31-Aug-09	Dry																				
30-Sep-09	Dry																				
30-Oct-09	Dry																				
30-Nov-09	Dry																				

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
SW 1		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
30-Dec-09	Dry																				
29-Jan-10	Snow																				
26-Feb-10	Snow																				
18-Mar-10	MAX	7.7	268	91	4	3.2	3	23	0.8	< 0.05	0.13	2	5	< 1	27	21	28	< 0.1	< 0.01		0.015
30-Apr-10	Dry																				
31-May-10	Dry																				
30-Jun-10	Dry																				
30-Jul-10	Dry																				
31-Aug-10	Dry																				
30-Sep-10	Dry																				
29-Oct-10	Dry																				
02-Dec-10	MAX	7.68	187	82	3.9	2.4	< 2	31	0.9	< 0.05	0.29	49	2	1	7	7	23	0.2	< 0.01		0.025
31-Dec-10	Dry																				
28-Jan-11	Froze																				
28-Feb-11	Froze																				
31-Mar-11	Snow/																				
08-Apr-11	MAX	7.93	1060	178	9.3	2.6	< 2	32	0.8	< 0.05	0.07	2	4	< 1	200	140	63	< 0.1	< 0.01		0.013
03-Jun-11	MAX	8.1	463	209	9.1	2.3	< 2	44	1.2	0.13	0.15	7	< 1	< 1	22	26	71	0.8	0.02		0.012
22-Jun-11	MAX	7.8	593	270	9.8	1.3	6	53	2.1	< 0.05	0.38	30	< 1	< 1	30	33	88	2.8	0.02		0.007
29-Jul-11	Dry																				
31-Aug-11	Dry																				
30-Sep-11	Dry																				
20-Oct-11	MAX	7.54	67	29	1.7	2.1	< 2	10	0.4	< 0.05	0.25	3	< 1	4	3	2.9	7.5	0.1	< 0.01		0.01
29-Nov-11	MAX	7.19	70	29	1.6	2.6	< 2	10	0.3	< 0.05	0.18	6	< 1	< 1	3	2.4	8.5	0.2	< 0.01		0.016
15-Dec-11	MAX	7.77	200	67	4.7	3.4	< 2	26	0.8	0.33	0.26	4	6	2	16	10	25	0.13	< 0.01		0.014
31-Jan-12	Dry																				
29-Feb-12	Dry																				
29-Mar-12	Dry																				
30-Apr-12	Dry																				
31-May-12	Dry																				
29-Jun-12	Dry																				
31-Jul-12	Dry																				
31-Aug-12	Dry																				
28-Sep-12	Dry																				
31-Oct-12	Dry																				
30-Nov-12	Dry																				
21-Dec-12	Dry																				
30-Jan-13	MAX	6.7	990	23	1.9	3.8	3	25	1.4	0.23	0.2	7	12		230	150	9.4	0.23	< 0.01		0.023
28-Feb-13	Dry																				
29-Mar-13	Dry																				
18-Apr-13	MAX	7.73	1500	74	7.6	5.3	< 2	37	0.9	0.12	0.021	2	8	3.3	390	280	51	< 0.1	< 0.01		0.023
31-May-13	Dry																				
28-Jun-13	Dry																				
31-Jul-13	Dry																				
07-Aug-13	MAX	6.51	540	100	8.6	66	170	360	7.5	0.76	5.5	49	17	2.6	63	15	42	0.61	0.033		0.1

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
SW 1		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
30-Sep-13	Dry																				
31-Oct-13	MAX	7.27	110	44	2.3	2.3	< 2	21	0.55	< 0.05	0.18	2	4	1.9	3	3.6	15	0.22	0.012		0.022
29-Nov-13	Dry																				
31-Dec-13	Dry																				

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
SW 2		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
08-Apr-97	WBL	7.68	2050	120	7.79	35.1	17.3	380	4.91	0.329	0.495	37	20.8	< 0.72	497	293	42.6	2.14	< 0.016	0.582	0.048
06-May-97	WBL	7.98	1600	102	4.5	19.2	13	160	2.59	0.071	0.256	41	18.7	0.83	448	251	29.4	2.18	0.028	0.293	0.068
26-Jun-97	WBL	8.15	796	110	3.12	13.2	4.89	63	3.04	1.16	0.433	7	13.3	1.92	167	119	23.3	5.88	0.178	1.59	0.06
31-Jul-97	WBL	8.56	1020	137	3.74	15.7	14.9	145	5.36	0.079	0.88	54	33.3	1.05	196	154	26.2	2.97	0.062	0.88	0.031
11-Sep-97	WBL	7.43	376	83.4	2.98	13.2	2.83	54	1.85	0.38	0.342	9	26.6	< 0.72	42.5	46	22.8	2.45	0.265	0.489	0.26
26-Nov-97	WBL	7.73	340				3.15		1.12	< 0.01	0.08	220		< 0.72							
09-Dec-97	WBL	7.68	570	85	4.15	7.14	2.78	33	1.16	0.104	0.033	11	39.6	< 0.72	94.7	58	32.8	0.715	0.023	0.064	0.019
08-Jan-98	WBL	7.81	537				4.62		0.8	0.1	0.17	319		2							
28-Feb-98	Dry																				
31-Mar-98	WBL	7.84	1530	87.5	2.67	5.65	15.4		0.996	0.026	0.118	33	23.2	< 0.72	430	274	31.1	0.806	0.049	0.118	0.026
30-Apr-98	Dry																				
12-May-98	WBL	7.74	1120				5.55		2.32	1.22	0.13	654		0.72							
24-Jun-98	WBL	7.51	450	94.7	3.33	7.83	21.1		2.79	0.027	0.259	30	40.5	< 0.72	52.2	43.4	39.4	1.65	0.059	0.259	0.036
31-Jul-98	Dry																				
31-Aug-98	Dry																				
30-Sep-98	Dry																				
31-Oct-98	Dry																				
30-Nov-98	Dry																				
31-Dec-98	Dry																				
31-Jan-99	Froze																				
28-Feb-99	Froze																				
31-Mar-99	Dry																				
30-Apr-99	Dry																				
31-May-99	Dry																				
29-Jun-99	Dry																				
31-Jul-99	Dry																				
31-Aug-99	Dry																				
30-Sep-99	Dry																				
31-Oct-99	Dry																				
30-Nov-99	Dry																				
14-Dec-99	Dry																				
30-Jan-00	Froze																				
28-Feb-00	Froze																				
31-Mar-00	Dry																				
27-Apr-00	Dry																				
23-May-00	Dry																				
30-Jun-00	Dry																				
30-Jul-00	Dry																				
29-Aug-00	Dry																				
28-Sep-00	Dry																				
30-Oct-00	Dry																				
28-Nov-00	Dry																				
07-Dec-00	Froze																				
31-Jan-02	Dry																				
28-Feb-02	Dry																				

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
SW 2		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
29-Mar-02	Dry																				
30-Apr-02	Standi																				
31-May-02	Dry																				
28-Jun-02	Standi																				
31-Jul-02	Dry																				
30-Aug-02	Dry																				
27-Sep-02	Dry																				
31-Oct-02	Dry																				
29-Nov-02	Dry																				
20-Dec-02	Dry																				
31-Jan-03	Froze																				
28-Feb-03	Froze																				
29-Mar-03	Froze																				
30-Apr-03	Dry																				
31-May-03	Dry																				
05-Jun-03	Dry																				
31-Jul-03	N/A																				
30-Aug-03	N/A																				
27-Sep-03	Dry																				
31-Oct-03	Dry																				
29-Nov-03	Dry																				
20-Dec-03	Dry																				
31-Jan-06	Dry																				
28-Feb-06	Dry																				
09-Mar-06	MAX	7.5	278	29	2.1	1	8	42	1.1	0.23	0.19	38	6	< 1	60	40	9.7	1.6	< 0.02	0.2	0.08
30-Apr-06	Dry																				
16-May-06	MAX	7.4	117	45	1.8	1.4	< 2	44	0.6	0.09	0.08	4	2	< 1	9	12	12	0.4	< 0.01		0.019
30-Jun-06	Dry																				
31-Jul-06	Dry																				
31-Aug-06	Dry																				
13-Sep-06	N/A																				
31-Oct-06	Dry																				
30-Nov-06	Dry																				
31-Dec-06	Dry																				
31-Jan-07	Snow																				
28-Feb-07	Snow																				
14-Mar-07	Snow																				
29-Mar-07	MAX	8	2320	348	49	8.7	< 2	18	0.9	0.06	0.034	9	44	< 1	500	420	170	0.27	0.038		0.022
30-Apr-07	Dry																				
31-May-07	Dry																				
30-Jun-07	Dry																				
31-Jul-07	Dry																				
31-Aug-07	Dry																				
28-Sep-07	Dry																				
02-Oct-07	MAX	7.7	425	113	5.2	5.1	5	70	2.9	0.81	0.29	11	23	1	39	45	43	0.85	0.039		0.037

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
SW 2		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
21-Nov-07	MAX	8	199	74	3.3	1.5	3	24	1.7	0.15	0.16	20	9	< 1	10	9.1	24	0.99	< 0.01		0.059
31-Dec-07	Snow																				
08-Jan-08	MAX	7	115	27	1.6	1.5	4	16	1.3	0.06	0.23	11	3	< 1	15	13	9.2	0.68	< 0.01		0.015
28-Feb-08	Snow																				
19-Mar-08	MAX	8.1	2170	300	23	6.1	< 2	38	1.1	0.06	0.16	15	24	< 1	490	290	99	< 0.1	0.02		0.025
10-Apr-08	MAX	8.2	2340	233	21	9.2	< 2	19	0.8	< 0.05	0.12	5	33	< 1	520	350	110	0.2	0.02		0.037
22-May-08	MAX	8	2270	387	32	8.5	7	30	1.5	< 0.05	0.12	8	21	< 1	480	320	120	0.3	0.02		0.029
24-Jun-08	MAX	7.5	148	38	1.6	4.8	7	33	1.7	0.34	0.3	13	3	2	20	12	9	0.55	< 0.01		0.029
24-Jul-08	MAX	7.6	170	50	3.1	3	3	20	0.8	< 0.05	0.15	4	< 1	< 1	21	21	17	0.3	0.01		0.018
11-Aug-08	MAX	7.4	215	55	2.9	2.3	3	13	1	0.38	0.11	4	2	< 1	28	19	16	0.3	0.01		0.013
17-Sep-08	MAX	8	1270	264	17	6.5	< 2	14	0.7	< 0.05	0.06	2	23	< 1	220	160	75	0.2	0.03		0.016
16-Oct-08	Dry																				
31-Oct-08	Dry																				
26-Nov-08	MAX	8	631	155	10	5.6	3	22	0.9	0.06	0.11	47	13	< 1	95	91	50	0.7	0.01		0.04
31-Dec-08	Dry																				
30-Jan-09	Snow																				
12-Feb-09	MAX	7.4	647	63	4.3	2.3	< 2	22	0.7	0.15	0.17	21	10	< 1	150	100	21	1.1	< 0.01		0.064
11-Mar-09	MAX	7.1	1680	259	16	5.6	< 2	17	0.3	< 0.05	0.086	< 10	23	< 1	350	230	77	< 0.1	0.02		0.039
28-Apr-09	MAX	7.3	1350	211	19	6.8	8	54	1.9	<	0.22	76	16	<	270	220	66	1	0.03		0.059
27-May-09	MAX	7.9	2130	347	33	10	2	40	1.5	0.06	0.22	9	17	< 1	430	330	100	1	0.04		0.016
17-Jun-09	MAX	7.7	1990	371	33	12	19	280	14	0.17	2.1	410			390	290	110	9.5	0.05		0.17
17-Jun-09	Dry												<	<							
17-Jun-09	Dry																				
17-Jun-09	MAX	7.7	1990	371	33	12	19	280	14	0.17	2.1	410	<	<	390	290	110	9.5	0.05		0.17
31-Jul-09	Dry																				
31-Aug-09	Dry																				
30-Sep-09	Dry																				
30-Oct-09	Dry																				
30-Nov-09	Dry																				
30-Dec-09	Dry																				
29-Jan-10	Snow																				
26-Feb-10	Snow																				
18-Mar-10	MAX	7.9	2920	248	36	10	3	28	1	< 0.05	0.05	5	31	< 1	770	390	170	< 0.1	0.01		0.021
07-Apr-10	MAX	7.8	2850	285	35	14	12	93	6.4	2.2	0.6	43	19	< 1	710	430	150	1.5	0.02		0.067
30-Apr-10	Dry																				
31-May-10	N/A																				
31-May-10	Dry																				
31-May-10	Dry																				
31-May-10	N/A																				
22-Jun-10	N/A																				
22-Jun-10	Dry																				
22-Jun-10	Dry																				
22-Jun-10	N/A																				
30-Jul-10	Dry																				
31-Aug-10	Dry																				

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
SW 2		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
30-Sep-10	MAX	7.2	207	63	3.4	9.4	4	48	1.4	0.09	0.54	17	1	< 1	22	16	16	0.3	0.02		0.019
29-Oct-10	Dry																				
02-Dec-10	MAX	7.93	326	107	5.1	5.2	< 2	25	0.8	< 0.05	0.11	13	6	2	32	31	26	0.6	< 0.01		0.029
31-Dec-10	Dry																				
28-Jan-11	Froze																				
28-Feb-11	Froze																				
31-Mar-11	Snow/																				
08-Apr-11	MAX	7.87	3010	209	25	5.6	< 2	21	0.6	0.12	0.06	7	35	< 1	780	550	130	< 0.1	0.02		0.038
03-Jun-11	MAX	7.87	3420	321	33	6.7	8	35	1.3	0.08	0.21	5	33	< 1	870	620	150	0.5	0.04		0.011
22-Jun-11	MAX	8.09	1820	378	27	6.8	5	28	1.2	< 0.05	0.13	17	6	< 1	350	250	100	1.7	0.03		0.006
29-Jul-11	Dry																				
31-Aug-11	Dry																				
27-Sep-11	MAX				14	19										5.4	44	4.5	0.03		0.28
30-Sep-11	Dry																				
20-Oct-11	MAX	7.73	157	40	2	4.2	< 2	17	0.5	< 0.05	0.17	4	6	3	19	17	8.9	0.2	< 0.01		0.015
29-Nov-11	MAX	7.53	188	54	3	2.6	< 2	19	0.5	< 0.05	0.13	16	7	4	22	21	13	0.7	< 0.01		0.045
15-Dec-11	MAX	8.03	1310	239	20	6	3	28	1.2	0.1	0.15	17	16	1	220	190	78	1.3	0.014		0.085
31-Jan-12	Dry																				
29-Feb-12	Snow/																				
29-Mar-12	MAX	7.99	1800	340	27	7.2	3	19	0.95	0.057	0.1	15	27	< 1	350	220	110	0.65	0.028		0.028
30-Apr-12	Dry																				
31-May-12	Dry																				
29-Jun-12	Dry																				
31-Jul-12	Dry																				
31-Aug-12	Dry																				
20-Sep-12	MAX	7.97	1400	320	26	7.6	8	36	1.6	< 0.05	0.12	5	32	2	210	190	100	0.28	0.029		0.0097
24-Oct-12	MAX	7.26	260	110	5.7	3.4	4	35	0.78	0.16	0.15	9	4	1.1	17	22	26	0.77	0.018		0.055
30-Nov-12	Dry																				
18-Dec-12	MAX	7.51	1100	230	16	4.9	4	31	1.2	< 0.05	0.089	4	18	< 1	160	150	72	0.21	< 0.01		0.023
30-Jan-13	MAX	6.89	450	35	2.9	2.3	3	29	1.4	0.17	0.15	14	8		99	67	15	0.45	< 0.01		0.047
28-Feb-13	Snow/																				
29-Mar-13	Dry																				
18-Apr-13	MAX	7.4	350	69	8.4	11	11	130	4	0.59	0.17	12	17	15	45	43	32	2	0.027		0.12
28-May-13	MAX	7.97	1500	350	27	6.2	12	410	48	0.23	2.8	440	< 1	3.4	230	220	96	4.6	0.016		0.11
27-Jun-13	MAX	7.96	2000	540	37	3.8	5	120	5.1	0.74	1.4	280	5	< 1	310	250	160	11	0.043		0.2
25-Jul-13	MAX	7.93	1100	220	18	4.3	4	27	1.2	0.09	0.14	8	7	< 1	180	130	82	1.3	0.033		0.009
07-Aug-13	MAX	7.05	210	53	5	13	57	110	3.8	0.18	0.79	50	2	3.6	27	22	24	2.4	0.018		0.1
24-Sep-13	MAX	7.78	440	140	7.1	12	5	38	1.6	0.1	0.34	2	8	2	43	36	36	0.4	0.028		0.014
31-Oct-13	MAX	7.21	120	41	2.6	2.4	< 2	8.2	0.57	< 0.05	0.12	2	< 1	1.9	11	13	14	0.12	< 0.01		0.017
19-Nov-13	MAX	7.97	1300	320	20	6.5	19	47	2.2	< 0.05	0.34	41	7	1.2	220	140	82	3.2	0.022		0.12
31-Dec-13	Dry																				

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
EPTS-01		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
09-Jun-04	Philip	8	583	236	20.8	1	1.3	7	0.27	0.07	0.003		19.4	1	52.3	24.9	93.5	0.09	0.02		0.427
09-Jun-04	N/A																				
09-Jun-04	Philip	8	583	236	20.8	< 1	1.3	7	0.27	0.07	0.003		19.4	< 1	52.3	24.9	93.5	0.09	0.02		0.427
09-Jun-04	N/A					<								<							
30-Nov-04	Philip	8.11	665	244	22.4	2	< 0.5	8	0.18	< 0.03	0.003		21.3	< 1	60.3	23.6	83.4	< 0.01	0.01		0.082
03-Aug-05	N/A																				
28-Nov-05	Maxx	8.18	620	231	24		< 2	< 4	0.4	0.1	< 0.02		18	< 1	51	26	84	< 0.05	0.015	< 0.05	0.077
01-Jun-06	N/A																				
04-Dec-06	MAX																				
30-Mar-07	MAX	8.3	621	242	24	1.3	< 2	4	0.6	0.11	< 0.02		14	< 1	44	24	82	< 0.02	0.015	< 0.05	0.099
14-Jun-07	MAX	8.3	592	243	22	1.3	< 2	10	0.9	0.13	< 0.02		16	< 1	35	18	76	< 0.02	0.014	< 0.05	0.17
16-Aug-07	MAX	8.2	558	235	24	1.5	< 2	12	0.6	0.19	< 0.02		16	< 1	27	15	75	< 0.02	0.014	< 0.05	0.045
05-Dec-07	MAX	8.2	650	232	27	1.7	< 2	6	0.4	0.18	< 0.02		26	< 1	51	22	96	0.06	0.016	< 0.1	0.1
02-May-08	MAX	8.3	610	213	19	1.1	< 2	< 4	0.6	0.05	0.02		17	< 1	51	30	68	< 0.02	< 0.01	< 0.1	0.068
25-Jun-08	MAX	8.1	593	217	20	1.3		11	0.7	0.12	< 0.02		15	< 1	45	26		< 0.02	< 0.01	< 0.1	0.052
11-Sep-08	MAX	8.2	574	228	20	1.4	< 2	11	0.6	< 0.05	< 0.02		16	< 1		21	75	< 0.02	0.013	< 0.1	0.067
09-Dec-08	MAX	8	787	262	20	1.6	< 2	< 4	0.3	< 0.05	< 0.02		19	< 1	80	47	80	< 0.02	0.017	< 0.1	0.13
01-May-09	MAX	7.8	582	231	21	1.3	< 2	< 4	0.5	< 0.05	< 0.02		13	< 1	44	22	75	< 0.02	0.013	< 0.1	0.065
25-Jun-09	MAX	8.1	557	228	21	1.4	< 2	< 4	0.5	< 0.05	< 0.02		12	< 1	31	18	73	< 0.02	0.017	< 0.1	0.056
31-Aug-09	MAX	7.8	1420	334	20	1.7	< 2	140	1.5	0.13	0.12		110	< 1	190	120	160	1	0.19	0.11	0.013
15-Dec-09	MAX	7.8	451	169	20	1.2	< 2	9	0.4	0.06	0.02		11	< 1	26	13	70	< 0.02	0.011	< 0.1	0.15
24-Jun-10	MAX	8	618	235	21	1.3	< 2	< 4	0.6	0.07	0.02		15	1	40	24	73	< 0.06	0.012	< 0.1	0.053
17-Dec-10	MAX	7.98	725	266	24	1.5	< 2	8	0.3	< 0.05	< 0.02		16	< 1	54	28	88	< 0.02	0.023	< 0.1	0.096
15-Jun-11	MAX	8.07	617	238	19	1.6	< 2	17	0.5	< 0.05	< 0.02		12	< 1	45	35	70	< 0.02	0.02	< 0.1	0.073
19-Dec-11	MAX	7.99	770	256	27	1.8	< 2	5	0.4	< 0.05	0.03		30	2	64	45	96	0.04	< 0.01	< 0.1	0.29
31-Jan-12	NA																				
29-Feb-12	NA																				
29-Mar-12	NA																				
17-Apr-12	MAX	8.08	670	250	23	1.4	< 2	13	0.55	< 0.05	0.025	1	14	< 1	45	31	86	< 0.1	0.016		0.08
31-May-12	NA																				
22-Jun-12	MAX	8.05	620	230	21	1.3	< 2	13	0.64	< 0.05	< 0.02	3	14	< 1	38	22	74	< 0.1	0.016		0.055
26-Jul-12	MAX	8.19	590	230	22	1.4	3	12	0.66	0.1	< 0.02	1	14	< 1	34	18	73	< 0.1	0.015		0.039
31-Aug-12	NA																				
20-Sep-12	MAX	8.02	690	250	25	1.5	< 2	9.5	0.75	0.12	< 0.02	1	15	< 1	47	29	84	< 0.1	0.017		0.057
24-Oct-12	MAX	8.09	700	250	24	1.6	< 2	15	0.5	0.2	< 0.02	2	16	< 1	49	30	87	< 0.1	0.018		0.085
30-Nov-12	NA																				
18-Dec-12	MAX	7.88	740	270	25	1.7	< 2	7.6	0.3	0.062	< 0.02	2	18	< 1	58	37	94	< 0.1	< 0.01		0.11
30-Jan-13	MAX	7.91	620	220	20	1.4	< 2	9.1	0.54	< 0.05	< 0.02	2	16	< 1	44	32	76	< 0.1	0.012		0.2
28-Feb-13	NA																				
29-Mar-13	NA																				
18-Apr-13	MAX	8.1	650	210	19	1.2	< 2	18	0.64	< 0.05	< 0.02	< 1	13	< 1	64	50	73	< 0.1	0.011		0.072
28-May-13	MAX	8.16	580	220	22	1.4	< 2	8.9	0.42	0.12	< 0.02	2	13	< 1	35	26	79	< 0.1	< 0.01		0.06
21-Jun-13	MAX	8.43	600	230	20	1.4	< 2	8.5	0.58	< 0.05	< 0.02		14	< 1	35	25	74	< 0.02	0.013	< 0.1	0.051
27-Jun-13	MAX	8.03	630	240	22	1.4	< 2	10	0.43	0.11	< 0.02	3	13	< 1	39	27	78	< 0.1	0.016		0.066
25-Jul-13	MAX	8.17	600	240	21	1.5	< 2	6.3	0.39	0.067	< 0.02	2	12	< 1	32	23	77	< 0.1	0.017		0.059

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
EPTS-01		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
07-Aug-13	MAX	8.2	560	220	20	1.5	< 2	5.7	0.52	0.074	< 0.02	1	12	< 1	30	20	75	< 0.1	0.017		0.058
24-Sep-13	MAX	8.15	640	260	20	1.5	< 2	10	0.93	0.12	< 0.02	2	14	< 1	37	23	74	< 0.1	0.021		0.067
31-Oct-13	MAX	8.13	620	260	20	1.4	< 2	< 4	0.27	< 0.05	< 0.02	< 1	12	< 1	32	19	79	< 0.1	0.015		0.083
19-Nov-13	MAX	8.05	650	270	23	1.7	< 2	8	0.5	0.086	< 0.02	< 1	13	< 1	34	23	85	< 0.1	0.02		0.086
05-Dec-13	MAX	7.87	660	270	22	1.5	< 2	< 4	0.32	0.1	< 0.02	< 1	14	< 1	36	21	80	< 0.1	0.012		0.099

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
TP1		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
31-Jan-06	Dry																				
28-Feb-06	Dry																				
09-Mar-06	MAX	7.4	1440	49	2.7	6	17	61	2.7	0.72	0.32	40	44	3	359	240	40	1.2	< 0.02	0.3	0.12
30-Apr-06	Dry																				
16-May-06	MAX	7.9	200	83	2	0.75	< 2	24	0.8	< 0.05	0.15	4	6	< 1	9	18	27	0.064	0.018		0.15
30-Jun-06	Dry																				
31-Jul-06	Dry																				
31-Aug-06	Dry																				
13-Sep-06	MAX	7.7	159	58	2.6	3	3	21	0.9	0.08	0.26	1	9	< 1	6	5.7	20	0.073	0.031		0.055
31-Oct-06	Dry																				
30-Nov-06	Dry																				
31-Dec-06	Dry																				
31-Jan-07	Snow																				
28-Feb-07	Snow																				
14-Mar-07	MAX	7.9	2000	96	3.6	2.1	4	33	1.8	0.32	0.22	2	17	< 1	520	410	36	0.2	0.027		0.094
29-Mar-07	Dry																				
30-Apr-07	Dry																				
31-May-07	Dry																				
30-Jun-07	Dry																				
31-Jul-07	Dry																				
31-Aug-07	Dry																				
28-Sep-07	Dry																				
02-Oct-07	Dry																				
21-Nov-07	MAX	7.6	181	56	2.8	3.5	7	38	1	0.08	0.26	20	10	< 1	14	16	20	0.82	0.02		0.062
31-Dec-07	Snow																				
08-Jan-08	MAX	7.9	1080	130	2.2	3.1	4	26	1.8	< 0.05	0.17	5	28	< 1	220	220	29	0.34	0.038		0.19
28-Feb-08	Snow																				
19-Mar-08	MAX	7.9	2150	83	1.9	2.6	3	32	0.9	0.27	0.14	4	24	< 1	580	420	20	0.2	0.02		0.073
10-Apr-08	MAX	8.2	542	117	5.3	1.9	6	30	0.9	< 0.05	0.07	2	8	< 1	90	70	35	0.4	0.02		0.007
22-May-08	MAX	8.3	612	140	7.3	3.9	3	50	1.5	< 0.05	0.035	2	18	< 1	98	88	34	0.1	0.04		0.007
24-Jun-08	MAX	8	272	87	3.8	1.8	6	39	1.5	0.12	0.11	10	5	1	26	25	25	0.44	0.023		0.015
24-Jul-08	MAX	8.2	633	193	10	9	5	74	2	0.25	0.12	6	1	< 1	82	53	58	1	0.03		< 0.005
11-Aug-08	MAX	7.5	403	147	7.1	3.4	4	30	1.3	0.21	0.059	4	4	< 1	38	34	40	0.7	0.02		< 0.005
17-Sep-08	MAX	7.8	506	195	8.9	4.4	3	43	1.4	< 0.05	0.073	6	12	< 1	38	40	64	0.9	0.04		0.01
16-Oct-08	MAX	7.7	346	117	3.9	3.1	4	26	0.9	< 0.05	0.11	10	31	< 1	19	22	44	0.5	0.05		0.023
26-Nov-08	MAX	8.1	2710	259	17	3.4	< 2	47	2.3	0.1	0.25	91	31	< 1	640	380	98	2	0.02		0.078
31-Dec-08	Snow																				
30-Jan-09	Snow																				
12-Feb-09	MAX	7.6	2370	85	3.8	2.5	< 2	24	1.3	0.14	0.28	40	21	< 1	640	450	33	2.9	< 0.01		0.26
11-Mar-09	MAX	6.8	1290	115	3	3	3	26	1	0.07	0.26	< 10	15	< 1	310	240	31	0.2	0.01		0.16
28-Apr-09	MAX	6.7	277	48	2.7	1.3	8	40	2.1	0.23	0.41	50	16	2	43	39	17	2.3	0.01		0.13
27-May-09	MAX	7.1	253	54	2.5	3.7	10	59	2.3	0.21	0.55	20	25	2	27	26	19	1	0.05		0.073
17-Jun-09	MAX	6.6	445	70	6.5	6.8	48	230	7	1	0.9	79	88	18	27	32	51	2.3	0.1		0.19
23-Jul-09	MAX	7.2	151	54	1.9	2.1	3	36	2	< 0.05	0.13	12	12	< 1	5	8.3	18	0.3	0.04		0.047
28-Aug-09	Dry																				

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
TP1		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
29-Sep-09	MAX	7.6	299	74	4.1	5.4	5	43	1.5	0.1	0.27	7	33	< 1	27	23	36	0.9	0.02		0.037
29-Oct-09	MAX	7.4	692	186	9.8	5.8	5	71	2.1	0.08	0.3	36	46	< 1	77	55	77	2.5	0.04		0.1
19-Nov-09	MAX	7.1	413	72	7.6	7.3	32	160	7	0.41	0.87	110	100	4	21	22	56	2	0.06		0.22
09-Dec-09	MAX	7.5	2730	53	8.8	4.3	3	27	1	0.2	0.21	12	10	< 1	760	430	77	0.3	< 0.01		0.28
29-Jan-10	Snow																				
26-Feb-10	Snow																				
31-Mar-10	Dry																				
07-Apr-10	MAX	7.7	541	72	3.4	2.9	< 2	53	1.6	< 0.05	0.24	10	52	2	87	69	42	0.6	0.04		0.25
31-May-10	Dry																				
22-Jun-10	N/A																				
30-Jul-10	Dry																				
31-Aug-10	Dry																				
30-Sep-10	MAX	7.8	512	175	9.5	7.9	4	69	2	0.11	0.25	< 10	10	< 1	43	43	62	1.4	0.02		0.006
05-Nov-10	MAX	8.14	570	187	7.9	5.7	< 2	41	1.7	0.43	0.15	9	15	< 1	50	51	61	0.7	0.02		0.031
02-Dec-10	MAX	7.84	626	219	27	4.7	31	39	1.2	< 0.05	0.13	130	17	1	56	65	92	19	0.02		0.83
31-Dec-10	Snow																				
28-Jan-11	Froze																				
28-Feb-11	Froze																				
31-Mar-11	Snow/																				
08-Apr-11	MAX	8.08	1080	254	16	4.4	4	54	1.6	< 0.05	0.12	66	9	< 1	190	120	84	1.4	0.01		0.026
03-Jun-11	MAX	7.66	470	186	8.8	2.5	10	70	4.2	2.1	0.54	16	< 1	17	33	41	57	4.7	0.03		0.014
30-Jun-11	Dry																				
29-Jul-11	Dry																				
25-Aug-11	MAX	7.49	310	92	4.8	5.9	4	50	2	< 0.05	0.18	15	38	< 1	17	17	40	0.2	0.04		0.018
27-Sep-11	MAX	7.97	500	193	10	6.2	3	68	2.2	< 0.05	0.13	13	30	11	25	25	68	0.9	0.04		0.017
20-Oct-11	MAX	7.94	152	68	1.7	0.9	< 2	15	0.4	< 0.05	0.1	3	5	< 1	3	5.8	22	0.1	< 0.01		0.04
29-Nov-11	MAX	7.27	76	30	1.4	1	3	24	0.6	< 4	0.21	26	4	1	3	3	11	1	< 0.01		0.052
15-Dec-11	MAX	7.86	452	100	4.6	2.3	< 2	24	0.5	< 0.05	0.11	5	12	2	65	54	36	0.27	0.011		0.021
31-Jan-12	Dry																				
29-Feb-12	Dry																				
29-Mar-12	MAX	8.08	1200	280	21	4.8	8	72	1.4	< 0.05	0.15	7	< 1	< 1	210	160	89	1.7	0.023		0.019
30-Apr-12	Dry																				
31-May-12	Dry																				
29-Jun-12	Dry																				
26-Jul-12	MAX	7.09	330	44	4.1	16	22	99	4.1	0.74	0.84	7	57	14	29	27	31	0.27	0.045		0.03
31-Aug-12	Dry																				
20-Sep-12	MAX	7.79	530	170	9.4	3.2	2	44	1.2	< 0.05	0.079	3	9	2.8	48	41	57	0.6	0.024		0.0087
24-Oct-12	MAX	7.72	700	230	12	3.2	3	35	0.71	0.16	0.058	5	16	1	73	50	73	0.36	0.02		0.017
30-Nov-12	Dry																				
18-Dec-12	MAX	7.33	940	240	12	2.6	2	32	1.1	< 0.05	0.18	7	22	< 1	130	100	82	2.3	0.011		0.061
30-Jan-13	MAX	6.98	1200	49	2.7	1.7	7	46	1.4	0.25	0.27	35	14	< 1	270	220	18	1.4	0.011		0.093
28-Feb-13	Dry																				
29-Mar-13	Dry																				
18-Apr-13	MAX	8.18	1500	190	14	2.7	3	45	1.4	0.056	0.061	10	12	2.3	330	240	79	0.96	0.021		0.017
28-May-13	MAX	7.89	570	110	6.1	1.5	4	49	1.3	0.14	0.22	24	38	< 1	82	74	44	1.8	0.038		0.057

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
TP1		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
27-Jun-13	MAX	7.98	620	190	9	1.5	11	77	2	0.056	0.18	38	28	< 1	65	54	70	1.8	0.065		0.031
31-Jul-13	Dry																				
07-Aug-13	MAX	7.5	93	29	1.5	1.6	3	17	1.2	0.078	0.16	8	11	< 1	3	2.8	13	0.35	0.02		0.033
24-Sep-13	MAX	8.18	820	270	17	4.8	4	67	2.4	0.11	0.2	11	4	< 1	100	64	89	3.2	0.028		0.1
31-Oct-13	MAX	7.81	200	71	2.4	2.3	16	47	0.73	< 0.05	0.2	3	10	1	12	12	25	0.4	0.022		0.065
19-Nov-13	MAX	8.01	780	320	20	2.9	3	53	2.1	< 0.05	0.17	13	5	< 1	62	56	94	3.6	0.021		0.14
05-Dec-13	MAX	7.51	420	150	9	2.1	3	34	1.3	0.24	0.21	32	3	3.9	38	35	51	0.55	< 0.01		0.033

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
TP1-Out		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
31-Jan-06	Dry																				
28-Feb-06	Dry																				
09-Mar-06	MAX	7.6	1390	69	3.9	6	10	52	2.4	0.66	0.29	25	27	1	332	220	37	0.92	< 0.02	0.4	0.07
30-Apr-06	Dry																				
16-May-06	MAX	7.8	222	85	3.4	2.7	< 2	31	1.2	0.07	0.13	3	6	< 1	15	23	23	0.47	0.018		0.019
30-Jun-06	Dry																				
31-Jul-06	Dry																				
31-Aug-06	Dry																				
13-Sep-06	MAX	7.6	135	50	2.2	3.8	4	17	0.9	0.06	0.28	1	8	< 1	5	5.4	16	< 0.05	0.032		0.021
31-Oct-06	Dry																				
30-Nov-06	Dry																				
31-Dec-06	Dry																				
31-Jan-07	Snow																				
28-Feb-07	Snow																				
14-Mar-07	MAX	7.6	972	70	4	5.7	4	28	1.7	0.66	0.3	3	11	< 1	220	180	26	0.2	0.018		0.028
29-Mar-07	MAX	8.2	951	170	9.8	5.8	4	38	2.1	< 0.05	0.12	4	23	2	180	170	61	0.48	0.052		0.021
30-Apr-07	Dry																				
31-May-07	Dry																				
30-Jun-07	Dry																				
31-Jul-07	Dry																				
31-Aug-07	Dry																				
12-Sep-07	MAX	7.7	659	107	0.8	45	14	140	3	0.13	0.75	15	48	4	100	53	48	7.2	0.1		0.023
02-Oct-07	MAX	7.9	695	229	9.6	24	7	120	4	0.19	0.26	10	24	2	73	47	72	0.96	0.08		0.022
21-Nov-07	MAX	7.8	191	55	3.1	4.1	5	5	1	0.1	0.22	19	15	< 1	14	15	22	0.77	0.022		0.045
31-Dec-07	Snow																				
08-Jan-08	MAX	7.7	867	107	4	2.9	2	22	1.5	< 0.05	0.12	9	24	< 1	190	150	32	0.43	0.013		0.037
28-Feb-08	Snow																				
31-Mar-08	Snow																				
10-Apr-08	MAX	8.2	535	126	4.3	2.3	< 2	36	1.1	< 0.05	0.14	3	6	1	84	76	32	0.7	0.02		0.011
22-May-08	MAX	8.1	584	155	5.9	2.5	3	41	1.5	< 0.05	0.12	17	14	< 1	80	80	41	0.7	0.04		0.008
24-Jun-08	MAX	7.8	245	87	2.9	1.7	4	37	1.5	0.24	0.23	6	4	1	19	20	22	0.69	0.028		0.019
24-Jul-08	MAX	8	333	128	4.8	5.8	4	43	1.3	0.11	0.15	5	< 1	< 1	27	24	35	1.2	0.03		0.006
11-Aug-08	MAX	7.5	323	118	4.7	2.1	2	24	0.6	0.4	0.059	3	2	< 1	24	24	32	0.5	0.02		0.007
17-Sep-08	MAX	7.9	427	165	7.1	5.2	< 2	26	1.2	< 0.05	0.091	4	8	< 1	33	40	54	0.5	0.03		0.014
16-Oct-08	MAX	7.9	389	130	3.9	4.7	< 2	63	1.1	0.28	0.11	< 1	34	2	23	23	52	< 0.1	0.04		0.007
26-Nov-08	MAX	8.1	4740	243	16	4.2	< 2	36	0.8	0.06	0.056	2	34	< 1	1300	820	160	0.2	0.03		0.055
31-Dec-08	Snow																				
30-Jan-09	Snow																				
12-Feb-09	MAX	7.6	772	86	5.2	2.2	< 2	21	0.7	< 0.05	0.11	11	9	< 1	180	110	33	1	< 0.01		0.046
11-Mar-09	MAX	6.7	526	95	4.5	2.9	3	27	1	< 0.05	0.13	10	13	< 1	99	78	29	1	0.01		0.045
28-Apr-09	MAX	6.7	404	64	3	1.8	8	53	1.6	0.24	0.25	32	21	2	72	57	22	1.5	0.02		0.062
27-May-09	MAX	7	282	52	2.9	4.6	13	71	2.6	0.35	0.5	48	33	4	32	34	21	1.6	0.06		0.08
17-Jun-09	MAX	7	462	133	4.2	6.2	6	53	1.6	0.25	0.13	4	42	< 1	37	42	47	0.6	0.11		0.011
23-Jul-09	MAX	7.1	214	62	3.3	3.4	6	68	2.7	< 0.05	0.5	32	19	< 1	11	16	24	1.2	0.05		0.076
28-Aug-09	Dry																				

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
TP1-Out		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
29-Sep-09	MAX	7.3	228	78	2.7	3.2	3	28	1	0.05	0.19	6	20	< 1	14	15	26	0.1	0.02		0.015
29-Oct-09	MAX	7.8	586	161	6.7	7.7	< 2	35	1.1	0.08	0.14	8	28	< 1	65	48	59	0.3	0.03		0.034
19-Nov-09	MAX	8	627	190	7.7	7.4	< 2	27	1	0.14	0.11	1	18	< 1	70	55	69	0.2	0.03		0.014
09-Dec-09	MAX	7.9	531	167	6.9	4	< 2	21	0.8	0.11	0.06	2	14	< 1	55	48	53	0.2	0.01		0.009
29-Jan-10	Snow																				
26-Feb-10	Snow																				
18-Mar-10	MAX	7.9	723	224	12	6.4	4	34	1.8	0.15	0.16	7	5	< 1	92	73	64	0.8	0.01		0.019
07-Apr-10	MAX	7.7	599	140	6.5	5.1	6	58	1.8	< 0.05	0.29	9	32	< 1	88	72	53	1.4	0.03		0.02
31-May-10	Dry																				
22-Jun-10	N/A																				
30-Jul-10	MAX	7.8	365	135	4.6	3.1	3	42	1.5	0.57	0.17	9	20	< 1	20	19	48	0.7	0.04		0.007
31-Aug-10	MAX	8.2	379	140	4.1	4.5	3	25	1	0.08	0.13	< 1	20	< 1	21	23	52	< 0.1	0.04		< 0.005
30-Sep-10	MAX	7.9	443	146	6.4	6.8	< 2	45	1.4	0.19	0.18	< 10	14	< 1	38	32	47	0.5	0.02		0.008
05-Nov-10	MAX	8.17	569	188	8.1	5.9	< 2	41	1.6	0.43	0.15	7	15	< 1	51	51	63	0.7	0.02		0.031
02-Dec-10	MAX	8	544	177	7.9	3	< 2	22	0.6	< 0.05	0.05	3	16	< 1	49	57	50	0.4	0.01		0.019
31-Dec-10	Froze																				
28-Jan-11	Froze																				
28-Feb-11	Froze																				
31-Mar-11	Snow/																				
08-Apr-11	MAX	7.97	996	195	10	3.6	< 2	33	1.1	< 0.05	0.1	5	21	< 1	190	130	67	0.4	0.02		0.016
03-Jun-11	MAX	7.65	1030	390	29	7.4	< 2	26	1.7	0.52	0.2	9	36	3	66	63	140	1.4	0.04		0.071
22-Jun-11	MAX	8.06	343	150	5.5	1.5	< 2	39	1.4	0.23	0.13	< 10	< 1	< 1	16	21	45	0.6	0.03		< 0.005
29-Jul-11	Dry																				
25-Aug-11	MAX	7.48	394	98	5.3	14	3	49	2.3	0.09	0.3	5	40	< 1	33	22	41	< 0.1	0.03		0.015
27-Sep-11	MAX	7.96	316	109	5.9	6.9	< 2	42	1.5	0.15	0.24	2	27	7	15	14	39	0.2	0.04		0.013
20-Oct-11	MAX	7.95	225	87	3.6	1.9	< 2	17	0.5	< 0.05	0.09	6	8	3	13	14	26	0.2	< 0.01		0.013
29-Nov-11	MAX	7.37	137	50	2.5	1.7	5	35	0.9	< 0.05	0.25	28	10	3	5	7.4	19	1	< 0.01		0.059
15-Dec-11	MAX	7.78	423	70	2.4	1.6	3	25	0.6	< 0.05	0.14	5	10	3	75	56	28	0.33	0.014		0.067
31-Jan-12	Dry																				
29-Feb-12	Dry																				
29-Mar-12	MAX	8	920	170	8.8	3.7	2	41	0.91	0.085	0.15	6	6	< 1	170	130	60	1.1	0.02		0.013
17-Apr-12	MAX	8.1	970	180	8	4.2	< 2	40	1.9	0.09	0.1	5	7	< 1	170	130	65	1.2	0.018		0.0082
31-May-12	Dry																				
22-Jun-12	MAX	8.04	400	140	4.5	3.8	< 2	43	1	0.16	0.11	4	16	< 1	26	32	48	0.67	0.057		0.0086
26-Jul-12	MAX	8.26	410	140	3.3	5.4	2	27	1.4	0.14	0.079	2	17	< 1	28	36	46	< 0.1	0.052		0.0089
31-Aug-12	Dry																				
20-Sep-12	MAX	7.67	400	140	6.7	3	< 2	35	1.1	< 0.05	0.075	2	11	3.1	32	26	47	0.29	0.024		< 0.005
24-Oct-12	MAX	7.68	490	180	9	2.8	< 2	30	0.64	0.15	0.035	4	12	< 1	38	36	58	0.23	0.019		0.0083
30-Nov-12	Dry																				
18-Dec-12	MAX	7.23	740	160	6.9	2	3	21	0.94	< 0.05	0.043	3	23	< 1	120	87	54	< 0.1	0.011		0.025
30-Jan-13	MAX	7.05	1600	61	4.8	2.6	7	57	1.8	0.13	0.28	58	17	< 1	400	300	34	1.7	0.013		0.11
28-Feb-13	Dry																				
29-Mar-13	Dry																				
18-Apr-13	MAX	7.85	1100	94	4.5	1.8	3	31	0.87	0.055	0.056	5	16	2.3	240	190	36	0.49	0.024		0.015
28-May-13	MAX	8.26	1000	150	6	3.9	4	59	2.7	0.1	0.82	49	19	< 1	180	150	57	8.5	0.019		0.015

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
TP1-Out		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02
27-Jun-13	MAX	8.02	370	120	4	1.9	< 2	20	0.71	0.093	< 0.02	2	10	< 1	30	31	42	0.31	0.032		< 0.005
25-Jul-13	MAX	7.96	230	82	3.4	3	< 2	18	0.82	0.17	0.075	1	11	< 1	14	12	33	0.26	0.037		< 0.005
07-Aug-13	MAX	7.68	470	140	7.2	12	14	55	1.9	0.055	0.39	11	< 1	1	58	32	46	1.2	0.028		0.011
24-Sep-13	MAX	7.95	510	180	8.8	3.1	< 2	32	1.2	0.094	0.077	2	9	< 1	43	35	54	0.16	0.024		0.007
31-Oct-13	MAX	7.32	150	52	2.2	2.4	3	17	0.72	< 0.05	0.19	5	8	2.3	10	8.8	17	0.26	0.017		0.025
19-Nov-13	MAX	7.82	440	160	8.9	3.9	< 2	25	0.67	< 0.05	0.038	2	15	< 1	30	28	52	0.12	0.022		0.011
05-Dec-13	MAX	7.81	380	130	6.5	2.9	< 2	15	0.71	0.28	0.049	2	18	2.7	30	25	44	0.66	0.012		0.01

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

SW 3

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	S04 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
31-Jan-02	Dry																				
28-Feb-02	Dry																				
29-Mar-02	Dry																				
30-Apr-02	Dry																				
31-May-02	Dry																				
28-Jun-02	Dry																				
31-Jul-02	Dry																				
30-Aug-02	Dry																				
27-Sep-02	Dry																				
31-Oct-02	Dry																				
29-Nov-02	Dry																				
20-Dec-02	Dry																				
31-Jan-03	Froze																				
28-Feb-03	Froze																				
29-Mar-03	Froze																				
30-Apr-03	Dry																				
31-May-03	Dry																				
05-Jun-03	Philip	6.75	1129	184	10.8	102	172	102	31	5.65	4.3	84	72	6	140						
31-Jul-03	Dry																				
30-Aug-03	Dry																				
27-Sep-03	Dry																				
31-Oct-03	Dry																				
29-Nov-03	Dry																				
01-Dec-03	Philip	5.8	6243	459	73	179	1420	4900	65.8	9	23.4	639	65.8	1180	1880	979	218	8.7	0.14	21.1	0.467
31-Jan-06	Dry																				
28-Feb-06	Dry																				
09-Mar-06	MAX	7.6	2620	248	21	150	130	1200	120	23.1	12	230	< 50	51	628	390	87	11	0.09	10	0.67
30-Apr-06	Dry																				
16-May-06	MAX	7.8	3960	322	35	390	20	1000	53	3.3	2.5	60	61	6	862	550	110	3.2	0.13		0.21
30-Jun-06	Dry																				
31-Jul-06	Dry																				
31-Aug-06	Dry																				
13-Sep-06	N/A																				
31-Oct-06	Dry																				
30-Nov-06	Dry																				
31-Dec-06	Dry																				
31-Jan-07	Snow																				
28-Feb-07	Snow																				
14-Mar-07	MAX	7.5	441	33	1.9	3.3	5	33	1.5	0.57	0.31	21	6	6	100	75	10	0.68	0.011		0.028
29-Mar-07	Dry																				
30-Apr-07	Dry																				
31-May-07	Dry																				
30-Jun-07	Dry																				
31-Jul-07	Dry																				
31-Aug-07	Dry																				
28-Sep-07	Dry																				
02-Oct-07	MAX	7.9	565	211	9.6	31	5	130	5	0.22	1.2	18	40	3	30	28	64	0.9	0.062		0.042

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

SW 3

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	S04 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
21-Nov-07	MAX	6.6	504	116	19	52	180	770	13	1.76	5.2	130	< 20	300	50	13	67	5.7	0.054		0.22
31-Dec-07	Snow																				
08-Jan-08	MAX	7.3	525	75	4.3	16	11	98	2	0.12	0.64	13	13	2	94	74	23	0.59	0.021		0.036
28-Feb-08	Snow																				
19-Mar-08	MAX	7.3	869	39	2.1	6.7	23	110	1.1	0.28	0.64	9	11	14	220	160	12	0.3	< 0.01		0.029
10-Apr-08	MAX	7.7	648	126	7.7	36	150	490	4.1	0.3	2	13	15	18	100	71	34	0.9	0.04		0.04
31-May-08	Dry																				
30-Jun-08	Dry																				
31-Jul-08	Dry																				
31-Aug-08	Dry																				
28-Sep-08	Dry																				
31-Oct-08	Dry																				
30-Nov-08	Snow																				
31-Dec-08	Snow																				
30-Jan-09	Snow																				
12-Feb-09	MAX	7.1	1270	38	7.5	2.2	< 2	120	2.5	0.12	0.42	140	11	1	320	240	28	3.7	< 0.01		0.14
11-Mar-09	MAX	6.6	319	53	2.1	5.7	16	76	1.6	0.14	0.55	10	13	3	53	41	17	0.4	0.01		0.024
28-Apr-09	MAX	6.7	240	59	7	10	28	240	8	0.63	2.1	75	< 5	17	32	21	24	6.8	0.02		0.17
27-May-09	MAX	6.5	310	92	8.1	34	83	380	13	2.4	3.1	130	< 2	13	< 2	14	31	7.4	0.05		0.22
17-Jun-09	MAX	6.5	261	60	7.2	18	59	380	9	1.3	1.4	140	14	14	20	12	32	4	0.04		0.17
23-Jul-09	MAX	6.9	162	58	4.5	22	30	160	4.7	0.81	1.6	79	< 1	7	< 1	2.9	16	1.7	0.02		0.074
28-Aug-09	Dry																				
29-Sep-09	MAX	7.1	235	89	11	29	71	390	11	0.63	3.3	13	< 1	21	< 1	4.3	33	4.9	0.02		0.27
29-Oct-09	MAX	6.8	331	109	13	35	71	520	11	0.37	4.4	360	< 1	27	< 1	6.8	44	7.2	0.05		0.34
19-Nov-09	MAX	7.1	331	109	32	25	61	520	17	0.97	5.6	640	20	10	23	8.5	99	13	0.05		1.1
09-Dec-09	MAX	7.2	3000	44	6.6	3.9	5	100	3	0.42	0.69	110	9	6	840	550	28	2.9	< 0.01		0.13
29-Jan-10	Snow																				
26-Feb-10	Snow																				
18-Mar-10	MAX	7.6	2000	213	77	48	18	200	12	0.52	3.3	41	210	4	190	170	110	2.3	0.09		0.22
07-Apr-10	MAX	7.6	305	63	18	9.7	7	200	6	0.61	1.9	250	37	2	25	20	57	7	0.03		0.44
31-May-10	Dry																				
22-Jun-10	N/A																				
30-Jul-10	MAX	7.8	945	213	15	4	6	140	2.8	0.08	0.48	120	4	< 1	170	110	75	4.1	0.03		0.11
31-Aug-10	Dry																				
30-Sep-10	MAX	7.9	399	155	7.4	7.1	3	42	1.5	0.3	0.41	10	16	1	23	28	48	0.4	0.04		0.02
29-Oct-10	Dry																				
29-Oct-10	MAX																				
29-Oct-10	MAX																				
29-Oct-10	Dry																				
02-Dec-10	Dry						<														
02-Dec-10	Dry																				
02-Dec-10	MAX	7.98	646	182	13	4.7	2	33	1	0.13	0.29	26	31	2	72	38	74	0.9	0.02		0.054
02-Dec-10	MAX	7.98	646	182	13	4.7	< 2	33	1	0.13	0.29	26	31	2	72	38	74	0.9	0.02		0.054
31-Dec-10	MAX																				
31-Dec-10	Snow																				
31-Dec-10	Snow																				
31-Dec-10	MAX																				

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

SW 3

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	S04 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
28-Jan-11	Froze																				
28-Feb-11	Froze																				
31-Mar-11	Snow/																				
08-Apr-11	MAX	8.06	2290	379	24	7.4	< 2	24	0.9	< 0.05	0.06	14	25	< 1	460	350	110	0.3	0.03		0.029
03-Jun-11	MAX	7.93	1840	381	26	7.4	< 2	41	1.3	0.08	0.14	110	21	< 1	320	280	110	1.4	0.03		0.064
30-Jun-11	Dry																				
29-Jul-11	Dry																				
25-Aug-11	MAX	7.14	390	144	12	48	80	360	12	0.95	2.7	230	< 1	35	21	8.7	45	2.8	0.07		0.14
30-Sep-11	Dry																				
20-Oct-11	MAX	7.16	175	60	5.1	17	43	200	4.2	0.46	1.3	81	2	87	10	2.3	22	1.5	0.02		0.11
29-Nov-11	MAX	6.91	51	21	2.7	3.2	5	59	1.1	0.09	0.35	59	< 1	13	2	0.7	10	1.2	< 0.01		0.071
15-Dec-11	MAX	7.28	83	32	1.4	2.1	5	33	0.7	0.1	0.17	11	< 1	9	3	3.1	11	0.37	< 0.01		0.034
31-Jan-12	Dry																				
16-Feb-12	MAX	6.97	13200	54	7	8	19	150	4	0.78	0.7	36	63	42	4200	3400	65	1.1	< 0.1		0.096
29-Mar-12	Dry																				
30-Apr-12	Dry																				
31-May-12	Dry																				
29-Jun-12	Dry																				
31-Jul-12	Dry																				
31-Aug-12	Dry																				
28-Sep-12	Dry																				
24-Oct-12	MAX	6.82	460	120	13	45	200	600	< 5	0.67	3	52	< 20	160	30	9.6	51	2.1	0.062		0.14
30-Nov-12	Dry																				
21-Dec-12	Dry																				
30-Jan-13	MAX	7.43	240	27	3.8	1.1	6	77	2.3	0.22	0.34	97	9	< 1	46	39	16	2.1	< 0.01		0.12
28-Feb-13	Dry																				
29-Mar-13	Dry																				
18-Apr-13	MAX	8.1	2400	320	34	7.6	3	24	1	0.051	< 0.02	7	27	< 1	520	370	140	0.11	0.025		0.025
28-May-13	MAX	7.21	340	97	23	34	110	380	15	4.6	2.8	480	6	14	28	14	66	8.3	0.021		0.44
28-Jun-13	Dry																				
31-Jul-13	Dry																				
07-Aug-13	MAX	7.11	110	38	4.3	12	17	140	5.8	1.3	1.1	170	4	4.9	6	1.7	13	3.4	0.019		0.1
24-Sep-13	MAX	7.45	440	160	6.3	32	25	140	14	6.2	2.6	74	< 1	18	34	18	35	2.7	0.038		0.066
31-Oct-13	MAX	6.79	340	83	9.5	45	130	510	9.8	1.8	3.6	93	< -2	< -1000		7	34	2.1	0.081		0.15
19-Nov-13	MAX	5.77	960	160	28	130	330	1900	21	3.1	11	57	< -1	340		22	86	5	0.18		0.2
05-Dec-13	MAX	6.73	1900	84	7.5	28	90	400	10	1.3	2.6	130	22	190	480	360	28	2.4	0.041		0.18

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

CL-1

Date	Lab	pH	Cond-uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	S04 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L
29-May-96	ENT	7.64			106.6	1130	4444	9828	650	368.7	17.28	255	398.1	144	1804	1160	339	6.21	0.84	8.8	1.04
04-Sep-96	ENT	6.36			31.1	219	976	2027	38.6	18.54	9.56	198	145	56	418	212	118	2.8	2.41	6.55	1.69
16-Oct-96	ENT	7.59			27.7	166	148	542	55.72	13.54	2.45	32	85.3	2	248	124	83.9	1.43	0.19	1.57	0.28
20-Nov-96	ENT	7.13			50.1	5.69	720	1626	1.46	46.7	10.4	107	95.7	3050	824	265	168	2.48	0.23	5.55	0.2
11-Dec-96	ENT	7.45			49.4	218	240	584	52.6	22	7.01	27	106	13	3978	2200	158	2.05	0.16	4.49	0.25
27-Mar-97	WBL	7.91	7690	609	107	263	143	1320	248	228	3.72	108	112	13.3	441	367	667	1.54	0.258	3.16	0.377
06-May-97	WBL	8.44	3580	1050	43.3	344	969	2110	173	105	6.36	750	50.3	304	441	262	136	5.99	0.281	5.6	0.477
27-Jun-97	WBL	7.15	5590	1440	64.1	653	1890	3500	165	127	18.9	410	5.2	614	586	266	194	5.17	0.448	15.2	0.476
11-Sep-97	WBL	8.25	6640	1870	97.1	925	541	1100	201	124	15.4	220	51.9	179	913	615	147	39.9	1.32	39.5	6.84
01-Oct-97	WBL	8.12	17900	4190	214	1820	2090	7190	560	467	14.7	90	114	1240	2860	1800	370	8.68	1.81	29.6	2.44
09-Dec-97	WBL	7.68	15200	2830	258	1380	570	4450	686	374	13.6	1740	188	745	2070	1360	865	1.44	0.967	12.8	0.451
01-Apr-98	WBL	8.18	5910	1230	79.6	472	193			134		180	217	183	797	501	183	1.72	0.342	13.7	0.33
24-Jun-98	WBL	7.54	3780	1490	70.4	316	771			61.6		388	125	81.1	331	216	326	8.25	0.268	7.39	2.53
02-Oct-98	CAN	7.7	2000	420	38	160	52	370	38	6.5	3.4	40	130	9	210	130	110	2.8	0.18		0.43
03-Dec-98	CAN	7.6	1800	490	37	110	64	520	45	6.8	3.4	210	97	35	170	110	98	1.5	0.14		0.36
14-Dec-99	Barr	7.02	7051	2300	85.1	514	2870	5002	339	286	10.4	282	77.8	1130	734	571	181	0.37	0.52	7.4	0.038
21-Jun-00	Philip	7.72	16840	1030	322	627	42.3	1393	918	930	6.7	489	363	< 1	1100	623	1270	4.57	0.76	6.8	1.01
07-Dec-00	Philip	7.71	32400	5430	264	2210	5320	#####	672	627	11.2	785	42	2020	8770	6740	240	12.2	1.67		1.94
27-Jun-01	Philip	8.07	28200	5370	213	3200	311	4719	2100	1490	12	2870	390	< 30	3580	2970	138	24.5	2.64	19	3.31
04-Dec-01	Philip	7.67	1931	297	35.4	96.1	7.3	524	82	66.9	3.5	262	72	7	119	74.1	133	6.29	0.08	3.5	1.3
05-Jun-02	Philip	7.93	365	99	9.01	12	134	121	8.11	0.75	1.4	311	21.8	3	37.4	26.1	36.3	2.98	0.02	1.7	0.372

Surface Water ORGANIC ANALYSIS (ATG MISA Groups 19 and 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	SW 1	SW 2	SW 3	EPTS-01
	18-Apr-13	18-Apr-13	18-Apr-13	18-Apr-13
MISA Group 19				
Acenaphthene:	< 0.2	< 10	< 0.2	< 0.2
5-Nitroacenaphthene:				
Acenaphthylene:	< 0.2	< 10	< 0.2	< 0.2
Anthracene:	< 0.2	< 10	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 10	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 10	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 10	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 10	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 10	< 0.2	< 0.2
Biphenyl:	< 0.5	< 30	< 0.5	< 0.5
Camphene:				
1-Chloronaphthalene:	< 1	< 50	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 30	< 0.5	< 0.5
Chrysene:	< 0.2	< 10	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 10	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 10	< 0.2	< 0.2
Fluorene:	< 0.2	< 10	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 10	< 0.2	< 0.2
Indole:				
1-Methylnaphthalene:	< 0.2	< 10	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 10	< 0.2	< 0.2
Naphthalene:	< 0.2	< 10	< 0.2	< 0.2
Perylene:	< 0.2	< 10	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 10	< 0.2	< 0.2
Pyrene:	< 0.2	< 10	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 30	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 100	< 2	< 2
Di-N-butylPhthalate:	< 2	< 100	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 40	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.5	< 30	< 0.5	< 0.5
4-Chlorophenyl Phenyl Ethe	< 0.3	< 20	< 0.3	< 0.3
bis(2-chloroisopropyl)Ether:	< 0.5	< 30	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 30	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 20	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 30	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 30	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 30	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 50	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 30	< 0.5	< 0.5
MISA Group 20				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 20	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 30	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 30	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 30	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 30	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 30	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 30	< 0.5	< 0.5
2,4-Dinitrophenol:	< 6	< 300	< 6	< 6
2,4-Dimethylphenol:	< 0.5	< 30	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 20	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 30	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 20	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 30	< 0.5	< 0.5
4-Nitrophenol:	< 6	< 300	< 6	< 6
o-Cresol:	< 0.5	< 30	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 30	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 50	< 1	< 1
Phenol:	< 0.5	< 30	< 0.5	< 0.5

Surface Water ORGANIC ANALYSIS (ATG MISA Groups 19 and 20) - Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	EPTS-01 21-Jun-13	TP1 18-Apr-13	TP1-Out 18-Apr-13
MISA Group 19			
Acenaphthene:	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1		
Acenaphthylene:	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5
Camphene:	< 1		
1-Chloronaphthalene:	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2
Indole:	< 1		
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl Ethe	< 0.3	< 0.5	< 0.5
4-Chlorophenyl Phenyl Ethe	< 0.5	< 0.3	< 0.3
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5
MISA Group 20			
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 6	< 6
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:			
2-Chlorophenol:	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1	< 6	< 6
o-Cresol:	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5

Surface Water ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 -Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	SW 1 18-Apr-13	SW 2 18-Apr-13	SW 3 18-Apr-13	EPTS-01 18-Apr-13
MISA Group 16				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.5	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.25	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.5	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.5	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.25	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.25	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.5	< 30	< 0.5	< 0.5
1,2-Dibromoethane:*	< 0.2	< 0.5	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.5	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.25	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.5	< 30	< 0.5	< 0.5
1,4-Dichlorobenzene:	< 0.5	< 30	< 0.5	< 0.5
Bromodichloromethane:	< 0.1	< 0.25	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.5	< 0.2	< 0.2
Bromomethane:	< 0.5	< 1.3	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.25	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.25	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.25	< 0.1	0.14
Chloromethane:				
Cis-1,2-Dichloroethylene:	< 0.1	< 0.25	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.5	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.5	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 1.3	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.25	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.25	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.5	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.25	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.5	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.5	< 0.2	< 0.2
MISA Group 17				
Benzene:	< 0.1	< 0.25	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.25	< 0.1	< 0.1
Styrene:	< 0.2	< 0.5	< 0.2	< 0.2
Toluene:	< 0.2	< 0.5	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.25	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.25	< 0.1	< 0.1
MISA Group 18				
Acrolein:	< 10	< 25	< 10	< 10
Acrylonitrile:	< 5	< 13	< 5	< 5

Surface Water ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 -Guelph WRIC/Waste Transfer Station - 2013

AECOM

Parameter	EPTS-01 21-Jun-13	TP1 18-Apr-13	TP1-Out 18-Apr-13
MISA Group 16			
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.5	< 0.5
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.5	< 0.5
1,4-Dichlorobenzene:	< 0.2	< 0.5	< 0.5
Bromodichloromethane:	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1
Chloroform:	0.79	< 0.1	< 0.1
Chloromethane:	< 0.5		
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2
MISA Group 17			
Benzene:	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1
MISA Group 18			
Acrolein:	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5

Appendix D

2013 Laboratory Reports

Your P.O. #: 720.8121.3516
Your Project #: Wet/Dry - Surface Water
Site Location: 110 DUNLOP DR
Your C.O.C. #: 38153401, 381534-01-01

Attention: Amy Spence
City of Guelph
Soild Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2013/02/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B315492
Received: 2013/01/31, 16:00

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	7	N/A	2013/02/04	CAM SOP-00448	SM 2320B
Biochemical Oxygen Demand (BOD)	7	N/A	2013/02/06	CAM SOP-00427	APHA 5210B
Chloride by Automated Colourimetry	7	N/A	2013/02/04	CAM SOP-00463	EPA 325.2
Chemical Oxygen Demand	7	N/A	2013/02/05	CAM SOP-00416	APHA 5220D
Conductivity	7	N/A	2013/02/04	CAM SOP-00448	SM 2510
Total Metals Analysis by ICPMS	7	N/A	2013/02/07	CAM SOP-00447	EPA 6020
Total Ammonia-N	7	N/A	2013/02/04	CAM SOP-00441	US GS I-2522-90
pH	7	N/A	2013/02/04	CAM SOP-00448	SM 4500H+ B
Phenols (4AAP)	3	N/A	2013/02/04	CAM SOP-00444	MOE ROPHEN-E3179
Phenols (4AAP)	4	N/A	2013/02/05	CAM SOP-00444	MOE ROPHEN-E3179
Sulphate by Automated Colourimetry	7	N/A	2013/02/04	CAM SOP-00464	EPA 375.4
Total Kjeldahl Nitrogen in Water	7	2013/02/05	2013/02/06	CAM SOP-00454	EPA 351.2 Rev 2
Total Phosphorus (Colourimetric)	7	2013/02/06	2013/02/07	CAM SOP-00407	SM 4500 P,B,F
Low Level Total Suspended Solids	6	N/A	2013/02/04	CAM SOP-00428	SM 2540D
Low Level Total Suspended Solids	1	N/A	2013/02/05	CAM SOP-00428	SM 2540D

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

Encryption Key

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

Preeti Gururajan,
Email: PGururajan@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

Success Through Science®

Maxxam Job #: B315492
Report Date: 2013/02/08

City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: 110 DUNLOP DR
Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		QK5863			QK5864		QK5865		
Sampling Date		2013/01/30			2013/01/30		2013/01/30		
COC Number		381534-01-01			381534-01-01		381534-01-01		
	Units	**P1SW 3**	**RDL**	**QC Batch**	**P1SW 2**	**RDL**	**P2SW 2**	**RDL**	**QC Batch**
Inorganics									
Total Ammonia-N	mg/L	0.22	0.050	3112610	0.17	0.050	0.19	0.050	3112610
Total BOD	mg/L	6.0	2.0	3111470	3.0	2.0	ND	2.0	3111470
Total Chemical Oxygen Demand (COD)	mg/L	77	4.0	3112637	29	4.0	41	4.0	3112637
Conductivity	umho/cm	240	1.0	3112695	450	1.0	350	1.0	3112695
Total Kjeldahl Nitrogen (TKN)	mg/L	2.3	0.10	3115115	1.4	0.10	1.3	0.10	3115115
pH	pH	7.43		3112696	6.89		6.92		3112696
Phenols-4AAP	mg/L	ND	0.0010	3111956	ND	0.0010	ND	0.0010	3113440
Total Phosphorus	mg/L	0.34	0.040	3115920	0.15	0.020	0.18	0.040	3115920
Total Suspended Solids	mg/L	97	3	3112703	14	1	50	1	3112703
Dissolved Sulphate (SO4)	mg/L	9	1	3112668	8	1	13	1	3112668
Alkalinity (Total as CaCO3)	mg/L	27	1.0	3112694	35	1.0	29	1.0	3112694
Dissolved Chloride (Cl)	mg/L	46	1	3112667	99	1	74	1	3112667

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam

Maxxam Job #: B315492
Report Date: 2013/02/08

City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: 110 DUNLOP DR
Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		QK5866			QK5867		
Sampling Date		2013/01/30			2013/01/30		
COC Number		381534-01-01			381534-01-01		
	Units	**P2SW 1**	**RDL**	**QC Batch**	**TP1-OUT**	**RDL**	**QC Batch**
Inorganics							
Total Ammonia-N	mg/L	0.23	0.050	3112610	0.13	0.050	3112610
Total BOD	mg/L	3.0	2.0	3111470	7.0	2.0	3111470
Total Chemical Oxygen Demand (COD)	mg/L	25	4.0	3112637	57	4.0	3112637
Conductivity	umho/cm	990	1.0	3112695	1600	1.0	3112695
Total Kjeldahl Nitrogen (TKN)	mg/L	1.4	0.10	3115115	1.8	0.10	3115115
pH	pH	6.70		3112696	7.05		3112696
Phenols-4AAP	mg/L	ND	0.0010	3113440	ND	0.0010	3111956
Total Phosphorus	mg/L	0.20	0.020	3115920	0.28	0.040	3115920
Total Suspended Solids	mg/L	7	1	3112703	58	2	3112703
Dissolved Sulphate (SO4)	mg/L	12	1	3112668	17	1	3112668
Alkalinity (Total as CaCO3)	mg/L	23	1.0	3112694	61	1.0	3112694
Dissolved Chloride (Cl)	mg/L	230	3	3112667	400	5	3112667

ND = Not detected
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QC Batch = Quality Control Batch

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Maxxam Job #: B315492
Report Date: 2013/02/08

City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: 110 DUNLOP DR
Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		QK5868			QK5869		
Sampling Date		2013/01/30			2013/01/30		
COC Number		381534-01-01			381534-01-01		
	Units	**TP-IN**	**RDL**	**QC Batch**	**EPTS01**	**RDL**	**QC Batch**
Inorganics							
Total Ammonia-N	mg/L	0.25	0.050	3112610	ND	0.050	3112610
Total BOD	mg/L	7.0	2.0	3111470	ND	2.0	3111470
Total Chemical Oxygen Demand (COD)	mg/L	46	4.0	3112637	9.1	4.0	3112637
Conductivity	umho/cm	1200	1.0	3112695	620	1.0	3112695
Total Kjeldahl Nitrogen (TKN)	mg/L	1.4	0.10	3115115	0.54	0.10	3115115
pH	pH	6.98		3112696	7.91		3112696
Phenols-4AAP	mg/L	ND	0.0010	3111956	ND	0.0010	3113440
Total Phosphorus	mg/L	0.27	0.040	3115920	ND	0.020	3115920
Total Suspended Solids	mg/L	35	1	3112704	2	1	3112703
Dissolved Sulphate (SO4)	mg/L	14	1	3112668	16	1	3112668
Alkalinity (Total as CaCO3)	mg/L	49	1.0	3112694	220	1.0	3112694
Dissolved Chloride (Cl)	mg/L	270	4	3112667	44	1	3112667

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B315492
Report Date: 2013/02/08

City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: 110 DUNLOP DR
Your P.O. #: 720.8121.3516

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		QK5863	QK5864	QK5865	QK5866	QK5867	QK5868		
Sampling Date		2013/01/30	2013/01/30	2013/01/30	2013/01/30	2013/01/30	2013/01/30		
COC Number		381534-01-01	381534-01-01	381534-01-01	381534-01-01	381534-01-01	381534-01-01		
	Units	**P1SW 3**	**P1SW 2**	**P2SW 2**	**P2SW 1**	**TP1-OUT**	**TP-IN**	**RDL**	**QC Batch**
Metals									
Total Boron (B)	mg/L	ND	ND	ND	ND	0.013	0.011	0.010	3116124
Total Calcium (Ca)	mg/L	16	15	18	9.4	34	18	0.20	3116124
Total Iron (Fe)	mg/L	2.1	0.45	1.9	0.23	1.7	1.4	0.10	3116124
Total Magnesium (Mg)	mg/L	3.8	2.9	4.6	1.9	4.8	2.7	0.050	3116124
Total Potassium (K)	mg/L	1.1	2.3	0.71	3.8	2.6	1.7	0.20	3116124
Total Sodium (Na)	mg/L	39	67	60	150	300	220	0.10	3116124
Total Zinc (Zn)	mg/L	0.12	0.047	0.14	0.023	0.11	0.093	0.0050	3116124

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		QK5869		
Sampling Date		2013/01/30		
COC Number		381534-01-01		
	Units	**EPTS01**	**RDL**	**QC Batch**
Metals				
Total Boron (B)	mg/L	0.012	0.010	3116124
Total Calcium (Ca)	mg/L	76	0.20	3116124
Total Iron (Fe)	mg/L	ND	0.10	3116124
Total Magnesium (Mg)	mg/L	20	0.050	3116124
Total Potassium (K)	mg/L	1.4	0.20	3116124
Total Sodium (Na)	mg/L	32	0.10	3116124
Total Zinc (Zn)	mg/L	0.20	0.0050	3116124

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B315492
Report Date: 2013/02/08

City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: 110 DUNLOP DR
Your P.O. #: 720.8121.3516

GENERAL COMMENTS

Results relate only to the items tested.

City of Guelph
Attention: Amy Spence
Client Project #: Wet/Dry - Surface Water
P.O. #: 720.8121.3516
Site Location: 110 DUNLOP DR

Quality Assurance Report

Maxxam Job Number: MB315492

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3111470 FZH	QC Standard	Total BOD	2013/02/06		97	%	85 - 115
	Method Blank	Total BOD	2013/02/06	ND, RDL=2.0		mg/L	
	RPD	Total BOD	2013/02/06	NC		%	25
3111956 SP1	Matrix Spike						
	[QK5868-06]	Phenols-4AAP	2013/02/04		98	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/02/04		99	%	85 - 115
	Method Blank	Phenols-4AAP	2013/02/04	ND, RDL=0.0010		mg/L	
	RPD [QK5868-06]	Phenols-4AAP	2013/02/04	NC		%	25
3112610 BMO	Matrix Spike						
	[QK5866-04]	Total Ammonia-N	2013/02/04		98	%	80 - 120
	Spiked Blank	Total Ammonia-N	2013/02/04		99	%	85 - 115
	Method Blank	Total Ammonia-N	2013/02/04	ND, RDL=0.050		mg/L	
	RPD [QK5866-04]	Total Ammonia-N	2013/02/04	NC		%	20
3112637 L_A	Matrix Spike	Total Chemical Oxygen Demand (COD)	2013/02/05		NC	%	75 - 125
	Spiked Blank	Total Chemical Oxygen Demand (COD)	2013/02/05		102	%	75 - 125
	Method Blank	Total Chemical Oxygen Demand (COD)	2013/02/05	ND, RDL=4.0		mg/L	
	RPD	Total Chemical Oxygen Demand (COD)	2013/02/05	0.03		%	25
3112667 ADB	Matrix Spike						
	[QK5868-01]	Dissolved Chloride (Cl)	2013/02/04		NC	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2013/02/04		104	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2013/02/04	ND, RDL=1		mg/L	
	RPD [QK5868-01]	Dissolved Chloride (Cl)	2013/02/04	2.0		%	20
3112668 ADB	Matrix Spike						
	[QK5868-01]	Dissolved Sulphate (SO4)	2013/02/04		NC	%	75 - 125
	Spiked Blank	Dissolved Sulphate (SO4)	2013/02/04		99	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2013/02/04	ND, RDL=1		mg/L	
	RPD [QK5868-01]	Dissolved Sulphate (SO4)	2013/02/04	0.1		%	20
3112694 SAU	QC Standard	Alkalinity (Total as CaCO3)	2013/02/04		97	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/02/04	ND, RDL=1.0		mg/L	
	RPD [QK5866-01]	Alkalinity (Total as CaCO3)	2013/02/04	1.8		%	25
3112695 SAU	QC Standard	Conductivity	2013/02/04		102	%	85 - 115
	Method Blank	Conductivity	2013/02/04	ND, RDL=1.0		umho/cm	
	RPD [QK5866-01]	Conductivity	2013/02/04	0		%	25
3112703 GKR	QC Standard	Total Suspended Solids	2013/02/04		100	%	85 - 115
	Method Blank	Total Suspended Solids	2013/02/04	ND, RDL=1		mg/L	
	RPD	Total Suspended Solids	2013/02/04	NC		%	25
3112704 GKR	QC Standard	Total Suspended Solids	2013/02/05		97	%	85 - 115
	Method Blank	Total Suspended Solids	2013/02/05	ND, RDL=1		mg/L	
	RPD	Total Suspended Solids	2013/02/05	3.2		%	25
3113440 SP1	Matrix Spike	Phenols-4AAP	2013/02/05		101	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/02/05		98	%	85 - 115
	Method Blank	Phenols-4AAP	2013/02/05	ND, RDL=0.0010		mg/L	
	RPD	Phenols-4AAP	2013/02/05	NC		%	25
3115115 C_N	Matrix Spike						
	[QK5869-04]	Total Kjeldahl Nitrogen (TKN)	2013/02/06		106	%	80 - 120
	QC Standard	Total Kjeldahl Nitrogen (TKN)	2013/02/06		110	%	80 - 120
	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2013/02/06		101	%	80 - 120
	Method Blank	Total Kjeldahl Nitrogen (TKN)	2013/02/06	ND, RDL=0.10		mg/L	
	RPD [QK5869-04]	Total Kjeldahl Nitrogen (TKN)	2013/02/06	11.2		%	20
3115920 VRO	Matrix Spike						
	[QK5869-04]	Total Phosphorus	2013/02/07		99	%	80 - 120
	QC Standard	Total Phosphorus	2013/02/07		99	%	85 - 115
	Spiked Blank	Total Phosphorus	2013/02/07		98	%	85 - 115
	Method Blank	Total Phosphorus	2013/02/07	ND, RDL=0.020		mg/L	
	RPD [QK5869-04]	Total Phosphorus	2013/02/07	NC		%	20

City of Guelph
Attention: Amy Spence
Client Project #: Wet/Dry - Surface Water
P.O. #: 720.8121.3516
Site Location: 110 DUNLOP DR

Quality Assurance Report (Continued)

Maxxam Job Number: MB315492

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3116124	PBA	Matrix Spike	Total Boron (B)	2013/02/07		103	%	80 - 120
			Total Calcium (Ca)	2013/02/07		NC	%	80 - 120
			Total Iron (Fe)	2013/02/07		102	%	80 - 120
			Total Magnesium (Mg)	2013/02/07		NC	%	80 - 120
			Total Potassium (K)	2013/02/07		NC	%	80 - 120
			Total Sodium (Na)	2013/02/07		NC	%	80 - 120
			Total Zinc (Zn)	2013/02/07		99	%	80 - 120
		Spiked Blank	Total Boron (B)	2013/02/07		104	%	80 - 120
			Total Calcium (Ca)	2013/02/07		105	%	80 - 120
			Total Iron (Fe)	2013/02/07		102	%	80 - 120
			Total Magnesium (Mg)	2013/02/07		103	%	80 - 120
			Total Potassium (K)	2013/02/07		103	%	80 - 120
			Total Sodium (Na)	2013/02/07		105	%	80 - 120
			Total Zinc (Zn)	2013/02/07		101	%	80 - 120
		Method Blank	Total Boron (B)	2013/02/07	ND, RDL=0.010		mg/L	
			Total Calcium (Ca)	2013/02/07	ND, RDL=0.20		mg/L	
			Total Iron (Fe)	2013/02/07	ND, RDL=0.10		mg/L	
			Total Magnesium (Mg)	2013/02/07	ND, RDL=0.050		mg/L	
			Total Potassium (K)	2013/02/07	ND, RDL=0.20		mg/L	
			Total Sodium (Na)	2013/02/07	ND, RDL=0.10		mg/L	
			Total Zinc (Zn)	2013/02/07	ND, RDL=0.0050		mg/L	
		RPD	Total Boron (B)	2013/02/07	2.7		%	20
			Total Calcium (Ca)	2013/02/07	3.8		%	20
			Total Iron (Fe)	2013/02/07	NC		%	20
			Total Magnesium (Mg)	2013/02/07	3.5		%	20
			Total Potassium (K)	2013/02/07	3.0		%	20
			Total Sodium (Na)	2013/02/07	3.5		%	20
			Total Zinc (Zn)	2013/02/07	2.9		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
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 #: B315492

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

Brad Newman, Scientific Specialist

==

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Your P.O. #: 720.8121.3516
Your Project #: Wet/Dry - Surface Water
Site Location: 110 DUNLOP DR
Your C.O.C. #: 38153401, 381534-01-01

Attention: Amy Spence
City of Guelph
Soild Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2013/05/27
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B315492
Received: 2013/01/31, 16:00

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	7	N/A	2013/02/04	CAM SOP-00448	SM 2320B
Biochemical Oxygen Demand (BOD)	7	N/A	2013/02/06	CAM SOP-00427	APHA 5210B
Chloride by Automated Colourimetry	7	N/A	2013/02/04	CAM SOP-00463	EPA 325.2
Chemical Oxygen Demand	7	N/A	2013/02/05	CAM SOP-00416	APHA 5220D
Conductivity	7	N/A	2013/02/04	CAM SOP-00448	SM 2510
Total Metals Analysis by ICPMS	7	N/A	2013/02/07	CAM SOP-00447	EPA 6020
Total Ammonia-N	7	N/A	2013/02/04	CAM SOP-00441	US GS I-2522-90
pH	7	N/A	2013/02/04	CAM SOP-00448	SM 4500H+ B
Phenols (4AAP)	3	N/A	2013/02/04	CAM SOP-00444	MOE ROPHEN-E3179
Phenols (4AAP)	4	N/A	2013/02/05	CAM SOP-00444	MOE ROPHEN-E3179
Sulphate by Automated Colourimetry	7	N/A	2013/02/04	CAM SOP-00464	EPA 375.4
Total Kjeldahl Nitrogen in Water	7	2013/02/05	2013/02/06	CAM SOP-00454	EPA 351.2 Rev 2
Total Phosphorus (Colourimetric)	7	2013/02/06	2013/02/07	CAM SOP-00407	SM 4500 P,B,F
Low Level Total Suspended Solids	6	N/A	2013/02/04	CAM SOP-00428	SM 2540D
Low Level Total Suspended Solids	1	N/A	2013/02/05	CAM SOP-00428	SM 2540D

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

Encryption Key

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

Preeti Gururajan, Project Manager
Email: PGururajan@maxxam.ca
Phone# (905) 817-5734

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Total cover pages: 1

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Maxxam Job #: B315492
Report Date: 2013/05/27

City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: 110 DUNLOP DR
Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		QK5863			QK5864		QK5865		
Sampling Date		2013/01/30			2013/01/30		2013/01/30		
COC Number		381534-01-01			381534-01-01		381534-01-01		
	Units	**P1SW 3**	**RDL**	**QC Batch**	**P1SW 2**	**RDL**	**P2SW 2**	**RDL**	**QC Batch**
Inorganics									
Total Ammonia-N	mg/L	0.22	0.050	3112610	0.17	0.050	0.19	0.050	3112610
Total BOD	mg/L	6.0	2.0	3111470	3.0	2.0	ND	2.0	3111470
Total Chemical Oxygen Demand (COD)	mg/L	77	4.0	3112637	29	4.0	41	4.0	3112637
Conductivity	umho/cm	240	1.0	3112695	450	1.0	350	1.0	3112695
Total Kjeldahl Nitrogen (TKN)	mg/L	2.3	0.10	3115115	1.4	0.10	1.3	0.10	3115115
pH	pH	7.43		3112696	6.89		6.92		3112696
Phenols-4AAP	mg/L	ND	0.0010	3219058	0.0010 (1)	0.0010	ND	0.0010	3219076
Total Phosphorus	mg/L	0.34	0.040	3115920	0.15	0.020	0.18	0.040	3115920
Total Suspended Solids	mg/L	97	3	3112703	14	1	50	1	3112703
Dissolved Sulphate (SO4)	mg/L	9	1	3112668	8	1	13	1	3112668
Alkalinity (Total as CaCO3)	mg/L	27	1.0	3112694	35	1.0	29	1.0	3112694
Dissolved Chloride (Cl)	mg/L	46	1	3112667	99	1	74	1	3112667

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Result revised May 24, 2013

Maxxam

Maxxam Job #: B315492
Report Date: 2013/05/27

City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: 110 DUNLOP DR
Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		QK5866			QK5867		
Sampling Date		2013/01/30			2013/01/30		
COC Number		381534-01-01			381534-01-01		
	Units	**P2SW 1**	**RDL**	**QC Batch**	**TP1-OUT**	**RDL**	**QC Batch**
Inorganics							
Total Ammonia-N	mg/L	0.23	0.050	3112610	0.13	0.050	3112610
Total BOD	mg/L	3.0	2.0	3111470	7.0	2.0	3111470
Total Chemical Oxygen Demand (COD)	mg/L	25	4.0	3112637	57	4.0	3112637
Conductivity	umho/cm	990	1.0	3112695	1600	1.0	3112695
Total Kjeldahl Nitrogen (TKN)	mg/L	1.4	0.10	3115115	1.8	0.10	3115115
pH	pH	6.70		3112696	7.05		3112696
Phenols-4AAP	mg/L	0.0012 (1)	0.0010	3219076	ND	0.0010	3219058
Total Phosphorus	mg/L	0.20	0.020	3115920	0.28	0.040	3115920
Total Suspended Solids	mg/L	7	1	3112703	58	2	3112703
Dissolved Sulphate (SO4)	mg/L	12	1	3112668	17	1	3112668
Alkalinity (Total as CaCO3)	mg/L	23	1.0	3112694	61	1.0	3112694
Dissolved Chloride (Cl)	mg/L	230	3	3112667	400	5	3112667

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Result revised May 24, 2013

Maxxam Job #: B315492
Report Date: 2013/05/27

City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: 110 DUNLOP DR
Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		QK5868			QK5869		
Sampling Date		2013/01/30			2013/01/30		
COC Number		381534-01-01			381534-01-01		
	Units	**TP-IN**	**RDL**	**QC Batch**	**EPTS01**	**RDL**	**QC Batch**
Inorganics							
Total Ammonia-N	mg/L	0.25	0.050	3112610	ND	0.050	3112610
Total BOD	mg/L	7.0	2.0	3111470	ND	2.0	3111470
Total Chemical Oxygen Demand (COD)	mg/L	46	4.0	3112637	9.1	4.0	3112637
Conductivity	umho/cm	1200	1.0	3112695	620	1.0	3112695
Total Kjeldahl Nitrogen (TKN)	mg/L	1.4	0.10	3115115	0.54	0.10	3115115
pH	pH	6.98		3112696	7.91		3112696
Phenols-4AAP	mg/L	ND	0.0010	3219058	ND	0.0010	3219076
Total Phosphorus	mg/L	0.27	0.040	3115920	ND	0.020	3115920
Total Suspended Solids	mg/L	35	1	3112704	2	1	3112703
Dissolved Sulphate (SO4)	mg/L	14	1	3112668	16	1	3112668
Alkalinity (Total as CaCO3)	mg/L	49	1.0	3112694	220	1.0	3112694
Dissolved Chloride (Cl)	mg/L	270	4	3112667	44	1	3112667

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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City of Guelph
Maxxam Job #: B315492
Report Date: 2013/05/27
Client Project #: Wet/Dry - Surface Water
Site Location: 110 DUNLOP DR
Your P.O. #: 720.8121.3516

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		QK5863	QK5864	QK5865	QK5866	QK5867	QK5868		
Sampling Date		2013/01/30	2013/01/30	2013/01/30	2013/01/30	2013/01/30	2013/01/30		
COC Number		381534-01-01	381534-01-01	381534-01-01	381534-01-01	381534-01-01	381534-01-01		
	Units	**P1SW 3**	**P1SW 2**	**P2SW 2**	**P2SW 1**	**TP1-OUT**	**TP-IN**	**RDL**	**QC Batch**
Metals									
Total Boron (B)	mg/L	ND	ND	ND	ND	0.013	0.011	0.010	3116124
Total Calcium (Ca)	mg/L	16	15	18	9.4	34	18	0.20	3116124
Total Iron (Fe)	mg/L	2.1	0.45	1.9	0.23	1.7	1.4	0.10	3116124
Total Magnesium (Mg)	mg/L	3.8	2.9	4.6	1.9	4.8	2.7	0.050	3116124
Total Potassium (K)	mg/L	1.1	2.3	0.71	3.8	2.6	1.7	0.20	3116124
Total Sodium (Na)	mg/L	39	67	60	150	300	220	0.10	3116124
Total Zinc (Zn)	mg/L	0.12	0.047	0.14	0.023	0.11	0.093	0.0050	3116124

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		QK5869		
Sampling Date		2013/01/30		
COC Number		381534-01-01		
	Units	**EPTS01**	**RDL**	**QC Batch**
Metals				
Total Boron (B)	mg/L	0.012	0.010	3116124
Total Calcium (Ca)	mg/L	76	0.20	3116124
Total Iron (Fe)	mg/L	ND	0.10	3116124
Total Magnesium (Mg)	mg/L	20	0.050	3116124
Total Potassium (K)	mg/L	1.4	0.20	3116124
Total Sodium (Na)	mg/L	32	0.10	3116124
Total Zinc (Zn)	mg/L	0.20	0.0050	3116124

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B315492
Report Date: 2013/05/27

City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: 110 DUNLOP DR
Your P.O. #: 720.8121.3516

GENERAL COMMENTS

Revised Report (2013/05/27): Phenol result amended.

Results relate only to the items tested.

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City of Guelph
Attention: Amy Spence
Client Project #: Wet/Dry - Surface Water
P.O. #: 720.8121.3516
Site Location: 110 DUNLOP DR

Quality Assurance Report

Maxxam Job Number: MB315492

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3111470 FZH	QC Standard	Total BOD	2013/02/06		97	%	85 - 115
	Method Blank	Total BOD	2013/02/06	ND, RDL=2.0		mg/L	
	RPD	Total BOD	2013/02/06	NC		%	25
3112610 BMO	Matrix Spike [QK5866-04]	Total Ammonia-N	2013/02/04		98	%	80 - 120
	Spiked Blank	Total Ammonia-N	2013/02/04		99	%	85 - 115
	Method Blank	Total Ammonia-N	2013/02/04	ND, RDL=0.050		mg/L	
	RPD [QK5866-04]	Total Ammonia-N	2013/02/04	NC		%	20
3112637 L_A	Matrix Spike	Total Chemical Oxygen Demand (COD)	2013/02/05		NC	%	75 - 125
	Spiked Blank	Total Chemical Oxygen Demand (COD)	2013/02/05		102	%	75 - 125
	Method Blank	Total Chemical Oxygen Demand (COD)	2013/02/05	ND, RDL=4.0		mg/L	
	RPD	Total Chemical Oxygen Demand (COD)	2013/02/05	0.03		%	25
3112667 ADB	Matrix Spike [QK5868-01]	Dissolved Chloride (Cl)	2013/02/04		NC	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2013/02/04		104	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2013/02/04	ND, RDL=1		mg/L	
	RPD [QK5868-01]	Dissolved Chloride (Cl)	2013/02/04	2.0		%	20
3112668 ADB	Matrix Spike [QK5868-01]	Dissolved Sulphate (SO4)	2013/02/04		NC	%	75 - 125
	Spiked Blank	Dissolved Sulphate (SO4)	2013/02/04		99	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2013/02/04	ND, RDL=1		mg/L	
	RPD [QK5868-01]	Dissolved Sulphate (SO4)	2013/02/04	0.1		%	20
3112694 SAU	QC Standard	Alkalinity (Total as CaCO3)	2013/02/04		97	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/02/04	ND, RDL=1.0		mg/L	
	RPD [QK5866-01]	Alkalinity (Total as CaCO3)	2013/02/04	1.8		%	25
3112695 SAU	QC Standard	Conductivity	2013/02/04		102	%	85 - 115
	Method Blank	Conductivity	2013/02/04	ND, RDL=1.0		umho/cm	
	RPD [QK5866-01]	Conductivity	2013/02/04	0		%	25
3112703 GKR	QC Standard	Total Suspended Solids	2013/02/04		100	%	85 - 115
	Method Blank	Total Suspended Solids	2013/02/04	ND, RDL=1		mg/L	
	RPD	Total Suspended Solids	2013/02/04	NC		%	25
3112704 GKR	QC Standard	Total Suspended Solids	2013/02/05		97	%	85 - 115
	Method Blank	Total Suspended Solids	2013/02/05	ND, RDL=1		mg/L	
	RPD	Total Suspended Solids	2013/02/05	3.2		%	25
3115115 C_N	Matrix Spike [QK5869-04]	Total Kjeldahl Nitrogen (TKN)	2013/02/06		106	%	80 - 120
	QC Standard	Total Kjeldahl Nitrogen (TKN)	2013/02/06		110	%	80 - 120
	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2013/02/06		101	%	80 - 120
	Method Blank	Total Kjeldahl Nitrogen (TKN)	2013/02/06	ND, RDL=0.10		mg/L	
	RPD [QK5869-04]	Total Kjeldahl Nitrogen (TKN)	2013/02/06	11.2		%	20
3115920 VRO	Matrix Spike [QK5869-04]	Total Phosphorus	2013/02/07		99	%	80 - 120
	QC Standard	Total Phosphorus	2013/02/07		99	%	85 - 115
	Spiked Blank	Total Phosphorus	2013/02/07		98	%	85 - 115
	Method Blank	Total Phosphorus	2013/02/07	ND, RDL=0.020		mg/L	
	RPD [QK5869-04]	Total Phosphorus	2013/02/07	NC		%	20
3116124 PBA	Matrix Spike	Total Boron (B)	2013/02/07		103	%	80 - 120
		Total Calcium (Ca)	2013/02/07		NC	%	80 - 120
		Total Iron (Fe)	2013/02/07		102	%	80 - 120
		Total Magnesium (Mg)	2013/02/07		NC	%	80 - 120
		Total Potassium (K)	2013/02/07		NC	%	80 - 120
		Total Sodium (Na)	2013/02/07		NC	%	80 - 120
		Total Zinc (Zn)	2013/02/07		99	%	80 - 120
	Spiked Blank	Total Boron (B)	2013/02/07		104	%	80 - 120
		Total Calcium (Ca)	2013/02/07		105	%	80 - 120

City of Guelph
Attention: Amy Spence
Client Project #: Wet/Dry - Surface Water
P.O. #: 720.8121.3516
Site Location: 110 DUNLOP DR

Quality Assurance Report (Continued)

Maxxam Job Number: MB315492

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3116124 PBA	Spiked Blank	Total Iron (Fe)	2013/02/07		102	%	80 - 120
		Total Magnesium (Mg)	2013/02/07		103	%	80 - 120
		Total Potassium (K)	2013/02/07		103	%	80 - 120
		Total Sodium (Na)	2013/02/07		105	%	80 - 120
		Total Zinc (Zn)	2013/02/07		101	%	80 - 120
	Method Blank	Total Boron (B)	2013/02/07	ND, RDL=0.010		mg/L	
		Total Calcium (Ca)	2013/02/07	ND, RDL=0.20		mg/L	
		Total Iron (Fe)	2013/02/07	ND, RDL=0.10		mg/L	
		Total Magnesium (Mg)	2013/02/07	ND, RDL=0.050		mg/L	
		Total Potassium (K)	2013/02/07	ND, RDL=0.20		mg/L	
		Total Sodium (Na)	2013/02/07	ND, RDL=0.10		mg/L	
		Total Zinc (Zn)	2013/02/07	ND, RDL=0.0050		mg/L	
	RPD	Total Boron (B)	2013/02/07	2.7		%	20
		Total Calcium (Ca)	2013/02/07	3.8		%	20
		Total Iron (Fe)	2013/02/07	NC		%	20
		Total Magnesium (Mg)	2013/02/07	3.5		%	20
		Total Potassium (K)	2013/02/07	3.0		%	20
		Total Sodium (Na)	2013/02/07	3.5		%	20
		Total Zinc (Zn)	2013/02/07	2.9		%	20
3219058 BNE	Matrix Spike [QK5868-06]	Phenols-4AAP	2013/02/04		98	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/02/04		99	%	85 - 115
	Method Blank	Phenols-4AAP	2013/02/04	ND, RDL=0.0010		mg/L	
	RPD [QK5868-06]	Phenols-4AAP		NC		%	25
3219076 BNE	Matrix Spike	Phenols-4AAP	2013/02/05		101	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/02/05		98	%	85 - 115
	Method Blank	Phenols-4AAP	2013/02/05	ND, RDL=0.0010		mg/L	
	RPD	Phenols-4AAP		NC		%	25

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B315492

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

Brad Newman, Scientific Specialist

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

===

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Maxxam

Your Project #: WET/DRY - SURFACE WATER/ORGANI
Site Location: 110 DUNLOP DR.
Your C.O.C. #: 40039601, 400396-01-01

Attention: Amy Spence
City of Guelph
Soild Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2013/04/30

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B359009
Received: 2013/04/19, 17:25

Sample Matrix: Water
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
ABN Compounds in Water by GC/MS	6	2013/04/24	2013/04/27	CAM SOP-00301	EPA 8270 (modified)
Alkalinity	2	N/A	2013/04/23	CAM SOP-00448	SM 2320B
Alkalinity	4	N/A	2013/04/24	CAM SOP-00448	SM 2320B
Biochemical Oxygen Demand (BOD)	6	N/A	2013/04/27	CAM SOP-00427	APHA 5210B
Chloride by Automated Colourimetry	5	N/A	2013/04/23	CAM SOP-00463	EPA 325.2
Chloride by Automated Colourimetry	1	N/A	2013/04/24	CAM SOP-00463	EPA 325.2
Chemical Oxygen Demand	6	N/A	2013/04/24	CAM SOP-00416	APHA 5220D
Conductivity	2	N/A	2013/04/23	CAM SOP-00448	SM 2510
Conductivity	4	N/A	2013/04/24	CAM SOP-00448	SM 2510
Total Metals Analysis by ICPMS	6	N/A	2013/04/29	CAM SOP-00447	EPA 6020
Total Ammonia-N	6	N/A	2013/04/25	CAM SOP-00441	US GS I-2522-90
pH	2	N/A	2013/04/23	CAM SOP-00448	SM 4500H+ B
pH	4	N/A	2013/04/24	CAM SOP-00448	SM 4500H+ B
Phenols (4AAP)	6	N/A	2013/04/29	CAM SOP-00444	MOE ROPHEN-E3179
Sulphate by Automated Colourimetry	5	N/A	2013/04/23	CAM SOP-00464	EPA 375.4
Sulphate by Automated Colourimetry	1	N/A	2013/04/24	CAM SOP-00464	EPA 375.4
Total Kjeldahl Nitrogen in Water	6	2013/04/30	2013/04/30	CAM SOP-00454	EPA 351.2 Rev 2
Total Phosphorus (Colourimetric)	6	2013/04/29	2013/04/30	CAM SOP-00407	SM 4500 P,B,F
Low Level Total Suspended Solids	5	N/A	2013/04/22	CAM SOP-00428	SM 2540D
Low Level Total Suspended Solids	1	N/A	2013/04/24	CAM SOP-00428	SM 2540D
Volatile Organic Compounds in Water	6	N/A	2013/04/26	CAM SOP-00226	EPA 8260 modified
Non-Routine Volatile Organic Compounds	6	N/A	2013/04/29	CAM SOP-00226	EPA 8260 modified

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

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Your Project #: WET/DRY - SURFACE WATER/ORGANI
Site Location: 110 DUNLOP DR.
Your C.O.C. #: 40039601, 400396-01-01

Attention: Amy Spence
City of Guelph
Soild Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2013/04/30

CERTIFICATE OF ANALYSIS

-2-

Encryption Key

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

Preeti Gururajan, Project Manager
Email: PGururajan@maxxam.ca
Phone# (905) 817-5734

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Total cover pages: 2

Maxxam Job #: B359009
Report Date: 2013/04/30

City of Guelph
Client Project #: WET/DRY - SURFACE WATER/ORGANI
Site Location: 110 DUNLOP DR.
Sampler Initials: AMY

RESULTS OF ANALYSES OF WATER

Maxxam ID		RF7820			RF7821		RF7822		
Sampling Date		2013/04/18			2013/04/18		2013/04/18		
COC Number		400396-01-01			400396-01-01		400396-01-01		
	Units	**P1SW2**	**RDL**	**QC Batch**	**P1SW3**	**RDL**	**P2SW1**	**RDL**	**QC Batch**
Inorganics									
Total Ammonia-N	mg/L	0.59	0.050	3190230	0.051	0.050	0.12	0.050	3190230
Total BOD	mg/L	11	2.0	3188413	3.0	2.0	ND	2.0	3188413
Total Chemical Oxygen Demand (COD)	mg/L	130	4.0	3190030	24	4.0	37	4.0	3190030
Conductivity	umho/cm	350	1.0	3189425	2400	1.0	1500	1.0	3189586
Total Kjeldahl Nitrogen (TKN)	mg/L	4.0	0.20	3197013	1.0	0.10	0.90	0.10	3197013
pH	pH	7.40		3189424	8.10		7.73		3189585
Phenols-4AAP	mg/L	0.015	0.0010	3195719	ND	0.0010	0.0033	0.0010	3195719
Total Phosphorus	mg/L	0.17	0.020	3195936	ND	0.020	0.021	0.020	3195936
Total Suspended Solids	mg/L	12	1	3190135	7	1	2	1	3188919
Dissolved Sulphate (SO4)	mg/L	17	1	3189382	27	1	8	1	3189382
Alkalinity (Total as CaCO3)	mg/L	69	1.0	3189421	320	1.0	74	1.0	3189582
Dissolved Chloride (Cl)	mg/L	45	1	3189380	520	6	390	5	3189380

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam

City of Guelph
Maxxam Job #: B359009
Report Date: 2013/04/30
Client Project #: WET/DRY - SURFACE WATER/ORGANI
Site Location: 110 DUNLOP DR.
Sampler Initials: AMY

RESULTS OF ANALYSES OF WATER

Maxxam ID		RF7823		RF7824			RF7825		
Sampling Date		2013/04/18		2013/04/18			2013/04/18		
COC Number		400396-01-01		400396-01-01			400396-01-01		
	Units	**EPTS01**	**RDL**	**TP1-OUT**	**RDL**	**QC Batch**	**TP1-IN**	**RDL**	**QC Batch**
Inorganics									
Total Ammonia-N	mg/L	ND	0.050	0.055	0.050	3190230	0.056	0.050	3190230
Total BOD	mg/L	ND	2.0	3.0	2.0	3188413	3.0	2.0	3188413
Total Chemical Oxygen Demand (COD)	mg/L	18	4.0	31	4.0	3190030	45	4.0	3190030
Conductivity	umho/cm	650	1.0	1100	1.0	3189586	1500	1.0	3190115
Total Kjeldahl Nitrogen (TKN)	mg/L	0.64	0.10	0.87	0.10	3197013	1.4	0.10	3197013
pH	pH	8.10		7.85		3189585	8.18		3190114
Phenols-4AAP	mg/L	ND	0.0010	0.0023	0.0010	3195719	0.0023	0.0010	3195719
Total Phosphorus	mg/L	ND	0.020	0.056	0.020	3195936	0.061	0.020	3195936
Total Suspended Solids	mg/L	ND	1	5	1	3188919	10	1	3188919
Dissolved Sulphate (SO4)	mg/L	13	1	16	1	3189382	12	1	3190727
Alkalinity (Total as CaCO3)	mg/L	210	1.0	94	1.0	3189582	190	1.0	3190086
Dissolved Chloride (Cl)	mg/L	64	1	240	3	3189380	330	5	3190726

ND = Not detected
RDL = Reportable Detection Limit
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City of Guelph
Maxxam Job #: B359009
Report Date: 2013/04/30
Client Project #: WET/DRY - SURFACE WATER/ORGANI
Site Location: 110 DUNLOP DR.
Sampler Initials: AMY

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		RF7820	RF7821	RF7822	RF7823	RF7824	RF7825		
Sampling Date		2013/04/18	2013/04/18	2013/04/18	2013/04/18	2013/04/18	2013/04/18		
COC Number		400396-01-01	400396-01-01	400396-01-01	400396-01-01	400396-01-01	400396-01-01		
	Units	**P1SW2**	**P1SW3**	**P2SW1**	**EPTS01**	**TP1-OUT**	**TP1-IN**	**RDL**	**QC Batch**
Metals									
Total Boron (B)	mg/L	0.027	0.025	ND	0.011	0.024	0.021	0.010	3195007
Total Calcium (Ca)	mg/L	32	140	51	73	36	79	0.20	3195007
Total Iron (Fe)	mg/L	2.0	0.11	ND	ND	0.49	0.96	0.10	3195007
Total Magnesium (Mg)	mg/L	8.4	34	7.6	19	4.5	14	0.050	3195007
Total Potassium (K)	mg/L	11	7.6	5.3	1.2	1.8	2.7	0.20	3195007
Total Sodium (Na)	mg/L	43	370	280	50	190	240	0.10	3195007
Total Zinc (Zn)	mg/L	0.12	0.025	0.023	0.072	0.015	0.017	0.0050	3195007

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Success Through Science®

Maxxam Job #: B359009
Report Date: 2013/04/30

City of Guelph
Client Project #: WET/DRY - SURFACE WATER/ORGANI
Site Location: 110 DUNLOP DR.
Sampler Initials: AMY

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		RF7820		RF7821	RF7822	RF7823	RF7824		
Sampling Date		2013/04/18		2013/04/18	2013/04/18	2013/04/18	2013/04/18		
COC Number		400396-01-01		400396-01-01	400396-01-01	400396-01-01	400396-01-01		
	Units	**P1SW2**	**RDL**	**P1SW3**	**P2SW1**	**EPTS01**	**TP1-OUT**	**RDL**	**QC Batch**
Semivolatile Organics									
Acenaphthene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Acenaphthylene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Anthracene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Benzo(a)anthracene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Benzo(a)pyrene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Benzo(b/j)fluoranthene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Benzo(g,h,i)perylene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Benzo(k)fluoranthene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
1-Chloronaphthalene	ug/L	ND	50	ND	ND	ND	ND	1	3190829
2-Chloronaphthalene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Chrysene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Dibenz(a,h)anthracene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Fluoranthene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Fluorene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Indeno(1,2,3-cd)pyrene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
1-Methylnaphthalene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
2-Methylnaphthalene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Naphthalene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Perylene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Phenanthrene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
Pyrene	ug/L	ND	10	ND	ND	ND	ND	0.2	3190829
1,2-Dichlorobenzene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
1,3-Dichlorobenzene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
1,4-Dichlorobenzene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Hexachlorobenzene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Pentachlorobenzene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
1,2,3,5-Tetrachlorobenzene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
1,2,4,5-Tetrachlorobenzene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
1,2,3-Trichlorobenzene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
1,2,4-Trichlorobenzene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
1,3,5-Trichlorobenzene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
2-Chlorophenol	ug/L	ND	20	ND	ND	ND	ND	0.3	3190829

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		RF7820		RF7821	RF7822	RF7823	RF7824		
Sampling Date		2013/04/18		2013/04/18	2013/04/18	2013/04/18	2013/04/18		
COC Number		400396-01-01		400396-01-01	400396-01-01	400396-01-01	400396-01-01		
	Units	**P1SW2**	**RDL**	**P1SW3**	**P2SW1**	**EPTS01**	**TP1-OUT**	**RDL**	**QC Batch**
4-Chloro-3-Methylphenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
m/p-Cresol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
o-Cresol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
1,2,3,4-Tetrachlorobenzene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
2,3-Dichlorophenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
2,4-Dichlorophenol	ug/L	ND	20	ND	ND	ND	ND	0.3	3190829
2,5-Dichlorophenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
2,6-Dichlorophenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
3,4-Dichlorophenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
3,5-Dichlorophenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
2,4-Dimethylphenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
2,4-Dinitrophenol	ug/L	ND	300	ND	ND	ND	ND	6	3190829
4,6-Dinitro-2-methylphenol	ug/L	ND	100	ND	ND	ND	ND	2	3190829
2-Nitrophenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
4-Nitrophenol	ug/L	ND	300	ND	ND	ND	ND	6	3190829
Pentachlorophenol	ug/L	ND	50	ND	ND	ND	ND	1	3190829
Phenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
2,3,4,5-Tetrachlorophenol	ug/L	ND	20	ND	ND	ND	ND	0.4	3190829
2,3,4,6-Tetrachlorophenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
2,3,5,6-Tetrachlorophenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
2,3,4-Trichlorophenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
2,3,5-Trichlorophenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
2,3,6-Trichlorophenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
2,4,5-Trichlorophenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
2,4,6-Trichlorophenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
3,4,5-Trichlorophenol	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Benzyl butyl phthalate	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Biphenyl	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Bis(2-chloroethyl)ether	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Bis(2-chloroethoxy)methane	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Bis(2-chloroisopropyl)ether	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Bis(2-ethylhexyl)phthalate	ug/L	ND	100	ND	ND	ND	ND	2	3190829
4-Bromophenyl phenyl ether	ug/L	ND	20	ND	ND	ND	ND	0.3	3190829

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam

Maxxam Job #: B359009
Report Date: 2013/04/30

City of Guelph
Client Project #: WET/DRY - SURFACE WATER/ORGANI
Site Location: 110 DUNLOP DR.
Sampler Initials: AMY

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		RF7820		RF7821	RF7822	RF7823	RF7824		
Sampling Date		2013/04/18		2013/04/18	2013/04/18	2013/04/18	2013/04/18		
COC Number		400396-01-01		400396-01-01	400396-01-01	400396-01-01	400396-01-01		
	Units	**P1SW2**	**RDL**	**P1SW3**	**P2SW1**	**EPTS01**	**TP1-OUT**	**RDL**	**QC Batch**
p-Chloroaniline	ug/L	ND	50	ND	ND	ND	ND	1	3190829
4-Chlorophenyl phenyl ether	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Di-N-butyl phthalate	ug/L	ND	100	ND	ND	ND	ND	2	3190829
Di-N-octyl phthalate	ug/L	ND	40	ND	ND	ND	ND	0.8	3190829
2,4-Dinitrotoluene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
3,3'-Dichlorobenzidine	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Diethyl phthalate	ug/L	ND	50	ND	ND	ND	ND	1	3190829
2,6-Dinitrotoluene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Dimethyl phthalate	ug/L	ND	50	ND	ND	ND	ND	1	3190829
Diphenyl Ether	ug/L	ND	20	ND	ND	ND	ND	0.3	3190829
Hexachlorobutadiene	ug/L	ND	20	ND	ND	ND	ND	0.4	3190829
Hexachlorocyclopentadiene	ug/L	ND	100	ND	ND	ND	ND	2	3190829
Hexachloroethane	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Isophorone	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Nitrobenzene	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Nitrosodiphenylamine/Diphenylamine	ug/L	ND	50	ND	ND	ND	ND	1	3190829
N-Nitroso-di-n-propylamine	ug/L	ND	30	ND	ND	ND	ND	0.5	3190829
Surrogate Recovery (%)									
2,4,6-Tribromophenol	%	80		65	95	49	72		3190829
2-Fluorobiphenyl	%	75		71	61	64	73		3190829
2-Fluorophenol	%	25		27	30	17	27		3190829
D14-Terphenyl	%	80		80	77	78	77		3190829
D5-Nitrobenzene	%	45		59	45	50	55		3190829
D5-Phenol	%	0.00 (1)		23	22	17	23		3190829

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Surrogate recovery was below the lower control limit due to dilution. This may represent a low bias in some results.

Maxxam Job #: B359009
Report Date: 2013/04/30

City of Guelph
Client Project #: WET/DRY - SURFACE WATER/ORGANI
Site Location: 110 DUNLOP DR.
Sampler Initials: AMY

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		RF7825		
Sampling Date		2013/04/18		
COC Number		400396-01-01		
	Units	**TP1-IN**	**RDL**	**QC Batch**
Semivolatile Organics				
Acenaphthene	ug/L	ND	0.2	3190829
Acenaphthylene	ug/L	ND	0.2	3190829
Anthracene	ug/L	ND	0.2	3190829
Benzo(a)anthracene	ug/L	ND	0.2	3190829
Benzo(a)pyrene	ug/L	ND	0.2	3190829
Benzo(b/j)fluoranthene	ug/L	ND	0.2	3190829
Benzo(g,h,i)perylene	ug/L	ND	0.2	3190829
Benzo(k)fluoranthene	ug/L	ND	0.2	3190829
1-Chloronaphthalene	ug/L	ND	1	3190829
2-Chloronaphthalene	ug/L	ND	0.5	3190829
Chrysene	ug/L	ND	0.2	3190829
Dibenz(a,h)anthracene	ug/L	ND	0.2	3190829
Fluoranthene	ug/L	ND	0.2	3190829
Fluorene	ug/L	ND	0.2	3190829
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.2	3190829
1-Methylnaphthalene	ug/L	ND	0.2	3190829
2-Methylnaphthalene	ug/L	ND	0.2	3190829
Naphthalene	ug/L	ND	0.2	3190829
Perylene	ug/L	ND	0.2	3190829
Phenanthrene	ug/L	ND	0.2	3190829
Pyrene	ug/L	ND	0.2	3190829
1,2-Dichlorobenzene	ug/L	ND	0.5	3190829
1,3-Dichlorobenzene	ug/L	ND	0.5	3190829
1,4-Dichlorobenzene	ug/L	ND	0.5	3190829
Hexachlorobenzene	ug/L	ND	0.5	3190829
Pentachlorobenzene	ug/L	ND	0.5	3190829
1,2,3,5-Tetrachlorobenzene	ug/L	ND	0.5	3190829
1,2,4,5-Tetrachlorobenzene	ug/L	ND	0.5	3190829
1,2,3-Trichlorobenzene	ug/L	ND	0.5	3190829
1,2,4-Trichlorobenzene	ug/L	ND	0.5	3190829
1,3,5-Trichlorobenzene	ug/L	ND	0.5	3190829
2-Chlorophenol	ug/L	ND	0.3	3190829

ND = Not detected
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Maxxam Job #: B359009
Report Date: 2013/04/30

City of Guelph
Client Project #: WET/DRY - SURFACE WATER/ORGANI
Site Location: 110 DUNLOP DR.
Sampler Initials: AMY

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		RF7825		
Sampling Date		2013/04/18		
COC Number		400396-01-01		
	Units	**TP1-IN**	**RDL**	**QC Batch**
4-Chloro-3-Methylphenol	ug/L	ND	0.5	3190829
m/p-Cresol	ug/L	ND	0.5	3190829
o-Cresol	ug/L	ND	0.5	3190829
1,2,3,4-Tetrachlorobenzene	ug/L	ND	0.5	3190829
2,3-Dichlorophenol	ug/L	ND	0.5	3190829
2,4-Dichlorophenol	ug/L	ND	0.3	3190829
2,5-Dichlorophenol	ug/L	ND	0.5	3190829
2,6-Dichlorophenol	ug/L	ND	0.5	3190829
3,4-Dichlorophenol	ug/L	ND	0.5	3190829
3,5-Dichlorophenol	ug/L	ND	0.5	3190829
2,4-Dimethylphenol	ug/L	ND	0.5	3190829
2,4-Dinitrophenol	ug/L	ND	6	3190829
4,6-Dinitro-2-methylphenol	ug/L	ND	2	3190829
2-Nitrophenol	ug/L	ND	0.5	3190829
4-Nitrophenol	ug/L	ND	6	3190829
Pentachlorophenol	ug/L	ND	1	3190829
Phenol	ug/L	ND	0.5	3190829
2,3,4,5-Tetrachlorophenol	ug/L	ND	0.4	3190829
2,3,4,6-Tetrachlorophenol	ug/L	ND	0.5	3190829
2,3,5,6-Tetrachlorophenol	ug/L	ND	0.5	3190829
2,3,4-Trichlorophenol	ug/L	ND	0.5	3190829
2,3,5-Trichlorophenol	ug/L	ND	0.5	3190829
2,3,6-Trichlorophenol	ug/L	ND	0.5	3190829
2,4,5-Trichlorophenol	ug/L	ND	0.5	3190829
2,4,6-Trichlorophenol	ug/L	ND	0.5	3190829
3,4,5-Trichlorophenol	ug/L	ND	0.5	3190829
Benzyl butyl phthalate	ug/L	ND	0.5	3190829
Biphenyl	ug/L	ND	0.5	3190829
Bis(2-chloroethyl)ether	ug/L	ND	0.5	3190829
Bis(2-chloroethoxy)methane	ug/L	ND	0.5	3190829
Bis(2-chloroisopropyl)ether	ug/L	ND	0.5	3190829
Bis(2-ethylhexyl)phthalate	ug/L	ND	2	3190829
4-Bromophenyl phenyl ether	ug/L	ND	0.3	3190829

ND = Not detected
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QC Batch = Quality Control Batch

Maxxam Job #: B359009
Report Date: 2013/04/30

City of Guelph
Client Project #: WET/DRY - SURFACE WATER/ORGANI
Site Location: 110 DUNLOP DR.
Sampler Initials: AMY

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		RF7825		
Sampling Date		2013/04/18		
COC Number		400396-01-01		
	Units	**TP1-IN**	**RDL**	**QC Batch**
p-Chloroaniline	ug/L	ND	1	3190829
4-Chlorophenyl phenyl ether	ug/L	ND	0.5	3190829
Di-N-butyl phthalate	ug/L	ND	2	3190829
Di-N-octyl phthalate	ug/L	ND	0.8	3190829
2,4-Dinitrotoluene	ug/L	ND	0.5	3190829
3,3'-Dichlorobenzidine	ug/L	ND	0.5	3190829
Diethyl phthalate	ug/L	ND	1	3190829
2,6-Dinitrotoluene	ug/L	ND	0.5	3190829
Dimethyl phthalate	ug/L	ND	1	3190829
Diphenyl Ether	ug/L	ND	0.3	3190829
Hexachlorobutadiene	ug/L	ND	0.4	3190829
Hexachlorocyclopentadiene	ug/L	ND	2	3190829
Hexachloroethane	ug/L	ND	0.5	3190829
Isophorone	ug/L	ND	0.5	3190829
Nitrobenzene	ug/L	ND	0.5	3190829
Nitrosodiphenylamine/Diphenylamine	ug/L	ND	1	3190829
N-Nitroso-di-n-propylamine	ug/L	ND	0.5	3190829
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	102		3190829
2-Fluorobiphenyl	%	65		3190829
2-Fluorophenol	%	34		3190829
D14-Terphenyl	%	79		3190829
D5-Nitrobenzene	%	51		3190829
D5-Phenol	%	25		3190829

ND = Not detected
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Maxxam Job #: B359009
Report Date: 2013/04/30

City of Guelph
Client Project #: WET/DRY - SURFACE WATER/ORGANI
Site Location: 110 DUNLOP DR.
Sampler Initials: AMY

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		RF7820		RF7821	RF7822	RF7823	RF7824		
Sampling Date		2013/04/18		2013/04/18	2013/04/18	2013/04/18	2013/04/18		
COC Number		400396-01-01		400396-01-01	400396-01-01	400396-01-01	400396-01-01		
	Units	**P1SW2**	**RDL**	**P1SW3**	**P2SW1**	**EPTS01**	**TP1-OUT**	**RDL**	**QC Batch**
Volatile Organics									
Acetone (2-Propanone)	ug/L	ND	25	ND	ND	ND	ND	10	3192378
Benzene	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
Bromodichloromethane	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
Acrolein	ug/L	ND	25	ND	ND	ND	ND	10	3192682
Bromoform	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
Bromomethane	ug/L	ND	1.3	ND	ND	ND	ND	0.50	3192378
Carbon Tetrachloride	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
Chlorobenzene	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
Chloroform	ug/L	ND	0.25	ND	ND	0.14	ND	0.10	3192378
Dibromochloromethane	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
Acrylonitrile	ug/L	ND	13	ND	ND	ND	ND	5.0	3192682
1,2-Dichlorobenzene	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
1,3-Dichlorobenzene	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
1,4-Dichlorobenzene	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
Dichlorodifluoromethane (FREON 12)	ug/L	ND	1.3	ND	ND	ND	ND	0.50	3192378
1,1-Dichloroethane	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
1,2-Dichloroethane	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
1,1-Dichloroethylene	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
cis-1,2-Dichloroethylene	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
trans-1,2-Dichloroethylene	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
1,2-Dichloropropane	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
cis-1,3-Dichloropropene	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
trans-1,3-Dichloropropene	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
Ethylbenzene	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
Ethylene Dibromide	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
Hexane	ug/L	ND	1.3	ND	ND	ND	ND	0.50	3192378
Methylene Chloride(Dichloromethane)	ug/L	ND	1.3	ND	ND	ND	ND	0.50	3192378
Methyl Isobutyl Ketone	ug/L	ND	13	ND	ND	ND	ND	5.0	3192378
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	13	ND	ND	ND	ND	5.0	3192378
Methyl t-butyl ether (MTBE)	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
Styrene	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
1,1,1,2-Tetrachloroethane	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B359009
Report Date: 2013/04/30

City of Guelph
Client Project #: WET/DRY - SURFACE WATER/ORGANI
Site Location: 110 DUNLOP DR.
Sampler Initials: AMY

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		RF7820		RF7821	RF7822	RF7823	RF7824		
Sampling Date		2013/04/18		2013/04/18	2013/04/18	2013/04/18	2013/04/18		
COC Number		400396-01-01		400396-01-01	400396-01-01	400396-01-01	400396-01-01		
	Units	**P1SW2**	**RDL**	**P1SW3**	**P2SW1**	**EPTS01**	**TP1-OUT**	**RDL**	**QC Batch**
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
Tetrachloroethylene	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
Toluene	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
1,1,1-Trichloroethane	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
1,1,2-Trichloroethane	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
Trichloroethylene	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
Vinyl Chloride	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
p+m-Xylene	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
o-Xylene	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
Xylene (Total)	ug/L	ND	0.25	ND	ND	ND	ND	0.10	3192378
Trichlorofluoromethane (FREON 11)	ug/L	ND	0.50	ND	ND	ND	ND	0.20	3192378
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	96		97	98	95	95		3192378
D4-1,2-Dichloroethane	%	99		99	98	97	98		3192378
D8-Toluene	%	96		96	97	96	95		3192378

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Maxxam Job #: B359009
Report Date: 2013/04/30

City of Guelph
Client Project #: WET/DRY - SURFACE WATER/ORGANI
Site Location: 110 DUNLOP DR.
Sampler Initials: AMY

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		RF7825		
Sampling Date		2013/04/18		
COC Number		400396-01-01		
	Units	**TP1-IN**	**RDL**	**QC Batch**
Volatile Organics				
Acetone (2-Propanone)	ug/L	ND	10	3192378
Benzene	ug/L	ND	0.10	3192378
Bromodichloromethane	ug/L	ND	0.10	3192378
Acrolein	ug/L	ND	10	3192682
Bromoform	ug/L	ND	0.20	3192378
Bromomethane	ug/L	ND	0.50	3192378
Carbon Tetrachloride	ug/L	ND	0.10	3192378
Chlorobenzene	ug/L	ND	0.10	3192378
Chloroform	ug/L	ND	0.10	3192378
Dibromochloromethane	ug/L	ND	0.20	3192378
Acrylonitrile	ug/L	ND	5.0	3192682
1,2-Dichlorobenzene	ug/L	ND	0.20	3192378
1,3-Dichlorobenzene	ug/L	ND	0.20	3192378
1,4-Dichlorobenzene	ug/L	ND	0.20	3192378
Dichlorodifluoromethane (FREON 12)	ug/L	ND	0.50	3192378
1,1-Dichloroethane	ug/L	ND	0.10	3192378
1,2-Dichloroethane	ug/L	ND	0.20	3192378
1,1-Dichloroethylene	ug/L	ND	0.10	3192378
cis-1,2-Dichloroethylene	ug/L	ND	0.10	3192378
trans-1,2-Dichloroethylene	ug/L	ND	0.10	3192378
1,2-Dichloropropane	ug/L	ND	0.10	3192378
cis-1,3-Dichloropropene	ug/L	ND	0.20	3192378
trans-1,3-Dichloropropene	ug/L	ND	0.20	3192378
Ethylbenzene	ug/L	ND	0.10	3192378
Ethylene Dibromide	ug/L	ND	0.20	3192378
Hexane	ug/L	ND	0.50	3192378
Methylene Chloride(Dichloromethane)	ug/L	ND	0.50	3192378
Methyl Isobutyl Ketone	ug/L	ND	5.0	3192378
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	5.0	3192378
Methyl t-butyl ether (MTBE)	ug/L	ND	0.20	3192378
Styrene	ug/L	ND	0.20	3192378
1,1,1,2-Tetrachloroethane	ug/L	ND	0.20	3192378

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Maxxam Job #: B359009
Report Date: 2013/04/30

City of Guelph
Client Project #: WET/DRY - SURFACE WATER/ORGANI
Site Location: 110 DUNLOP DR.
Sampler Initials: AMY

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		RF7825		
Sampling Date		2013/04/18		
COC Number		400396-01-01		
	Units	**TP1-IN**	**RDL**	**QC Batch**
1,1,2,2-Tetrachloroethane	ug/L	ND	0.20	3192378
Tetrachloroethylene	ug/L	ND	0.10	3192378
Toluene	ug/L	ND	0.20	3192378
1,1,1-Trichloroethane	ug/L	ND	0.10	3192378
1,1,2-Trichloroethane	ug/L	ND	0.20	3192378
Trichloroethylene	ug/L	ND	0.10	3192378
Vinyl Chloride	ug/L	ND	0.20	3192378
p+m-Xylene	ug/L	ND	0.10	3192378
o-Xylene	ug/L	ND	0.10	3192378
Xylene (Total)	ug/L	ND	0.10	3192378
Trichlorofluoromethane (FREON 11)	ug/L	ND	0.20	3192378
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	97		3192378
D4-1,2-Dichloroethane	%	99		3192378
D8-Toluene	%	97		3192378

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

ABN Analysis: Detection limits were raised for 2,4-dinitrophenol and 4-nitrophenol due to matrix interference.

Sample RF7820-01: VOC Analysis: Due to the foaming, sample required dilution. Detection limits were adjusted accordingly.

ABN analysis: Due to the nature of the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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City of Guelph
Attention: Amy Spence
Client Project #: WET/DRY - SURFACE WATER/ORGANI
P.O. #:
Site Location: 110 DUNLOP DR.

Quality Assurance Report

Maxxam Job Number: MB359009

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3188413 JKU	QC Standard	Total BOD	2013/04/27		109	%	85 - 115
	Method Blank	Total BOD	2013/04/27	ND, RDL=2.0		mg/L	
	RPD	Total BOD	2013/04/27	NC		%	25
3188919 RAY	QC Standard	Total Suspended Solids	2013/04/22		98	%	85 - 115
	Method Blank	Total Suspended Solids	2013/04/22	ND, RDL=1		mg/L	
	RPD	Total Suspended Solids	2013/04/22	9.7		%	25
3189380 ADB	Matrix Spike	Dissolved Chloride (Cl)	2013/04/23		NC	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2013/04/23		102	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2013/04/23	ND, RDL=1		mg/L	
	RPD	Dissolved Chloride (Cl)	2013/04/23	0.5		%	20
3189382 ADB	Matrix Spike	Dissolved Sulphate (SO4)	2013/04/23		NC	%	75 - 125
	Spiked Blank	Dissolved Sulphate (SO4)	2013/04/23		98	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2013/04/23	ND, RDL=1		mg/L	
	RPD	Dissolved Sulphate (SO4)	2013/04/23	0.3		%	20
3189421 SAU	QC Standard	Alkalinity (Total as CaCO3)	2013/04/23		93	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/04/23	ND, RDL=1.0		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2013/04/23	0.2		%	25
3189425 SAU	QC Standard	Conductivity	2013/04/23		101	%	85 - 115
	Method Blank	Conductivity	2013/04/23	ND, RDL=1.0		umho/cm	
	RPD	Conductivity	2013/04/23	0		%	25
3189582 SAU	QC Standard	Alkalinity (Total as CaCO3)	2013/04/23		95	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/04/23	ND, RDL=1.0		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2013/04/24	1.7		%	25
3189586 SAU	QC Standard	Conductivity	2013/04/23		101	%	85 - 115
	Method Blank	Conductivity	2013/04/23	ND, RDL=1.0		umho/cm	
	RPD	Conductivity	2013/04/24	0.2		%	25
3190030 L_A	Matrix Spike	Total Chemical Oxygen Demand (COD)	2013/04/24		99	%	75 - 125
	Spiked Blank	Total Chemical Oxygen Demand (COD)	2013/04/24		101	%	75 - 125
	Method Blank	Total Chemical Oxygen Demand (COD)	2013/04/24	ND, RDL=4.0		mg/L	
	RPD	Total Chemical Oxygen Demand (COD)	2013/04/24	9.3		%	25
3190086 SAU	QC Standard	Alkalinity (Total as CaCO3)	2013/04/23		95	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/04/23	1.8, RDL=1.0		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2013/04/23	1.2		%	25
3190115 SAU	QC Standard	Conductivity	2013/04/23		100	%	85 - 115
	Method Blank	Conductivity	2013/04/23	ND, RDL=1.0		umho/cm	
	RPD	Conductivity	2013/04/23	0		%	25
3190135 SUP	QC Standard	Total Suspended Solids	2013/04/24		98	%	85 - 115
	Method Blank	Total Suspended Solids	2013/04/24	ND, RDL=1		mg/L	
	RPD	Total Suspended Solids	2013/04/24	5.1		%	25
3190230 COP	Matrix Spike	Total Ammonia-N	2013/04/25		NC	%	80 - 120
	Spiked Blank	Total Ammonia-N	2013/04/25		96	%	85 - 115
	Method Blank	Total Ammonia-N	2013/04/25	ND, RDL=0.050		mg/L	
	RPD	Total Ammonia-N	2013/04/25	2.2		%	20
3190726 ADB	Matrix Spike	Dissolved Chloride (Cl)	2013/04/24		NC	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2013/04/24		102	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2013/04/24	ND, RDL=1		mg/L	
	RPD	Dissolved Chloride (Cl)	2013/04/24	3.0		%	20
3190727 ADB	Matrix Spike	Dissolved Sulphate (SO4)	2013/04/24		NC	%	75 - 125
	Spiked Blank	Dissolved Sulphate (SO4)	2013/04/24		101	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2013/04/24	ND, RDL=1		mg/L	
	RPD	Dissolved Sulphate (SO4)	2013/04/24	1.2		%	20
3190829 ANL	Matrix Spike	2,4,6-Tribromophenol	2013/04/25		100	%	10 - 130
		2-Fluorobiphenyl	2013/04/25		63	%	30 - 130
		2-Fluorophenol	2013/04/25		46	%	10 - 130
		D14-Terphenyl	2013/04/25		90	%	30 - 130

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City of Guelph
Attention: Amy Spence
Client Project #: WET/DRY - SURFACE WATER/ORGANI
P.O. #:
Site Location: 110 DUNLOP DR.

Quality Assurance Report (Continued)

Maxxam Job Number: MB359009

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3190829	ANL	Matrix Spike	D5-Nitrobenzene	2013/04/25		76	%	30 - 130
			D5-Phenol	2013/04/25		33	%	10 - 130
			Acenaphthene	2013/04/25		72	%	30 - 130
			Acenaphthylene	2013/04/25		74	%	30 - 130
			Anthracene	2013/04/25		88	%	30 - 130
			Benzo(a)anthracene	2013/04/25		93	%	30 - 130
			Benzo(a)pyrene	2013/04/25		97	%	30 - 130
			Benzo(b/j)fluoranthene	2013/04/25		93	%	30 - 130
			Benzo(g,h,i)perylene	2013/04/25		83	%	30 - 130
			Benzo(k)fluoranthene	2013/04/25		95	%	30 - 130
			1-Chloronaphthalene	2013/04/25		58	%	30 - 130
			2-Chloronaphthalene	2013/04/25		70	%	30 - 130
			Chrysene	2013/04/25		98	%	30 - 130
			Dibenz(a,h)anthracene	2013/04/25		85	%	30 - 130
			Fluoranthene	2013/04/25		90	%	30 - 130
			Fluorene	2013/04/25		79	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2013/04/25		86	%	30 - 130
			1-Methylnaphthalene	2013/04/25		64	%	30 - 130
			2-Methylnaphthalene	2013/04/25		58	%	30 - 130
			Naphthalene	2013/04/25		57	%	30 - 130
			Perylene	2013/04/25		95	%	30 - 130
			Phenanthrene	2013/04/25		88	%	30 - 130
			Pyrene	2013/04/25		94	%	30 - 130
			1,2-Dichlorobenzene	2013/04/25		47	%	30 - 130
			1,3-Dichlorobenzene	2013/04/25		41	%	30 - 130
			1,4-Dichlorobenzene	2013/04/25		42	%	30 - 130
			Hexachlorobenzene	2013/04/25		80	%	30 - 130
			Pentachlorobenzene	2013/04/25		58	%	30 - 130
			1,2,3,5-Tetrachlorobenzene	2013/04/25		49	%	30 - 130
			1,2,4,5-Tetrachlorobenzene	2013/04/25		46	%	30 - 130
			1,2,3-Trichlorobenzene	2013/04/25		49	%	30 - 130
			1,2,4-Trichlorobenzene	2013/04/25		44	%	30 - 130
			1,3,5-Trichlorobenzene	2013/04/25		52	%	30 - 130
			2-Chlorophenol	2013/04/25		72	%	10 - 130
			4-Chloro-3-Methylphenol	2013/04/25		82	%	10 - 130
			m/p-Cresol	2013/04/25		69	%	10 - 130
			o-Cresol	2013/04/25		66	%	10 - 130
			1,2,3,4-Tetrachlorobenzene	2013/04/25		52	%	30 - 130
			2,3-Dichlorophenol	2013/04/25		83	%	10 - 130
			2,4-Dichlorophenol	2013/04/25		80	%	10 - 130
			2,5-Dichlorophenol	2013/04/25		83	%	10 - 130
			2,6-Dichlorophenol	2013/04/25		72	%	10 - 130
			3,4-Dichlorophenol	2013/04/25		102	%	10 - 130
			3,5-Dichlorophenol	2013/04/25		101	%	10 - 130
			2,4-Dimethylphenol	2013/04/25		60	%	10 - 130
			2,4-Dinitrophenol	2013/04/25		163 (1)	%	10 - 130
			4,6-Dinitro-2-methylphenol	2013/04/25		154 (2)	%	10 - 130
			2-Nitrophenol	2013/04/25		84	%	10 - 130
			4-Nitrophenol	2013/04/25		44	%	10 - 130
			Pentachlorophenol	2013/04/25		84	%	10 - 130
			Phenol	2013/04/25		36	%	10 - 130
			2,3,4,5-Tetrachlorophenol	2013/04/25		96	%	10 - 130
			2,3,4,6-Tetrachlorophenol	2013/04/25		95	%	10 - 130
			2,3,5,6-Tetrachlorophenol	2013/04/25		94	%	10 - 130
			2,3,4-Trichlorophenol	2013/04/25		89	%	10 - 130

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P.O. #:
Site Location: 110 DUNLOP DR.

Quality Assurance Report (Continued)

Maxxam Job Number: MB359009

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3190829	ANL	Matrix Spike	2,3,5-Trichlorophenol	2013/04/25		110	%	10 - 130
			2,3,6-Trichlorophenol	2013/04/25		95	%	10 - 130
			2,4,5-Trichlorophenol	2013/04/25		91	%	10 - 130
			2,4,6-Trichlorophenol	2013/04/25		89	%	10 - 130
			3,4,5-Trichlorophenol	2013/04/25		104	%	10 - 130
			Benzyl butyl phthalate	2013/04/25		100	%	30 - 130
			Biphenyl	2013/04/25		61	%	30 - 130
			Bis(2-chloroethyl)ether	2013/04/25		71	%	30 - 130
			Bis(2-chloroethoxy)methane	2013/04/25		68	%	30 - 130
			Bis(2-chloroisopropyl)ether	2013/04/25		65	%	30 - 130
			Bis(2-ethylhexyl)phthalate	2013/04/25		101	%	30 - 130
			4-Bromophenyl phenyl ether	2013/04/25		80	%	30 - 130
			p-Chloroaniline	2013/04/25		68	%	30 - 130
			4-Chlorophenyl phenyl ether	2013/04/25		71	%	30 - 130
			Di-N-butyl phthalate	2013/04/25		100	%	30 - 130
			Di-N-octyl phthalate	2013/04/25		111	%	30 - 130
			2,4-Dinitrotoluene	2013/04/25		110	%	30 - 130
			3,3'-Dichlorobenzidine	2013/04/25		59	%	30 - 130
			Diethyl phthalate	2013/04/25		96	%	30 - 130
			2,6-Dinitrotoluene	2013/04/25		100	%	30 - 130
			Dimethyl phthalate	2013/04/25		94	%	30 - 130
			Diphenyl Ether	2013/04/25		78	%	30 - 130
			Hexachlorobutadiene	2013/04/25		33	%	30 - 130
			Hexachlorocyclopentadiene	2013/04/25		1.4 (3)	%	30 - 130
			Hexachloroethane	2013/04/25		37	%	30 - 130
			Isophorone	2013/04/25		67	%	30 - 130
			Nitrobenzene	2013/04/25		68	%	30 - 130
			Nitrosodiphenylamine/Diphenylamine	2013/04/25		102	%	30 - 130
			N-Nitroso-di-n-propylamine	2013/04/25		70	%	30 - 130
		Spiked Blank	2,4,6-Tribromophenol	2013/04/25		89	%	10 - 130
			2-Fluorobiphenyl	2013/04/25		61	%	30 - 130
			2-Fluorophenol	2013/04/25		38	%	10 - 130
			D14-Terphenyl	2013/04/25		90	%	30 - 130
			D5-Nitrobenzene	2013/04/25		68	%	30 - 130
			D5-Phenol	2013/04/25		27	%	10 - 130
			Acenaphthene	2013/04/25		69	%	30 - 130
			Acenaphthylene	2013/04/25		70	%	30 - 130
			Anthracene	2013/04/25		84	%	30 - 130
			Benzo(a)anthracene	2013/04/25		90	%	30 - 130
			Benzo(a)pyrene	2013/04/25		93	%	30 - 130
			Benzo(b/j)fluoranthene	2013/04/25		92	%	30 - 130
			Benzo(g,h,i)perylene	2013/04/25		95	%	30 - 130
			Benzo(k)fluoranthene	2013/04/25		95	%	30 - 130
			1-Chloronaphthalene	2013/04/25		54	%	30 - 130
			2-Chloronaphthalene	2013/04/25		68	%	30 - 130
			Chrysene	2013/04/25		92	%	30 - 130
			Dibenz(a,h)anthracene	2013/04/25		93	%	30 - 130
			Fluoranthene	2013/04/25		94	%	30 - 130
			Fluorene	2013/04/25		77	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2013/04/25		93	%	30 - 130
			1-Methylnaphthalene	2013/04/25		60	%	30 - 130
			2-Methylnaphthalene	2013/04/25		56	%	30 - 130
			Naphthalene	2013/04/25		55	%	30 - 130
			Perylene	2013/04/25		92	%	30 - 130
			Phenanthrene	2013/04/25		84	%	30 - 130

City of Guelph
Attention: Amy Spence
Client Project #: WET/DRY - SURFACE WATER/ORGANI
P.O. #:
Site Location: 110 DUNLOP DR.

Quality Assurance Report (Continued)

Maxxam Job Number: MB359009

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3190829 ANL	Spiked Blank	Pyrene	2013/04/25		90	%	30 - 130
		1,2-Dichlorobenzene	2013/04/25		42	%	30 - 130
		1,3-Dichlorobenzene	2013/04/25		36	%	30 - 130
		1,4-Dichlorobenzene	2013/04/25		37	%	30 - 130
		Hexachlorobenzene	2013/04/25		82	%	30 - 130
		Pentachlorobenzene	2013/04/25		51	%	30 - 130
		1,2,3,5-Tetrachlorobenzene	2013/04/25		46	%	30 - 130
		1,2,4,5-Tetrachlorobenzene	2013/04/25		39	%	30 - 130
		1,2,3-Trichlorobenzene	2013/04/25		45	%	30 - 130
		1,2,4-Trichlorobenzene	2013/04/25		39	%	30 - 130
		1,3,5-Trichlorobenzene	2013/04/25		53	%	30 - 130
		2-Chlorophenol	2013/04/25		62	%	10 - 130
		4-Chloro-3-Methylphenol	2013/04/25		69	%	10 - 130
		m/p-Cresol	2013/04/25		56	%	10 - 130
		o-Cresol	2013/04/25		52	%	10 - 130
		1,2,3,4-Tetrachlorobenzene	2013/04/25		47	%	30 - 130
		2,3-Dichlorophenol	2013/04/25		72	%	10 - 130
		2,4-Dichlorophenol	2013/04/25		68	%	10 - 130
		2,5-Dichlorophenol	2013/04/25		73	%	10 - 130
		2,6-Dichlorophenol	2013/04/25		63	%	10 - 130
		3,4-Dichlorophenol	2013/04/25		91	%	10 - 130
		3,5-Dichlorophenol	2013/04/25		90	%	10 - 130
		2,4-Dimethylphenol	2013/04/25		26	%	10 - 130
		2,4-Dinitrophenol	2013/04/25		75	%	10 - 130
		4,6-Dinitro-2-methylphenol	2013/04/25		87	%	10 - 130
		2-Nitrophenol	2013/04/25		66	%	10 - 130
		4-Nitrophenol	2013/04/25		36	%	10 - 130
		Pentachlorophenol	2013/04/25		57	%	10 - 130
		Phenol	2013/04/25		29	%	10 - 130
		2,3,4,5-Tetrachlorophenol	2013/04/25		84	%	10 - 130
		2,3,4,6-Tetrachlorophenol	2013/04/25		94	%	10 - 130
		2,3,5,6-Tetrachlorophenol	2013/04/25		62	%	10 - 130
		2,3,4-Trichlorophenol	2013/04/25		80	%	10 - 130
		2,3,5-Trichlorophenol	2013/04/25		96	%	10 - 130
		2,3,6-Trichlorophenol	2013/04/25		85	%	10 - 130
		2,4,5-Trichlorophenol	2013/04/25		81	%	10 - 130
		2,4,6-Trichlorophenol	2013/04/25		79	%	10 - 130
		3,4,5-Trichlorophenol	2013/04/25		91	%	10 - 130
		Benzyl butyl phthalate	2013/04/25		98	%	30 - 130
		Biphenyl	2013/04/25		59	%	30 - 130
		Bis(2-chloroethyl)ether	2013/04/25		66	%	30 - 130
		Bis(2-chloroethoxy)methane	2013/04/25		63	%	30 - 130
		Bis(2-chloroisopropyl)ether	2013/04/25		60	%	30 - 130
		Bis(2-ethylhexyl)phthalate	2013/04/25		99	%	30 - 130
		4-Bromophenyl phenyl ether	2013/04/25		79	%	30 - 130
		p-Chloroaniline	2013/04/25		73	%	30 - 130
		4-Chlorophenyl phenyl ether	2013/04/25		70	%	30 - 130
		Di-N-butyl phthalate	2013/04/25		101	%	30 - 130
		Di-N-octyl phthalate	2013/04/25		100	%	30 - 130
		2,4-Dinitrotoluene	2013/04/25		98	%	30 - 130
		3,3'-Dichlorobenzidine	2013/04/25		82	%	30 - 130
		Diethyl phthalate	2013/04/25		95	%	30 - 130
		2,6-Dinitrotoluene	2013/04/25		87	%	30 - 130
		Dimethyl phthalate	2013/04/25		92	%	30 - 130
		Diphenyl Ether	2013/04/25		72	%	30 - 130

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City of Guelph
Attention: Amy Spence
Client Project #: WET/DRY - SURFACE WATER/ORGANI
P.O. #:
Site Location: 110 DUNLOP DR.

Quality Assurance Report (Continued)

Maxxam Job Number: MB359009

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3190829 ANL	Spiked Blank	Hexachlorobutadiene	2013/04/25		37	%	30 - 130
		Hexachlorocyclopentadiene	2013/04/25		34	%	30 - 130
		Hexachloroethane	2013/04/25		38	%	30 - 130
		Isophorone	2013/04/25		62	%	30 - 130
		Nitrobenzene	2013/04/25		62	%	30 - 130
		Nitrosodiphenylamine/Diphenylamine	2013/04/25		98	%	30 - 130
		N-Nitroso-di-n-propylamine	2013/04/25		66	%	30 - 130
	Method Blank	2,4,6-Tribromophenol	2013/04/25		59	%	10 - 130
		2-Fluorobiphenyl	2013/04/25		79	%	30 - 130
		2-Fluorophenol	2013/04/25		38	%	10 - 130
		D14-Terphenyl	2013/04/25		84	%	30 - 130
		D5-Nitrobenzene	2013/04/25		75	%	30 - 130
		D5-Phenol	2013/04/25		26	%	10 - 130
		Acenaphthene	2013/04/25	ND, RDL=0.2		ug/L	
		Acenaphthylene	2013/04/25	ND, RDL=0.2		ug/L	
		Anthracene	2013/04/25	ND, RDL=0.2		ug/L	
		Benzo(a)anthracene	2013/04/25	ND, RDL=0.2		ug/L	
		Benzo(a)pyrene	2013/04/25	ND, RDL=0.2		ug/L	
		Benzo(b/j)fluoranthene	2013/04/25	ND, RDL=0.2		ug/L	
		Benzo(g,h,i)perylene	2013/04/25	ND, RDL=0.2		ug/L	
		Benzo(k)fluoranthene	2013/04/25	ND, RDL=0.2		ug/L	
		1-Chloronaphthalene	2013/04/25	ND, RDL=1		ug/L	
		2-Chloronaphthalene	2013/04/25	ND, RDL=0.5		ug/L	
		Chrysene	2013/04/25	ND, RDL=0.2		ug/L	
		Dibenz(a,h)anthracene	2013/04/25	ND, RDL=0.2		ug/L	
		Fluoranthene	2013/04/25	ND, RDL=0.2		ug/L	
		Fluorene	2013/04/25	ND, RDL=0.2		ug/L	
		Indeno(1,2,3-cd)pyrene	2013/04/25	ND, RDL=0.2		ug/L	
		1-Methylnaphthalene	2013/04/25	ND, RDL=0.2		ug/L	
		2-Methylnaphthalene	2013/04/25	ND, RDL=0.2		ug/L	
		Naphthalene	2013/04/25	ND, RDL=0.2		ug/L	
		Perylene	2013/04/25	ND, RDL=0.2		ug/L	
		Phenanthrene	2013/04/25	ND, RDL=0.2		ug/L	
		Pyrene	2013/04/25	ND, RDL=0.2		ug/L	
		1,2-Dichlorobenzene	2013/04/25	ND, RDL=0.5		ug/L	
		1,3-Dichlorobenzene	2013/04/25	ND, RDL=0.5		ug/L	
		1,4-Dichlorobenzene	2013/04/25	ND, RDL=0.5		ug/L	
		Hexachlorobenzene	2013/04/25	ND, RDL=0.5		ug/L	
		Pentachlorobenzene	2013/04/25	ND, RDL=0.5		ug/L	
		1,2,3,5-Tetrachlorobenzene	2013/04/25	ND, RDL=0.5		ug/L	
		1,2,4,5-Tetrachlorobenzene	2013/04/25	ND, RDL=0.5		ug/L	
		1,2,3-Trichlorobenzene	2013/04/25	ND, RDL=0.5		ug/L	
		1,2,4-Trichlorobenzene	2013/04/25	ND, RDL=0.5		ug/L	
		1,3,5-Trichlorobenzene	2013/04/25	ND, RDL=0.5		ug/L	
		2-Chlorophenol	2013/04/25	ND, RDL=0.3		ug/L	
		4-Chloro-3-Methylphenol	2013/04/25	ND, RDL=0.5		ug/L	
		m/p-Cresol	2013/04/25	ND, RDL=0.5		ug/L	
		o-Cresol	2013/04/25	ND, RDL=0.5		ug/L	
		1,2,3,4-Tetrachlorobenzene	2013/04/25	ND, RDL=0.5		ug/L	
		2,3-Dichlorophenol	2013/04/25	ND, RDL=0.5		ug/L	
		2,4-Dichlorophenol	2013/04/25	ND, RDL=0.3		ug/L	
		2,5-Dichlorophenol	2013/04/25	ND, RDL=0.5		ug/L	
		2,6-Dichlorophenol	2013/04/25	ND, RDL=0.5		ug/L	
		3,4-Dichlorophenol	2013/04/25	ND, RDL=0.5		ug/L	
		3,5-Dichlorophenol	2013/04/25	ND, RDL=0.5		ug/L	

Quality Assurance Report (Continued)

Maxxam Job Number: MB359009

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3190829 ANL	Method Blank	2,4-Dimethylphenol	2013/04/25	ND, RDL=0.5		ug/L	
		2,4-Dinitrophenol	2013/04/25	ND, RDL=6		ug/L	
		4,6-Dinitro-2-methylphenol	2013/04/25	ND, RDL=2		ug/L	
		2-Nitrophenol	2013/04/25	ND, RDL=0.5		ug/L	
		4-Nitrophenol	2013/04/25	ND, RDL=1		ug/L	
		Pentachlorophenol	2013/04/25	ND, RDL=1		ug/L	
		Phenol	2013/04/25	ND, RDL=0.5		ug/L	
		2,3,4,5-Tetrachlorophenol	2013/04/25	ND, RDL=0.4		ug/L	
		2,3,4,6-Tetrachlorophenol	2013/04/25	ND, RDL=0.5		ug/L	
		2,3,5,6-Tetrachlorophenol	2013/04/25	ND, RDL=0.5		ug/L	
		2,3,4-Trichlorophenol	2013/04/25	ND, RDL=0.5		ug/L	
		2,3,5-Trichlorophenol	2013/04/25	ND, RDL=0.5		ug/L	
		2,3,6-Trichlorophenol	2013/04/25	ND, RDL=0.5		ug/L	
		2,4,5-Trichlorophenol	2013/04/25	ND, RDL=0.5		ug/L	
		2,4,6-Trichlorophenol	2013/04/25	ND, RDL=0.5		ug/L	
		3,4,5-Trichlorophenol	2013/04/25	ND, RDL=0.5		ug/L	
		Benzyl butyl phthalate	2013/04/25	ND, RDL=0.5		ug/L	
		Biphenyl	2013/04/25	ND, RDL=0.5		ug/L	
		Bis(2-chloroethyl)ether	2013/04/25	ND, RDL=0.5		ug/L	
		Bis(2-chloroethoxy)methane	2013/04/25	ND, RDL=0.5		ug/L	
		Bis(2-chloroisopropyl)ether	2013/04/25	ND, RDL=0.5		ug/L	
		Bis(2-ethylhexyl)phthalate	2013/04/25	ND, RDL=2		ug/L	
		4-Bromophenyl phenyl ether	2013/04/25	ND, RDL=0.3		ug/L	
		p-Chloroaniline	2013/04/25	ND, RDL=1		ug/L	
		4-Chlorophenyl phenyl ether	2013/04/25	ND, RDL=0.5		ug/L	
		Di-N-butyl phthalate	2013/04/25	ND, RDL=2		ug/L	
		Di-N-octyl phthalate	2013/04/25	ND, RDL=0.8		ug/L	
		2,4-Dinitrotoluene	2013/04/25	ND, RDL=0.5		ug/L	
		3,3'-Dichlorobenzidine	2013/04/25	ND, RDL=0.5		ug/L	
		Diethyl phthalate	2013/04/25	ND, RDL=1		ug/L	
		2,6-Dinitrotoluene	2013/04/25	ND, RDL=0.5		ug/L	
		Dimethyl phthalate	2013/04/25	ND, RDL=1		ug/L	
		Diphenyl Ether	2013/04/25	ND, RDL=0.3		ug/L	
		Hexachlorobutadiene	2013/04/25	ND, RDL=0.4		ug/L	
		Hexachlorocyclopentadiene	2013/04/25	ND, RDL=2		ug/L	
		Hexachloroethane	2013/04/25	ND, RDL=0.5		ug/L	
		Isophorone	2013/04/25	ND, RDL=0.5		ug/L	
		Nitrobenzene	2013/04/25	ND, RDL=0.5		ug/L	
		Nitrosodiphenylamine/Diphenylamine	2013/04/25	ND, RDL=1		ug/L	
		N-Nitroso-di-n-propylamine	2013/04/25	ND, RDL=0.5		ug/L	
	RPD	Acenaphthene	2013/04/25	NC		%	40
		Acenaphthylene	2013/04/25	NC		%	40
		Anthracene	2013/04/25	NC		%	40
		Benzo(a)anthracene	2013/04/25	NC		%	40
		Benzo(a)pyrene	2013/04/25	NC		%	40
		Benzo(b/j)fluoranthene	2013/04/25	NC		%	40
		Benzo(g,h,i)perylene	2013/04/25	NC		%	40
		Benzo(k)fluoranthene	2013/04/25	NC		%	40
		1-Chloronaphthalene	2013/04/25	NC		%	40
		2-Chloronaphthalene	2013/04/25	NC		%	40
		Chrysene	2013/04/25	NC		%	40
		Dibenz(a,h)anthracene	2013/04/25	NC		%	40
		Fluoranthene	2013/04/25	NC		%	40
		Fluorene	2013/04/25	NC		%	40
		Indeno(1,2,3-cd)pyrene	2013/04/25	NC		%	40

City of Guelph
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Quality Assurance Report (Continued)

Maxxam Job Number: MB359009

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3190829	ANL	RPD	1-Methylnaphthalene	2013/04/25	NC		%	40
			2-Methylnaphthalene	2013/04/25	NC		%	40
			Naphthalene	2013/04/25	NC		%	40
			Perylene	2013/04/25	NC		%	40
			Phenanthrene	2013/04/25	NC		%	40
			Pyrene	2013/04/25	NC		%	40
			1,2,4-Trichlorobenzene	2013/04/25	NC		%	40
			2-Chlorophenol	2013/04/25	NC		%	40
			4-Chloro-3-Methylphenol	2013/04/25	NC		%	40
			m/p-Cresol	2013/04/25	NC		%	40
			o-Cresol	2013/04/25	NC		%	40
			2,4-Dichlorophenol	2013/04/25	NC		%	40
			2,6-Dichlorophenol	2013/04/25	NC		%	40
			2,4-Dimethylphenol	2013/04/25	NC		%	40
			2,4-Dinitrophenol	2013/04/25	NC		%	40
			4,6-Dinitro-2-methylphenol	2013/04/25	NC		%	40
			2-Nitrophenol	2013/04/25	NC		%	40
			4-Nitrophenol	2013/04/25	NC		%	40
			Pentachlorophenol	2013/04/25	NC		%	40
			Phenol	2013/04/25	NC		%	40
			2,3,4,5-Tetrachlorophenol	2013/04/25	NC		%	40
			2,3,4,6-Tetrachlorophenol	2013/04/25	NC		%	40
			2,3,5,6-Tetrachlorophenol	2013/04/25	NC		%	40
			2,3,4-Trichlorophenol	2013/04/25	NC		%	40
			2,3,5-Trichlorophenol	2013/04/25	NC		%	40
			2,4,5-Trichlorophenol	2013/04/25	NC		%	40
			2,4,6-Trichlorophenol	2013/04/25	NC		%	40
			Benzyl butyl phthalate	2013/04/25	NC		%	40
			Biphenyl	2013/04/25	NC		%	40
			Bis(2-chloroethyl)ether	2013/04/25	NC		%	40
			Bis(2-chloroethoxy)methane	2013/04/25	NC		%	40
			Bis(2-chloroisopropyl)ether	2013/04/25	NC		%	40
			Bis(2-ethylhexyl)phthalate	2013/04/25	NC		%	40
			4-Bromophenyl phenyl ether	2013/04/25	NC		%	40
			p-Chloroaniline	2013/04/25	NC		%	40
			4-Chlorophenyl phenyl ether	2013/04/25	NC		%	40
			Di-N-butyl phthalate	2013/04/25	NC		%	40
			Di-N-octyl phthalate	2013/04/25	NC		%	40
			2,4-Dinitrotoluene	2013/04/25	NC		%	40
			3,3'-Dichlorobenzidine	2013/04/25	NC		%	40
			Diethyl phthalate	2013/04/25	NC		%	40
			2,6-Dinitrotoluene	2013/04/25	NC		%	40
			Dimethyl phthalate	2013/04/25	NC		%	40
			Diphenyl Ether	2013/04/25	NC		%	40
			Hexachlorobutadiene	2013/04/25	NC		%	40
			Hexachlorocyclopentadiene	2013/04/25	NC		%	40
			Hexachloroethane	2013/04/25	NC		%	40
			Isophorone	2013/04/25	NC		%	40
			Nitrobenzene	2013/04/25	NC		%	40
			Nitrosodiphenylamine/Diphenylamine	2013/04/25	NC		%	40
			N-Nitroso-di-n-propylamine	2013/04/25	NC		%	40
3192378	NR1	Matrix Spike						
		[RF7823-02]	4-Bromofluorobenzene	2013/04/26		102	%	70 - 130
			D4-1,2-Dichloroethane	2013/04/26		102	%	70 - 130
			D8-Toluene	2013/04/26		102	%	70 - 130

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Quality Assurance Report (Continued)

Maxxam Job Number: MB359009

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3192378 NR1	Matrix Spike						
	[RF7823-02]	Acetone (2-Propanone)	2013/04/26		96	%	60 - 140
		Benzene	2013/04/26		99	%	70 - 130
		Bromodichloromethane	2013/04/26		90	%	70 - 130
		Bromoform	2013/04/26		101	%	70 - 130
		Bromomethane	2013/04/26		106	%	60 - 140
		Carbon Tetrachloride	2013/04/26		104	%	70 - 130
		Chlorobenzene	2013/04/26		96	%	70 - 130
		Chloroform	2013/04/26		95	%	70 - 130
		Dibromochloromethane	2013/04/26		95	%	70 - 130
		1,2-Dichlorobenzene	2013/04/26		91	%	70 - 130
		1,3-Dichlorobenzene	2013/04/26		94	%	70 - 130
		1,4-Dichlorobenzene	2013/04/26		98	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2013/04/26		90	%	60 - 140
		1,1-Dichloroethane	2013/04/26		90	%	70 - 130
		1,2-Dichloroethane	2013/04/26		93	%	70 - 130
		1,1-Dichloroethylene	2013/04/26		110	%	70 - 130
		cis-1,2-Dichloroethylene	2013/04/26		107	%	70 - 130
		trans-1,2-Dichloroethylene	2013/04/26		105	%	70 - 130
		1,2-Dichloropropane	2013/04/26		97	%	70 - 130
		cis-1,3-Dichloropropene	2013/04/26		101	%	70 - 130
		trans-1,3-Dichloropropene	2013/04/26		102	%	70 - 130
		Ethylbenzene	2013/04/26		98	%	70 - 130
		Ethylene Dibromide	2013/04/26		98	%	70 - 130
		Hexane	2013/04/26		113	%	70 - 130
		Methylene Chloride(Dichloromethane)	2013/04/26		99	%	70 - 130
		Methyl Isobutyl Ketone	2013/04/26		101	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2013/04/26		99	%	60 - 140
		Methyl t-butyl ether (MTBE)	2013/04/26		100	%	70 - 130
		Styrene	2013/04/26		106	%	70 - 130
		1,1,1,2-Tetrachloroethane	2013/04/26		100	%	70 - 130
		1,1,2,2-Tetrachloroethane	2013/04/26		98	%	70 - 130
		Tetrachloroethylene	2013/04/26		97	%	70 - 130
		Toluene	2013/04/26		94	%	70 - 130
		1,1,1-Trichloroethane	2013/04/26		108	%	70 - 130
		1,1,2-Trichloroethane	2013/04/26		95	%	70 - 130
		Trichloroethylene	2013/04/26		98	%	70 - 130
		Vinyl Chloride	2013/04/26		100	%	70 - 130
		p+m-Xylene	2013/04/26		93	%	70 - 130
		o-Xylene	2013/04/26		100	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2013/04/26		100	%	70 - 130
	Spiked Blank	4-Bromofluorobenzene	2013/04/26		101	%	70 - 130
		D4-1,2-Dichloroethane	2013/04/26		103	%	70 - 130
		D8-Toluene	2013/04/26		101	%	70 - 130
		Acetone (2-Propanone)	2013/04/26		94	%	60 - 140
		Benzene	2013/04/26		99	%	70 - 130
		Bromodichloromethane	2013/04/26		95	%	70 - 130
		Bromoform	2013/04/26		108	%	70 - 130
		Bromomethane	2013/04/26		97	%	60 - 140
		Carbon Tetrachloride	2013/04/26		102	%	70 - 130
		Chlorobenzene	2013/04/26		100	%	70 - 130
		Chloroform	2013/04/26		96	%	70 - 130
		Dibromochloromethane	2013/04/26		100	%	70 - 130
		1,2-Dichlorobenzene	2013/04/26		98	%	70 - 130
		1,3-Dichlorobenzene	2013/04/26		101	%	70 - 130

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City of Guelph
Attention: Amy Spence
Client Project #: WET/DRY - SURFACE WATER/ORGANI
P.O. #:
Site Location: 110 DUNLOP DR.

Quality Assurance Report (Continued)

Maxxam Job Number: MB359009

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3192378 NR1	Spiked Blank	1,4-Dichlorobenzene	2013/04/26		107	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2013/04/26		58 (3)	%	60 - 140
		1,1-Dichloroethane	2013/04/26		87	%	70 - 130
		1,2-Dichloroethane	2013/04/26		94	%	70 - 130
		1,1-Dichloroethylene	2013/04/26		100	%	70 - 130
		cis-1,2-Dichloroethylene	2013/04/26		107	%	70 - 130
		trans-1,2-Dichloroethylene	2013/04/26		102	%	70 - 130
		1,2-Dichloropropane	2013/04/26		100	%	70 - 130
		cis-1,3-Dichloropropene	2013/04/26		106	%	70 - 130
		trans-1,3-Dichloropropene	2013/04/26		107	%	70 - 130
		Ethylbenzene	2013/04/26		101	%	70 - 130
		Ethylene Dibromide	2013/04/26		103	%	70 - 130
		Hexane	2013/04/26		104	%	70 - 130
		Methylene Chloride(Dichloromethane)	2013/04/26		98	%	70 - 130
		Methyl Isobutyl Ketone	2013/04/26		108	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2013/04/26		103	%	60 - 140
		Methyl t-butyl ether (MTBE)	2013/04/26		97	%	70 - 130
		Styrene	2013/04/26		112	%	70 - 130
		1,1,1,2-Tetrachloroethane	2013/04/26		106	%	70 - 130
		1,1,2,2-Tetrachloroethane	2013/04/26		106	%	70 - 130
		Tetrachloroethylene	2013/04/26		97	%	70 - 130
		Toluene	2013/04/26		94	%	70 - 130
		1,1,1-Trichloroethane	2013/04/26		107	%	70 - 130
		1,1,2-Trichloroethane	2013/04/26		100	%	70 - 130
		Trichloroethylene	2013/04/26		99	%	70 - 130
		Vinyl Chloride	2013/04/26		86	%	70 - 130
		p+m-Xylene	2013/04/26		96	%	70 - 130
		o-Xylene	2013/04/26		104	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2013/04/26		93	%	70 - 130
	Method Blank	4-Bromofluorobenzene	2013/04/26		93	%	70 - 130
		D4-1,2-Dichloroethane	2013/04/26		98	%	70 - 130
		D8-Toluene	2013/04/26		95	%	70 - 130
		Acetone (2-Propanone)	2013/04/26	ND, RDL=10		ug/L	
		Benzene	2013/04/26	ND, RDL=0.10		ug/L	
		Bromodichloromethane	2013/04/26	ND, RDL=0.10		ug/L	
		Bromoform	2013/04/26	ND, RDL=0.20		ug/L	
		Bromomethane	2013/04/26	ND, RDL=0.50		ug/L	
		Carbon Tetrachloride	2013/04/26	ND, RDL=0.10		ug/L	
		Chlorobenzene	2013/04/26	ND, RDL=0.10		ug/L	
		Chloroform	2013/04/26	ND, RDL=0.10		ug/L	
		Dibromochloromethane	2013/04/26	ND, RDL=0.20		ug/L	
		1,2-Dichlorobenzene	2013/04/26	ND, RDL=0.20		ug/L	
		1,3-Dichlorobenzene	2013/04/26	ND, RDL=0.20		ug/L	
		1,4-Dichlorobenzene	2013/04/26	ND, RDL=0.20		ug/L	
		Dichlorodifluoromethane (FREON 12)	2013/04/26	ND, RDL=0.50		ug/L	
		1,1-Dichloroethane	2013/04/26	ND, RDL=0.10		ug/L	
		1,2-Dichloroethane	2013/04/26	ND, RDL=0.20		ug/L	
		1,1-Dichloroethylene	2013/04/26	ND, RDL=0.10		ug/L	
		cis-1,2-Dichloroethylene	2013/04/26	ND, RDL=0.10		ug/L	
		trans-1,2-Dichloroethylene	2013/04/26	ND, RDL=0.10		ug/L	
		1,2-Dichloropropane	2013/04/26	ND, RDL=0.10		ug/L	
		cis-1,3-Dichloropropene	2013/04/26	ND, RDL=0.20		ug/L	
		trans-1,3-Dichloropropene	2013/04/26	ND, RDL=0.20		ug/L	
		Ethylbenzene	2013/04/26	ND, RDL=0.10		ug/L	
		Ethylene Dibromide	2013/04/26	ND, RDL=0.20		ug/L	

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City of Guelph
Attention: Amy Spence
Client Project #: WET/DRY - SURFACE WATER/ORGANI
P.O. #:
Site Location: 110 DUNLOP DR.

Quality Assurance Report (Continued)

Maxxam Job Number: MB359009

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3192378 NR1	Method Blank	Hexane	2013/04/26	ND, RDL=0.50		ug/L	
		Methylene Chloride(Dichloromethane)	2013/04/26	ND, RDL=0.50		ug/L	
		Methyl Isobutyl Ketone	2013/04/26	ND, RDL=5.0		ug/L	
		Methyl Ethyl Ketone (2-Butanone)	2013/04/26	ND, RDL=5.0		ug/L	
		Methyl t-butyl ether (MTBE)	2013/04/26	ND, RDL=0.20		ug/L	
		Styrene	2013/04/26	ND, RDL=0.20		ug/L	
		1,1,1,2-Tetrachloroethane	2013/04/26	ND, RDL=0.20		ug/L	
		1,1,2,2-Tetrachloroethane	2013/04/26	ND, RDL=0.20		ug/L	
		Tetrachloroethylene	2013/04/26	ND, RDL=0.10		ug/L	
		Toluene	2013/04/26	ND, RDL=0.20		ug/L	
		1,1,1-Trichloroethane	2013/04/26	ND, RDL=0.10		ug/L	
		1,1,2-Trichloroethane	2013/04/26	ND, RDL=0.20		ug/L	
		Trichloroethylene	2013/04/26	ND, RDL=0.10		ug/L	
		Vinyl Chloride	2013/04/26	ND, RDL=0.20		ug/L	
		p+m-Xylene	2013/04/26	ND, RDL=0.10		ug/L	
		o-Xylene	2013/04/26	ND, RDL=0.10		ug/L	
		Xylene (Total)	2013/04/26	ND, RDL=0.10		ug/L	
		Trichlorofluoromethane (FREON 11)	2013/04/26	ND, RDL=0.20		ug/L	
	RPD [RF7821-02]	Acetone (2-Propanone)	2013/04/26	NC		%	30
		Benzene	2013/04/26	NC		%	30
		Bromodichloromethane	2013/04/26	NC		%	30
		Bromoform	2013/04/26	NC		%	30
		Bromomethane	2013/04/26	NC		%	30
		Carbon Tetrachloride	2013/04/26	NC		%	30
		Chlorobenzene	2013/04/26	NC		%	30
		Chloroform	2013/04/26	NC		%	30
		Dibromochloromethane	2013/04/26	NC		%	30
		1,2-Dichlorobenzene	2013/04/26	NC		%	30
		1,3-Dichlorobenzene	2013/04/26	NC		%	30
		1,4-Dichlorobenzene	2013/04/26	NC		%	30
		Dichlorodifluoromethane (FREON 12)	2013/04/26	NC		%	30
		1,1-Dichloroethane	2013/04/26	NC		%	30
		1,2-Dichloroethane	2013/04/26	NC		%	30
		1,1-Dichloroethylene	2013/04/26	NC		%	30
		cis-1,2-Dichloroethylene	2013/04/26	NC		%	30
		trans-1,2-Dichloroethylene	2013/04/26	NC		%	30
		1,2-Dichloropropane	2013/04/26	NC		%	30
		cis-1,3-Dichloropropene	2013/04/26	NC		%	30
		trans-1,3-Dichloropropene	2013/04/26	NC		%	30
		Ethylbenzene	2013/04/26	NC		%	30
		Ethylene Dibromide	2013/04/26	NC		%	30
		Hexane	2013/04/26	NC		%	30
		Methylene Chloride(Dichloromethane)	2013/04/26	NC		%	30
		Methyl Isobutyl Ketone	2013/04/26	NC		%	30
		Methyl Ethyl Ketone (2-Butanone)	2013/04/26	NC		%	30
		Methyl t-butyl ether (MTBE)	2013/04/26	NC		%	30
		Styrene	2013/04/26	NC		%	30
		1,1,1,2-Tetrachloroethane	2013/04/26	NC		%	30
		1,1,2,2-Tetrachloroethane	2013/04/26	NC		%	30
		Tetrachloroethylene	2013/04/26	NC		%	30
		Toluene	2013/04/26	NC		%	30
		1,1,1-Trichloroethane	2013/04/26	NC		%	30
		1,1,2-Trichloroethane	2013/04/26	NC		%	30
		Trichloroethylene	2013/04/26	NC		%	30
		Vinyl Chloride	2013/04/26	NC		%	30

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

City of Guelph
Attention: Amy Spence
Client Project #: WET/DRY - SURFACE WATER/ORGANI
P.O. #:
Site Location: 110 DUNLOP DR.

Quality Assurance Report (Continued)

Maxxam Job Number: MB359009

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3192378 NR1	RPD [RF7821-02]	p+m-Xylene	2013/04/26	NC		%	30
		o-Xylene	2013/04/26	NC		%	30
		Xylene (Total)	2013/04/26	NC		%	30
		Trichlorofluoromethane (FREON 11)	2013/04/26	NC		%	30
3192682 NR1	Matrix Spike [RF7823-02]	Acrolein	2013/04/29		125	%	60 - 140
		Acrylonitrile	2013/04/29		99	%	60 - 140
	Spiked Blank	Acrolein	2013/04/29		130	%	60 - 140
		Acrylonitrile	2013/04/29		100	%	60 - 140
	Method Blank	Acrolein	2013/04/29	ND, RDL=10		ug/L	
		Acrylonitrile	2013/04/29	ND, RDL=5.0		ug/L	
	RPD [RF7821-02]	Acrolein	2013/04/29	NC		%	30
		Acrylonitrile	2013/04/29	NC		%	30
3195007 ADA	Matrix Spike	Total Boron (B)	2013/04/29		103	%	80 - 120
		Total Calcium (Ca)	2013/04/29		NC	%	80 - 120
		Total Iron (Fe)	2013/04/29		107	%	80 - 120
		Total Magnesium (Mg)	2013/04/29		NC	%	80 - 120
		Total Potassium (K)	2013/04/29		113	%	80 - 120
		Total Sodium (Na)	2013/04/29		NC	%	80 - 120
		Total Zinc (Zn)	2013/04/29		103	%	80 - 120
	Spiked Blank	Total Boron (B)	2013/04/29		103	%	80 - 120
		Total Calcium (Ca)	2013/04/29		119	%	80 - 120
		Total Iron (Fe)	2013/04/29		111	%	80 - 120
		Total Magnesium (Mg)	2013/04/29		120	%	80 - 120
		Total Potassium (K)	2013/04/29		120	%	80 - 120
		Total Sodium (Na)	2013/04/29		116	%	80 - 120
		Total Zinc (Zn)	2013/04/29		109	%	80 - 120
	Method Blank	Total Boron (B)	2013/04/29	ND, RDL=0.010		mg/L	
		Total Calcium (Ca)	2013/04/29	ND, RDL=0.20		mg/L	
		Total Iron (Fe)	2013/04/29	ND, RDL=0.10		mg/L	
		Total Magnesium (Mg)	2013/04/29	ND, RDL=0.050		mg/L	
		Total Potassium (K)	2013/04/29	ND, RDL=0.20		mg/L	
		Total Sodium (Na)	2013/04/29	ND, RDL=0.10		mg/L	
		Total Zinc (Zn)	2013/04/29	ND, RDL=0.0050		mg/L	
	RPD	Total Boron (B)	2013/04/29	NC		%	20
		Total Calcium (Ca)	2013/04/29	0.01		%	20
		Total Iron (Fe)	2013/04/29	NC		%	20
		Total Magnesium (Mg)	2013/04/29	2.2		%	20
		Total Potassium (K)	2013/04/29	0.3		%	20
		Total Sodium (Na)	2013/04/29	2.4		%	20
		Total Zinc (Zn)	2013/04/29	2.3		%	20
3195719 BMO	Matrix Spike	Phenols-4AAP	2013/04/29		99	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/04/29		98	%	85 - 115
	Method Blank	Phenols-4AAP	2013/04/29	ND, RDL=0.0010		mg/L	
	RPD	Phenols-4AAP	2013/04/29	NC		%	25
3195936 VRO	Matrix Spike	Total Phosphorus	2013/04/30		102	%	80 - 120
	QC Standard	Total Phosphorus	2013/04/30		103	%	85 - 115
	Spiked Blank	Total Phosphorus	2013/04/30		103	%	85 - 115
	Method Blank	Total Phosphorus	2013/04/30	ND, RDL=0.020		mg/L	
	RPD	Total Phosphorus	2013/04/30	NC		%	20
3197013 C_N	Matrix Spike	Total Kjeldahl Nitrogen (TKN)	2013/04/30		NC	%	80 - 120
	QC Standard	Total Kjeldahl Nitrogen (TKN)	2013/04/30		95	%	80 - 120
	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2013/04/30		89	%	80 - 120
	Method Blank	Total Kjeldahl Nitrogen (TKN)	2013/04/30	0.18, RDL=0.10		mg/L	
	RPD	Total Kjeldahl Nitrogen (TKN)	2013/04/30	0.3		%	20

City of Guelph
Attention: Amy Spence
Client Project #: WET/DRY - SURFACE WATER/ORGANI
P.O. #:
Site Location: 110 DUNLOP DR.

Quality Assurance Report (Continued)

Maxxam Job Number: MB359009

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
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.
(1) The recovery was above the upper control limit. This may represent a high bias in some results for this specific analyte. For results that were not detected (ND), this potential bias has no impact.
(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.
(3) The recovery was below the lower control limit. This may represent a low bias in some results for this specific analyte.

Validation Signature Page

Maxxam Job #: B359009

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

Cristina Carriere

Cristina Carriere, Scientific Services

Floyd Mayede

Floyd Mayede, Senior Analyst

==

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

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Your P.O. #: 720.8121.3516
Your Project #: Wet/Dry - Surface Water
Your C.O.C. #: 40039602, 400396-02-01

Attention: Amy Spence
City of Guelph
Soild Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2013/06/06

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B382608
Received: 2013/05/29, 16:15

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	5	N/A	2013/05/31	CAM SOP-00448	SM 2320B
Biochemical Oxygen Demand (BOD)	5	N/A	2013/06/04	CAM SOP-00427	APHA 5210B
Chloride by Automated Colourimetry	5	N/A	2013/05/31	CAM SOP-00463	EPA 325.2
Chemical Oxygen Demand	5	N/A	2013/06/03	CAM SOP-00416	APHA 5220D
Conductivity	5	N/A	2013/05/31	CAM SOP-00448	SM 2510
Total Metals Analysis by ICPMS	5	N/A	2013/06/04	CAM SOP-00447	EPA 6020
Total Ammonia-N	5	N/A	2013/05/31	CAM SOP-00441	US GS I-2522-90
pH	5	N/A	2013/05/31	CAM SOP-00448	SM 4500H+ B
Phenols (4AAP)	5	N/A	2013/06/04	CAM SOP-00444	MOE ROPHEN-E3179
Sulphate by Automated Colourimetry	5	N/A	2013/05/31	CAM SOP-00464	EPA 375.4
Total Kjeldahl Nitrogen in Water	5	2013/06/04	2013/06/05	CAM SOP-00454	EPA 351.2 Rev 2
Total Phosphorus (Colourimetric)	5	2013/06/04	2013/06/05	CAM SOP-00407	SM 4500 P,B,F
Low Level Total Suspended Solids	5	N/A	2013/05/31	CAM SOP-00428	SM 2540D

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

Encryption Key

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

Preeti Gururajan, Project Manager
Email: PGururajan@maxxam.ca
Phone# (905) 817-5734

==
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Total cover pages: 1

Maxxam Job #: B382608
Report Date: 2013/06/06

City of Guelph
Client Project #: Wet/Dry - Surface Water

Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		RR7717			RR7718		RR7719		
Sampling Date		2013/05/28			2013/05/28		2013/05/28		
COC Number		400396-02-01			400396-02-01		400396-02-01		
	Units	**EPTS01**	**RDL**	**QC Batch**	**P1SW3**	**RDL**	**P1SW2**	**RDL**	**QC Batch**
Inorganics									
Total Ammonia-N	mg/L	0.12	0.050	3230738	4.6	0.050	0.23	0.050	3230738
Total BOD	mg/L	ND	2.0	3229604	110	2.0	12	2.0	3229604
Total Chemical Oxygen Demand (COD)	mg/L	8.9	4.0	3230716	380	20	410	20	3230716
Conductivity	umho/cm	580	1.0	3230805	340	1.0	1500	1.0	3230805
Total Kjeldahl Nitrogen (TKN)	mg/L	0.42	0.10	3234640	15	1.0	48	5.0	3234640
pH	pH	8.16		3230806	7.21		7.97		3230806
Phenols-4AAP	mg/L	ND	0.0010	3230217	0.014	0.0010	0.0034	0.0010	3230228
Total Phosphorus	mg/L	ND	0.020	3235772	2.8	0.10	2.8	0.10	3235772
Total Suspended Solids	mg/L	2	1	3230361	480	10	440	3	3230361
Dissolved Sulphate (SO4)	mg/L	13	1	3230787	6	1	ND	1	3230787
Alkalinity (Total as CaCO3)	mg/L	220	1.0	3230804	97	1.0	350	1.0	3230804
Dissolved Chloride (Cl)	mg/L	35	1	3230786	28	1	230	3	3230786

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B382608
Report Date: 2013/06/06

City of Guelph
Client Project #: Wet/Dry - Surface Water

Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		RR7720			RR7721		
Sampling Date		2013/05/28			2013/05/28		
COC Number		400396-02-01			400396-02-01		
	Units	**TP1-IN**	**RDL**	**QC Batch**	**TP1-OUT**	**RDL**	**QC Batch**
Inorganics							
Total Ammonia-N	mg/L	0.14	0.050	3230738	0.10	0.050	3230738
Total BOD	mg/L	4.0	2.0	3229604	4.0	2.0	3229604
Total Chemical Oxygen Demand (COD)	mg/L	49	4.0	3230716	59	4.0	3230716
Conductivity	umho/cm	570	1.0	3230805	1000	1.0	3230805
Total Kjeldahl Nitrogen (TKN)	mg/L	1.3	0.10	3234640	2.7	0.10	3234640
pH	pH	7.89		3230806	8.26		3230806
Phenols-4AAP	mg/L	ND	0.0010	3230228	ND	0.0010	3230228
Total Phosphorus	mg/L	0.22	0.040	3235772	0.82	0.040	3235772
Total Suspended Solids	mg/L	24	1	3230361	49	1	3230361
Dissolved Sulphate (SO4)	mg/L	38	1	3230787	19	1	3230724
Alkalinity (Total as CaCO3)	mg/L	110	1.0	3230804	150	1.0	3230804
Dissolved Chloride (Cl)	mg/L	82	1	3230786	180	2	3230722

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B382608
Report Date: 2013/06/06

City of Guelph
Client Project #: Wet/Dry - Surface Water

Your P.O. #: 720.8121.3516

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		RR7717	RR7718	RR7719	RR7720	RR7721		
Sampling Date		2013/05/28	2013/05/28	2013/05/28	2013/05/28	2013/05/28		
COC Number		400396-02-01	400396-02-01	400396-02-01	400396-02-01	400396-02-01		
	Units	**EPTS01**	**P1SW3**	**P1SW2**	**TP1-IN**	**TP1-OUT**	**RDL**	**QC Batch**
Metals								
Total Boron (B)	mg/L	ND	0.021	0.016	0.038	0.019	0.010	3235043
Total Calcium (Ca)	mg/L	79	66	96	44	57	0.20	3235043
Total Iron (Fe)	mg/L	ND	8.3	4.6	1.8	8.5	0.10	3235043
Total Magnesium (Mg)	mg/L	22	23	27	6.1	6.0	0.050	3235043
Total Potassium (K)	mg/L	1.4	34	6.2	1.5	3.9	0.20	3235043
Total Sodium (Na)	mg/L	26	14	220	74	150	0.10	3235043
Total Zinc (Zn)	mg/L	0.060	0.44	0.11	0.057	0.015	0.0050	3235043

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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City of Guelph
Attention: Amy Spence
Client Project #: Wet/Dry - Surface Water
P.O. #: 720.8121.3516
Site Location:

Quality Assurance Report

Maxxam Job Number: MB382608

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3229604 HTR	QC Standard	Total BOD	2013/06/04		113	%	85 - 115
	Method Blank	Total BOD	2013/06/04	ND, RDL=2.0		mg/L	
	RPD	Total BOD	2013/06/04	NC		%	25
3230217 BMO	Matrix Spike	Phenols-4AAP	2013/06/04		102	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/06/04		102	%	85 - 115
	Method Blank	Phenols-4AAP	2013/06/04	ND, RDL=0.0010		mg/L	
	RPD	Phenols-4AAP	2013/06/04	NC		%	25
3230228 BMO	Matrix Spike	Phenols-4AAP	2013/06/04		99	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/06/04		101	%	85 - 115
	Method Blank	Phenols-4AAP	2013/06/04	ND, RDL=0.0010		mg/L	
	RPD	Phenols-4AAP	2013/06/04	NC		%	25
3230361 SUP	QC Standard	Total Suspended Solids	2013/05/31		97	%	85 - 115
	Method Blank	Total Suspended Solids	2013/05/31	ND, RDL=1		mg/L	
	RPD	Total Suspended Solids	2013/05/31	10.2		%	25
3230716 L_A	Matrix Spike [RR7717-04]	Total Chemical Oxygen Demand (COD)	2013/06/03		100	%	75 - 125
	Spiked Blank	Total Chemical Oxygen Demand (COD)	2013/06/03		100	%	75 - 125
	Method Blank	Total Chemical Oxygen Demand (COD)	2013/06/03	ND, RDL=4.0		mg/L	
	RPD [RR7717-04]	Total Chemical Oxygen Demand (COD)	2013/06/03	NC		%	25
3230722 ADB	Matrix Spike	Dissolved Chloride (Cl)	2013/05/31		107	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2013/05/31		103	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2013/05/31	ND, RDL=1		mg/L	
	RPD	Dissolved Chloride (Cl)	2013/05/31	NC		%	20
3230724 ADB	Matrix Spike	Dissolved Sulphate (SO4)	2013/05/31		99	%	75 - 125
	Spiked Blank	Dissolved Sulphate (SO4)	2013/05/31		100	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2013/05/31	ND, RDL=1		mg/L	
	RPD	Dissolved Sulphate (SO4)	2013/05/31	4.8		%	20
3230738 COP	Matrix Spike	Total Ammonia-N	2013/05/31		99	%	80 - 120
	Spiked Blank	Total Ammonia-N	2013/05/31		98	%	85 - 115
	Method Blank	Total Ammonia-N	2013/05/31	0.055, RDL=0.050		mg/L	
	RPD	Total Ammonia-N	2013/05/31	NC		%	20
3230786 ADB	Matrix Spike	Dissolved Chloride (Cl)	2013/05/31		NC	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2013/05/31		104	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2013/05/31	ND, RDL=1		mg/L	
	RPD	Dissolved Chloride (Cl)	2013/05/31	0.4		%	20
3230787 ADB	Matrix Spike	Dissolved Sulphate (SO4)	2013/05/31		NC	%	75 - 125
	Spiked Blank	Dissolved Sulphate (SO4)	2013/05/31		98	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2013/05/31	ND, RDL=1		mg/L	
	RPD	Dissolved Sulphate (SO4)	2013/05/31	0.7		%	20
3230804 YPA	QC Standard	Alkalinity (Total as CaCO3)	2013/05/31		92	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/05/31	ND, RDL=1.0		mg/L	
	RPD [RR7720-01]	Alkalinity (Total as CaCO3)	2013/05/31	0.02		%	25
3230805 YPA	QC Standard	Conductivity	2013/05/31		101	%	85 - 115
	Method Blank	Conductivity	2013/05/31	ND, RDL=1.0		umho/cm	
	RPD [RR7720-01]	Conductivity	2013/05/31	0.4		%	25
3234640 C_N	Matrix Spike	Total Kjeldahl Nitrogen (TKN)	2013/06/05		85	%	80 - 120
	QC Standard	Total Kjeldahl Nitrogen (TKN)	2013/06/05		89	%	80 - 120
	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2013/06/05		87	%	80 - 120
	Method Blank	Total Kjeldahl Nitrogen (TKN)	2013/06/05	ND, RDL=0.10		mg/L	
	RPD	Total Kjeldahl Nitrogen (TKN)	2013/06/05	17.5		%	20
3235043 HRE	Matrix Spike	Total Boron (B)	2013/06/04		95	%	80 - 120
		Total Calcium (Ca)	2013/06/04		NC	%	80 - 120
		Total Iron (Fe)	2013/06/04		101	%	80 - 120
		Total Magnesium (Mg)	2013/06/04		NC	%	80 - 120
		Total Potassium (K)	2013/06/04		99	%	80 - 120

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City of Guelph
Attention: Amy Spence
Client Project #: Wet/Dry - Surface Water
P.O. #: 720.8121.3516
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB382608

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3235043 HRE	Matrix Spike	Total Sodium (Na)	2013/06/04		94	%	80 - 120
		Total Zinc (Zn)	2013/06/04		103	%	80 - 120
	Spiked Blank	Total Boron (B)	2013/06/04		95	%	80 - 120
		Total Calcium (Ca)	2013/06/04		106	%	80 - 120
		Total Iron (Fe)	2013/06/04		106	%	80 - 120
		Total Magnesium (Mg)	2013/06/04		104	%	80 - 120
		Total Potassium (K)	2013/06/04		103	%	80 - 120
		Total Sodium (Na)	2013/06/04		101	%	80 - 120
		Total Zinc (Zn)	2013/06/04		105	%	80 - 120
	Method Blank	Total Boron (B)	2013/06/04	ND, RDL=0.010		mg/L	
		Total Calcium (Ca)	2013/06/04	ND, RDL=0.20		mg/L	
		Total Iron (Fe)	2013/06/04	ND, RDL=0.10		mg/L	
		Total Magnesium (Mg)	2013/06/04	ND, RDL=0.050		mg/L	
		Total Potassium (K)	2013/06/04	ND, RDL=0.20		mg/L	
		Total Sodium (Na)	2013/06/04	ND, RDL=0.10		mg/L	
		Total Zinc (Zn)	2013/06/04	ND, RDL=0.0050		mg/L	
3235772 VRO	Matrix Spike	Total Phosphorus	2013/06/05		101	%	80 - 120
	QC Standard	Total Phosphorus	2013/06/05		105	%	85 - 115
	Spiked Blank	Total Phosphorus	2013/06/05		102	%	85 - 115
	Method Blank	Total Phosphorus	2013/06/05	ND, RDL=0.020		mg/L	
	RPD	Total Phosphorus	2013/06/05	2.7		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
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 #: B382608

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

Cristina Carriere

Cristina Carriere, Scientific Services

==
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Maxxam

Success Through Science®

Your P.O. #: 720.8121.3516
Your Project #: WET/DRY-SURFACE WATER
Your C.O.C. #: 366576

Attention: Amy Spence
City of Guelph
Soild Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2013/07/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3A3915
Received: 2013/06/28, 16:45

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	4	N/A	2013/07/02	CAM SOP-00448	SM 2320B
Biochemical Oxygen Demand (BOD)	4	N/A	2013/07/04	CAM SOP-00427	APHA 5210B
Chloride by Automated Colourimetry	4	N/A	2013/07/03	CAM SOP-00463	EPA 325.2
Chemical Oxygen Demand	4	N/A	2013/07/04	CAM SOP-00416	APHA 5220D
Conductivity	4	N/A	2013/07/02	CAM SOP-00448	SM 2510
Total Metals Analysis by ICPMS	4	N/A	2013/07/08	CAM SOP-00447	EPA 6020
Total Ammonia-N	4	N/A	2013/07/03	CAM SOP-00441	US GS I-2522-90
pH	4	N/A	2013/07/02	CAM SOP-00448	SM 4500H+ B
Phenols (4AAP)	4	N/A	2013/07/04	CAM SOP-00444	MOE ROPHEN-E3179
Sulphate by Automated Colourimetry	4	N/A	2013/07/03	CAM SOP-00464	EPA 375.4
Total Kjeldahl Nitrogen in Water	4	2013/07/03	2013/07/04	CAM SOP-00454	EPA 351.2 Rev 2
Total Phosphorus (Colourimetric)	4	2013/07/05	2013/07/05	CAM SOP-00407	SM 4500 P,B,F
Low Level Total Suspended Solids	1	N/A	2013/07/02	CAM SOP-00428	SM 2540D
Low Level Total Suspended Solids	3	N/A	2013/07/03	CAM SOP-00428	SM 2540D

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

Encryption Key

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

James Aspin, Senior Project Manager
Email: JAspin@maxxam.ca
Phone# (905) 817-5771

==
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Total cover pages: 1

Success Through Science®

Maxxam Job #: B3A3915
Report Date: 2013/07/08

City of Guelph
Client Project #: WET/DRY-SURFACE WATER

Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		SB8568		SB8569	SB8570		
Sampling Date		2013/06/27		2013/06/27	2013/06/27		
COC Number		366576		366576	366576		
	Units	**P1SW2**	**RDL**	**TP1-IN**	**TP1-OUT**	**RDL**	**QC Batch**
Inorganics							
Total Ammonia-N	mg/L	0.74	0.050	0.056	0.093	0.050	3266137
Total BOD	mg/L	5.0	2.0	11	ND	2.0	3264599
Total Chemical Oxygen Demand (COD)	mg/L	120	4.0	77	20	4.0	3266125
Conductivity	umho/cm	2000	1.0	620	370	1.0	3264833
Total Kjeldahl Nitrogen (TKN)	mg/L	5.1	0.20	2.0	0.71	0.10	3267032
pH	pH	7.96		7.98	8.02		3264834
Phenols-4AAP	mg/L	ND	0.0010	ND	ND	0.0010	3265420
Total Phosphorus	mg/L	1.4	0.040	0.18	ND	0.020	3269558
Total Suspended Solids	mg/L	280	5	38	2	1	3266076
Dissolved Sulphate (SO4)	mg/L	5	1	28	10	1	3266196
Alkalinity (Total as CaCO3)	mg/L	540	1.0	190	120	1.0	3264831
Dissolved Chloride (Cl)	mg/L	310	4	65	30	1	3266193

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3A3915
Report Date: 2013/07/08

City of Guelph
Client Project #: WET/DRY-SURFACE WATER

Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		SB8571		
Sampling Date		2013/06/27		
COC Number		366576		
	Units	**EPTS01**	**RDL**	**QC Batch**
Inorganics				
Total Ammonia-N	mg/L	0.11	0.050	3266137
Total BOD	mg/L	ND	2.0	3264599
Total Chemical Oxygen Demand (COD)	mg/L	10	4.0	3266125
Conductivity	umho/cm	630	1.0	3264833
Total Kjeldahl Nitrogen (TKN)	mg/L	0.43	0.10	3267032
pH	pH	8.03		3264834
Phenols-4AAP	mg/L	ND	0.0010	3265420
Total Phosphorus	mg/L	ND	0.020	3269558
Total Suspended Solids	mg/L	3	1	3265229
Dissolved Sulphate (SO4)	mg/L	13	1	3266196
Alkalinity (Total as CaCO3)	mg/L	240	1.0	3264831
Dissolved Chloride (Cl)	mg/L	39	1	3266193

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3A3915
Report Date: 2013/07/08

City of Guelph
Client Project #: WET/DRY-SURFACE WATER

Your P.O. #: 720.8121.3516

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		SB8568	SB8569	SB8570	SB8571		
Sampling Date		2013/06/27	2013/06/27	2013/06/27	2013/06/27		
COC Number		366576	366576	366576	366576		
	Units	**P1SW2**	**TP1-IN**	**TP1-OUT**	**EPTS01**	**RDL**	**QC Batch**
Metals							
Total Boron (B)	mg/L	0.043	0.065	0.032	0.016	0.010	3271624
Total Calcium (Ca)	mg/L	160	70	42	78	0.20	3271624
Total Iron (Fe)	mg/L	11	1.8	0.31	ND	0.10	3271624
Total Magnesium (Mg)	mg/L	37	9.0	4.0	22	0.050	3271624
Total Potassium (K)	mg/L	3.8	1.5	1.9	1.4	0.20	3271624
Total Sodium (Na)	mg/L	250	54	31	27	0.10	3271624
Total Zinc (Zn)	mg/L	0.20	0.031	ND	0.066	0.0050	3271624

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

GENERAL COMMENTS

Results relate only to the items tested.

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City of Guelph
Attention: Amy Spence
Client Project #: WET/DRY-SURFACE WATER
P.O. #: 720.8121.3516
Site Location:

Quality Assurance Report

Maxxam Job Number: MB3A3915

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3264599 JIZ	QC Standard	Total BOD	2013/07/04		103	%	85 - 115
	Method Blank	Total BOD	2013/07/04	ND, RDL=2.0		mg/L	
	RPD	Total BOD	2013/07/04	NC		%	25
3264831 SAU	QC Standard	Alkalinity (Total as CaCO3)	2013/07/02		96	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/07/02	ND, RDL=1.0		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2013/07/02	0.3		%	25
3264833 SAU	QC Standard	Conductivity	2013/07/02		103	%	85 - 115
	Method Blank	Conductivity	2013/07/02	ND, RDL=1.0		umho/cm	
	RPD	Conductivity	2013/07/02	0.07		%	25
3265229 GKR	QC Standard	Total Suspended Solids	2013/07/02		97	%	85 - 115
	Method Blank	Total Suspended Solids	2013/07/02	ND, RDL=1		mg/L	
	RPD	Total Suspended Solids	2013/07/02	NC		%	25
3265420 BMO	Matrix Spike [SB8568-06]	Phenols-4AAP	2013/07/04		97	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/07/04		94	%	85 - 115
	Method Blank	Phenols-4AAP	2013/07/04	ND, RDL=0.0010		mg/L	
	RPD [SB8568-06]	Phenols-4AAP	2013/07/04	NC		%	25
3266076 GKR	QC Standard	Total Suspended Solids	2013/07/03		98	%	85 - 115
	Method Blank	Total Suspended Solids	2013/07/03	ND, RDL=1		mg/L	
	RPD	Total Suspended Solids	2013/07/03	4.4		%	25
3266125 CP	Matrix Spike	Total Chemical Oxygen Demand (COD)	2013/07/04		91	%	75 - 125
	Spiked Blank	Total Chemical Oxygen Demand (COD)	2013/07/04		101	%	75 - 125
	Method Blank	Total Chemical Oxygen Demand (COD)	2013/07/04	ND, RDL=4.0		mg/L	
	RPD	Total Chemical Oxygen Demand (COD)	2013/07/04	0.06		%	25
3266137 COP	Matrix Spike	Total Ammonia-N	2013/07/03		NC	%	80 - 120
	Spiked Blank	Total Ammonia-N	2013/07/03		102	%	85 - 115
	Method Blank	Total Ammonia-N	2013/07/03	ND, RDL=0.050		mg/L	
	RPD	Total Ammonia-N	2013/07/03	1		%	20
3266193 DRM	Matrix Spike	Dissolved Chloride (Cl)	2013/07/03		NC	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2013/07/03		103	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2013/07/03	ND, RDL=1		mg/L	
	RPD	Dissolved Chloride (Cl)	2013/07/03	3.2		%	20
3266196 DRM	Matrix Spike	Dissolved Sulphate (SO4)	2013/07/03		NC	%	75 - 125
	Spiked Blank	Dissolved Sulphate (SO4)	2013/07/03		98	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2013/07/03	ND, RDL=1		mg/L	
	RPD	Dissolved Sulphate (SO4)	2013/07/03	3.6		%	20
3267032 C_N	Matrix Spike	Total Kjeldahl Nitrogen (TKN)	2013/07/04		89	%	80 - 120
	QC Standard	Total Kjeldahl Nitrogen (TKN)	2013/07/04		97	%	80 - 120
	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2013/07/04		92	%	80 - 120
	Method Blank	Total Kjeldahl Nitrogen (TKN)	2013/07/04	ND, RDL=0.10		mg/L	
	RPD	Total Kjeldahl Nitrogen (TKN)	2013/07/04	NC		%	20
3269558 VRO	Matrix Spike	Total Phosphorus	2013/07/05		103	%	80 - 120
	QC Standard	Total Phosphorus	2013/07/05		102	%	85 - 115
	Spiked Blank	Total Phosphorus	2013/07/05		99	%	85 - 115
	Method Blank	Total Phosphorus	2013/07/05	ND, RDL=0.020		mg/L	
	RPD	Total Phosphorus	2013/07/05	NC		%	20
3271624 KCO	Matrix Spike	Total Boron (B)	2013/07/08		NC	%	80 - 120
		Total Calcium (Ca)	2013/07/08		NC	%	80 - 120
		Total Iron (Fe)	2013/07/08		107	%	80 - 120
		Total Magnesium (Mg)	2013/07/08		NC	%	80 - 120
		Total Potassium (K)	2013/07/08		107	%	80 - 120
		Total Sodium (Na)	2013/07/08		NC	%	80 - 120
		Total Zinc (Zn)	2013/07/08		103	%	80 - 120
	Spiked Blank	Total Boron (B)	2013/07/08		107	%	80 - 120
		Total Calcium (Ca)	2013/07/08		110	%	80 - 120

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

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Success Through Science®

City of Guelph
Attention: Amy Spence
Client Project #: WET/DRY-SURFACE WATER
P.O. #: 720.8121.3516
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB3A3915

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3271624 KCO	Spiked Blank	Total Iron (Fe)	2013/07/08		107	%	80 - 120
		Total Magnesium (Mg)	2013/07/08		108	%	80 - 120
		Total Potassium (K)	2013/07/08		109	%	80 - 120
		Total Sodium (Na)	2013/07/08		111	%	80 - 120
		Total Zinc (Zn)	2013/07/08		105	%	80 - 120
	Method Blank	Total Boron (B)	2013/07/08	ND, RDL=0.010		mg/L	
		Total Calcium (Ca)	2013/07/08	ND, RDL=0.20		mg/L	
		Total Iron (Fe)	2013/07/08	ND, RDL=0.10		mg/L	
		Total Magnesium (Mg)	2013/07/08	ND, RDL=0.050		mg/L	
		Total Potassium (K)	2013/07/08	ND, RDL=0.20		mg/L	
		Total Sodium (Na)	2013/07/08	ND, RDL=0.10		mg/L	
		Total Zinc (Zn)	2013/07/08	ND, RDL=0.0050		mg/L	
	RPD	Total Zinc (Zn)	2013/07/08	NC		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B3A3915

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

CHARTERED
Eva Pranjic
CHEMIST

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

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Your Project #: WET/DRY - SURFACE WATER
Your C.O.C. #: 42043201, 420432-01-01

Attention: Amy Spence
City of Guelph
Soild Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2013/08/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3C2542
Received: 2013/07/26, 16:30

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	3	N/A	2013/07/29	CAM SOP-00448	SM 2320B
Biochemical Oxygen Demand (BOD)	3	N/A	2013/08/01	CAM SOP-00427	APHA 5210B
Chloride by Automated Colourimetry	3	N/A	2013/07/29	CAM SOP-00463	EPA 325.2
Chemical Oxygen Demand	3	N/A	2013/07/31	CAM SOP-00416	APHA 5220D
Conductivity	3	N/A	2013/07/29	CAM SOP-00448	SM 2510
Total Metals Analysis by ICPMS	3	N/A	2013/08/01	CAM SOP-00447	EPA 6020
Total Ammonia-N	3	N/A	2013/07/30	CAM SOP-00441	US GS I-2522-90
pH	3	N/A	2013/07/29	CAM SOP-00448	SM 4500H+ B
Phenols (4AAP)	3	N/A	2013/07/30	CAM SOP-00444	MOE ROPHEN-E3179
Sulphate by Automated Colourimetry	3	N/A	2013/07/29	CAM SOP-00464	EPA 375.4
Total Kjeldahl Nitrogen in Water	3	2013/07/31	2013/08/01	CAM SOP-00454	EPA 351.2 Rev 2
Total Phosphorus (Colourimetric)	3	2013/08/01	2013/08/01	CAM SOP-00407	SM 4500 P,B,F
Low Level Total Suspended Solids	1	N/A	2013/07/29	CAM SOP-00428	SM 2540D
Low Level Total Suspended Solids	2	N/A	2013/07/30	CAM SOP-00428	SM 2540D

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

Encryption Key

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

Preeti Gururajan, Project Manager
Email: PGururajan@maxxam.ca
Phone# (905) 817-5734

==
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Total cover pages: 1

Maxxam

Maxxam Job #: B3C2542
Report Date: 2013/08/02

City of Guelph
Client Project #: WET/DRY - SURFACE WATER

RESULTS OF ANALYSES OF WATER

Maxxam ID		SK7327		SK7328			SK7329		
Sampling Date		2013/07/25		2013/07/25			2013/07/25		
COC Number		420432-01-01		420432-01-01			420432-01-01		
	Units	**TP1-OUT**	**QC Batch**	**EPTS01**	**RDL**	**QC Batch**	**P1SW2**	**RDL**	**QC Batch**
Inorganics									
Total Ammonia-N	mg/L	0.17	3296280	0.067	0.050	3296280	0.090	0.050	3296280
Total BOD	mg/L	ND	3295310	ND	2.0	3295310	4.0	2.0	3295310
Total Chemical Oxygen Demand (COD)	mg/L	18	3296097	6.3	4.0	3296097	27	4.0	3296097
Conductivity	umho/cm	230	3295607	600	1.0	3295607	1100	1.0	3295607
Total Kjeldahl Nitrogen (TKN)	mg/L	0.82	3299744	0.39	0.10	3299744	1.2	0.10	3299744
pH	pH	7.96	3295608	8.17		3295608	7.93		3295608
Phenols-4AAP	mg/L	ND	3295320	ND	0.0010	3295320	ND	0.0010	3295320
Total Phosphorus	mg/L	0.075	3300491	ND	0.020	3300491	0.14	0.020	3300491
Total Suspended Solids	mg/L	1	3295795	2	1	3295820	8	1	3295795
Dissolved Sulphate (SO4)	mg/L	11	3295581	12	1	3295581	7	1	3295581
Alkalinity (Total as CaCO3)	mg/L	82	3295606	240	1.0	3295606	220	1.0	3295606
Dissolved Chloride (Cl)	mg/L	14	3295579	32	1	3295579	180	2	3295579

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

City of Guelph
Maxxam Job #: B3C2542
Client Project #: WET/DRY - SURFACE WATER
Report Date: 2013/08/02

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		SK7327	SK7328	SK7329		
Sampling Date		2013/07/25	2013/07/25	2013/07/25		
COC Number		420432-01-01	420432-01-01	420432-01-01		
	Units	**TP1-OUT**	**EPTS01**	**P1SW2**	**RDL**	**QC Batch**
Metals						
Total Boron (B)	mg/L	0.037	0.017	0.033	0.010	3300513
Total Calcium (Ca)	mg/L	33	77	82	0.20	3300513
Total Iron (Fe)	mg/L	0.26	ND	1.3	0.10	3300513
Total Magnesium (Mg)	mg/L	3.4	21	18	0.050	3300513
Total Potassium (K)	mg/L	3.0	1.5	4.3	0.20	3300513
Total Sodium (Na)	mg/L	12	23	130	0.10	3300513
Total Zinc (Zn)	mg/L	ND	0.059	0.0089	0.0050	3300513

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

City of Guelph
Attention: Amy Spence
Client Project #: WET/DRY - SURFACE WATER
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: MB3C2542

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3295310 HTR	QC Standard	Total BOD	2013/08/01		112	%	85 - 115
	Method Blank	Total BOD	2013/08/01	ND, RDL=2.0		mg/L	
	RPD	Total BOD	2013/08/01	NC		%	25
3295320 BMO	Matrix Spike [SK7329-06]	Phenols-4AAP	2013/07/30		97	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/07/30		98	%	85 - 115
	Method Blank	Phenols-4AAP	2013/07/30	ND, RDL=0.0010		mg/L	
	RPD [SK7329-06]	Phenols-4AAP	2013/07/30	NC		%	25
3295579 ADB	Matrix Spike	Dissolved Chloride (Cl)	2013/07/29		NC	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2013/07/29		103	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2013/07/29	ND, RDL=1		mg/L	
	RPD	Dissolved Chloride (Cl)	2013/07/29	0.3		%	20
3295581 ADB	Matrix Spike	Dissolved Sulphate (SO4)	2013/07/29		NC	%	75 - 125
	Spiked Blank	Dissolved Sulphate (SO4)	2013/07/29		101	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2013/07/29	ND, RDL=1		mg/L	
	RPD	Dissolved Sulphate (SO4)	2013/07/29	0.7		%	20
3295606 SAU	QC Standard	Alkalinity (Total as CaCO3)	2013/07/29		94	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/07/29	ND, RDL=1.0		mg/L	
	RPD [SK7328-01]	Alkalinity (Total as CaCO3)	2013/07/29	0.9		%	25
3295607 SAU	QC Standard	Conductivity	2013/07/29		101	%	85 - 115
	Method Blank	Conductivity	2013/07/29	ND, RDL=1.0		umho/cm	
	RPD [SK7328-01]	Conductivity	2013/07/29	0.2		%	25
3295795 YCH	QC Standard	Total Suspended Solids	2013/07/30		99	%	85 - 115
	Method Blank	Total Suspended Solids	2013/07/30	ND, RDL=1		mg/L	
	RPD [SK7327-03]	Total Suspended Solids	2013/07/30	NC		%	25
3295820 MMJ	QC Standard	Total Suspended Solids	2013/07/29		97	%	85 - 115
	Method Blank	Total Suspended Solids	2013/07/29	ND, RDL=1		mg/L	
	RPD [SK7328-03]	Total Suspended Solids	2013/07/29	NC		%	25
3296097 CP	Matrix Spike	Total Chemical Oxygen Demand (COD)	2013/07/31		101	%	75 - 125
	Spiked Blank	Total Chemical Oxygen Demand (COD)	2013/07/31		101	%	75 - 125
	Method Blank	Total Chemical Oxygen Demand (COD)	2013/07/31	ND, RDL=4.0		mg/L	
	RPD	Total Chemical Oxygen Demand (COD)	2013/07/31	1.7		%	25
3296280 COP	Matrix Spike	Total Ammonia-N	2013/07/30		94	%	80 - 120
	Spiked Blank	Total Ammonia-N	2013/07/30		97	%	85 - 115
	Method Blank	Total Ammonia-N	2013/07/30	ND, RDL=0.050		mg/L	
	RPD	Total Ammonia-N	2013/07/30	NC		%	20
3299744 C_N	Matrix Spike [SK7329-05]	Total Kjeldahl Nitrogen (TKN)	2013/08/01		84	%	80 - 120
	QC Standard	Total Kjeldahl Nitrogen (TKN)	2013/08/01		99	%	80 - 120
	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2013/08/01		93	%	80 - 120
	Method Blank	Total Kjeldahl Nitrogen (TKN)	2013/08/01	ND, RDL=0.10		mg/L	
	RPD [SK7329-05]	Total Kjeldahl Nitrogen (TKN)	2013/08/01	5.1		%	20
3300491 VRO	Matrix Spike [SK7328-05]	Total Phosphorus	2013/08/01		104	%	80 - 120
	QC Standard	Total Phosphorus	2013/08/01		104	%	80 - 120
	Spiked Blank	Total Phosphorus	2013/08/01		106	%	80 - 120
	Method Blank	Total Phosphorus	2013/08/01	ND, RDL=0.020		mg/L	
	RPD [SK7328-05]	Total Phosphorus	2013/08/01	NC		%	20
3300513 PBA	Matrix Spike	Total Boron (B)	2013/08/01		NC	%	80 - 120
		Total Calcium (Ca)	2013/08/01		NC	%	80 - 120
		Total Iron (Fe)	2013/08/01		101	%	80 - 120
		Total Magnesium (Mg)	2013/08/01		NC	%	80 - 120
		Total Potassium (K)	2013/08/01		NC	%	80 - 120
		Total Sodium (Na)	2013/08/01		NC	%	80 - 120
		Total Zinc (Zn)	2013/08/01		100	%	80 - 120

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City of Guelph
Attention: Amy Spence
Client Project #: WET/DRY - SURFACE WATER
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB3C2542

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3300513 PBA	Spiked Blank	Total Boron (B)	2013/08/01		109	%	80 - 120
		Total Calcium (Ca)	2013/08/01		103	%	80 - 120
		Total Iron (Fe)	2013/08/01		101	%	80 - 120
		Total Magnesium (Mg)	2013/08/01		100	%	80 - 120
		Total Potassium (K)	2013/08/01		102	%	80 - 120
		Total Sodium (Na)	2013/08/01		101	%	80 - 120
		Total Zinc (Zn)	2013/08/01		104	%	80 - 120
	Method Blank	Total Boron (B)	2013/08/01	ND, RDL=0.010		mg/L	
		Total Calcium (Ca)	2013/08/01	ND, RDL=0.20		mg/L	
		Total Iron (Fe)	2013/08/01	ND, RDL=0.10		mg/L	
		Total Magnesium (Mg)	2013/08/01	ND, RDL=0.050		mg/L	
		Total Potassium (K)	2013/08/01	ND, RDL=0.20		mg/L	
		Total Sodium (Na)	2013/08/01	ND, RDL=0.10		mg/L	
		Total Zinc (Zn)	2013/08/01	0.0059, RDL=0.0050		mg/L	
	RPD	Total Boron (B)	2013/08/01	5.5		%	20
		Total Zinc (Zn)	2013/08/01	NC		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B3C2542

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

Cristina Carriere

Cristina Carriere, Scientific Services

==

Maxxam

Success Through Science®

Your P.O. #: 720.8121.3516
Your Project #: WET/DRY SW
Your C.O.C. #: C#420432, C#420432-02-01

Attention: Amy Spence
City of Guelph
Soild Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2013/08/15

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3D0272
Received: 2013/08/08, 16:40

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	7	N/A	2013/08/12	CAM SOP-00448	SM 2320B
Biochemical Oxygen Demand (BOD)	7	N/A	2013/08/14	CAM SOP-00427	APHA 5210B
Chloride by Automated Colourimetry	7	N/A	2013/08/12	CAM SOP-00463	EPA 325.2
Chemical Oxygen Demand	7	N/A	2013/08/13	CAM SOP-00416	APHA 5220D
Conductivity	7	N/A	2013/08/12	CAM SOP-00448	SM 2510
Total Metals Analysis by ICPMS	7	N/A	2013/08/14	CAM SOP-00447	EPA 6020
Total Ammonia-N	7	N/A	2013/08/12	CAM SOP-00441	US GS I-2522-90
pH	7	N/A	2013/08/12	CAM SOP-00448	SM 4500H+ B
Phenols (4AAP)	7	N/A	2013/08/13	CAM SOP-00444	MOE ROPHEN-E3179
Sulphate by Automated Colourimetry	7	N/A	2013/08/12	CAM SOP-00464	EPA 375.4
Total Kjeldahl Nitrogen in Water	7	2013/08/13	2013/08/14	CAM SOP-00454	EPA 351.2 Rev 2
Total Phosphorus (Colourimetric)	7	2013/08/14	2013/08/14	CAM SOP-00407	SM 4500 P,B,F
Low Level Total Suspended Solids	5	N/A	2013/08/10	CAM SOP-00428	SM 2540D
Low Level Total Suspended Solids	2	N/A	2013/08/12	CAM SOP-00428	SM 2540D

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

Encryption Key

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

James Aspin, Senior Project Manager
Email: JAspin@maxxam.ca
Phone# (905) 817-5771

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Total cover pages: 1

Maxxam Job #: B3D0272
Report Date: 2013/08/15

City of Guelph
Client Project #: WET/DRY SW

Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		SO6061			SO6062		
Sampling Date		2013/08/07			2013/08/07		
COC Number		C#420432-02-01			C#420432-02-01		
	Units	**EPTS01**	**RDL**	**QC Batch**	**P1SW3**	**RDL**	**QC Batch**
Inorganics							
Total Ammonia-N	mg/L	0.074	0.050	3310243	1.3	0.050	3310243
Total BOD	mg/L	ND	2.0	3308800	17	2.0	3308800
Total Chemical Oxygen Demand (COD)	mg/L	5.7	4.0	3310452	140	4.0	3310452
Conductivity	umho/cm	560	1.0	3310107	110	1.0	3310107
Total Kjeldahl Nitrogen (TKN)	mg/L	0.52	0.10	3313049	5.8	0.50	3313049
pH	pH	8.20		3310108	7.11		3310108
Phenols-4AAP	mg/L	ND	0.0010	3310049	0.0049	0.0010	3310049
Total Phosphorus	mg/L	ND	0.020	3313724	1.1	0.10	3313724
Total Suspended Solids	mg/L	1	1	3309082	170	5	3309081
Dissolved Sulphate (SO4)	mg/L	12	1	3310008	4	1	3310008
Alkalinity (Total as CaCO3)	mg/L	220	1.0	3310106	38	1.0	3310106
Dissolved Chloride (Cl)	mg/L	30	1	3310007	6	1	3310007

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3D0272
Report Date: 2013/08/15

City of Guelph
Client Project #: WET/DRY SW

Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		SO6063		SO6064		SO6065		
Sampling Date		2013/08/07		2013/08/07		2013/08/07		
COC Number		C#420432-02-01		C#420432-02-01		C#420432-02-01		
	Units	**P1SW2**	**RDL**	**P2SW2**	**RDL**	**P2SW1**	**RDL**	**QC Batch**
Inorganics								
Total Ammonia-N	mg/L	0.18	0.050	0.20	0.050	0.76	0.050	3310444
Total BOD	mg/L	57	2.0	5.0	2.0	170	2.0	3308800
Total Chemical Oxygen Demand (COD)	mg/L	110	4.0	19	4.0	360	20	3310452
Conductivity	umho/cm	210	1.0	58	1.0	540	1.0	3310107
Total Kjeldahl Nitrogen (TKN)	mg/L	3.8	0.10	1.8	0.10	7.5	1.0	3313049
pH	pH	7.05		7.32		6.51		3310108
Phenols-4AAP	mg/L	0.0036	0.0010	ND	0.0010	0.0026	0.0010	3310049
Total Phosphorus	mg/L	0.79	0.10	0.13	0.020	5.5	0.10	3313724
Total Suspended Solids	mg/L	50	3	27	1	49	3	3309081
Dissolved Sulphate (SO4)	mg/L	2	1	1	1	17	1	3310008
Alkalinity (Total as CaCO3)	mg/L	53	1.0	22	1.0	100	1.0	3310106
Dissolved Chloride (Cl)	mg/L	27	1	3	1	63	1	3310007

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3D0272
Report Date: 2013/08/15

City of Guelph
Client Project #: WET/DRY SW

Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		SO6066			SO6067		
Sampling Date		2013/08/07			2013/08/07		
COC Number		C#420432-02-01			C#420432-02-01		
	Units	**TP1-OUT**	**RDL**	**QC Batch**	**TP1-IN**	**RDL**	**QC Batch**
Inorganics							
Total Ammonia-N	mg/L	0.055	0.050	3310243	0.078	0.050	3310444
Total BOD	mg/L	14	2.0	3308800	3.0	2.0	3308800
Total Chemical Oxygen Demand (COD)	mg/L	55	4.0	3310452	17	4.0	3310452
Conductivity	umho/cm	470	1.0	3310107	93	1.0	3310107
Total Kjeldahl Nitrogen (TKN)	mg/L	1.9	0.10	3313049	1.2	0.10	3313049
pH	pH	7.68		3310108	7.50		3310108
Phenols-4AAP	mg/L	0.0010	0.0010	3310049	ND	0.0010	3310049
Total Phosphorus	mg/L	0.39	0.020	3313724	0.16	0.020	3313724
Total Suspended Solids	mg/L	11	2	3309081	8	1	3309082
Dissolved Sulphate (SO4)	mg/L	ND	1	3310008	11	1	3310008
Alkalinity (Total as CaCO3)	mg/L	140	1.0	3310106	29	1.0	3310106
Dissolved Chloride (Cl)	mg/L	58	1	3310007	3	1	3310007

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Success Through Science®

Maxxam Job #: B3D0272
Report Date: 2013/08/15

City of Guelph
Client Project #: WET/DRY SW

Your P.O. #: 720.8121.3516

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		SO6061	SO6062	SO6063	SO6064	SO6065		
Sampling Date		2013/08/07	2013/08/07	2013/08/07	2013/08/07	2013/08/07		
COC Number		C#420432-02-01	C#420432-02-01	C#420432-02-01	C#420432-02-01	C#420432-02-01		
	Units	**EPTS01**	**P1SW3**	**P1SW2**	**P2SW2**	**P2SW1**	**RDL**	**QC Batch**
Metals								
Total Boron (B)	mg/L	0.017	0.019	0.018	ND	0.033	0.010	3312874
Total Calcium (Ca)	mg/L	75	13	24	9.7	42	0.20	3312874
Total Iron (Fe)	mg/L	ND	3.4	2.4	0.53	0.61	0.10	3312874
Total Magnesium (Mg)	mg/L	20	4.3	5.0	1.9	8.6	0.050	3312874
Total Potassium (K)	mg/L	1.5	12	13	1.0	66	0.20	3312874
Total Sodium (Na)	mg/L	20	1.7	22	2.2	15	0.10	3312874
Total Zinc (Zn)	mg/L	0.058	0.10	0.10	0.047	0.10	0.0050	3312874

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		SO6066	SO6067		
Sampling Date		2013/08/07	2013/08/07		
COC Number		C#420432-02-01	C#420432-02-01		
	Units	**TP1-OUT**	**TP1-IN**	**RDL**	**QC Batch**
Metals					
Total Boron (B)	mg/L	0.028	0.020	0.010	3312874
Total Calcium (Ca)	mg/L	46	13	0.20	3312874
Total Iron (Fe)	mg/L	1.2	0.35	0.10	3312874
Total Magnesium (Mg)	mg/L	7.2	1.5	0.050	3312874
Total Potassium (K)	mg/L	12	1.6	0.20	3312874
Total Sodium (Na)	mg/L	32	2.8	0.10	3312874
Total Zinc (Zn)	mg/L	0.011	0.033	0.0050	3312874

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

City of Guelph
Attention: Amy Spence
Client Project #: WET/DRY SW
P.O. #: 720.8121.3516
Site Location:

Quality Assurance Report

Maxxam Job Number: MB3D0272

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3308800 HTR	QC Standard	Total BOD	2013/08/14		89	%	85 - 115
	Method Blank	Total BOD	2013/08/14	ND, RDL=2.0		mg/L	
	RPD	Total BOD	2013/08/14	NC		%	25
3309081 MMJ	QC Standard	Total Suspended Solids	2013/08/10		99	%	85 - 115
	Method Blank	Total Suspended Solids	2013/08/10	ND, RDL=1		mg/L	
	RPD	Total Suspended Solids	2013/08/10	NC		%	25
3309082 YCH	QC Standard	Total Suspended Solids	2013/08/12		97	%	85 - 115
	Method Blank	Total Suspended Solids	2013/08/12	ND, RDL=1		mg/L	
	RPD	Total Suspended Solids	2013/08/12	9.5		%	25
3310007 ADB	Matrix Spike	Dissolved Chloride (Cl)	2013/08/12		NC	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2013/08/12		101	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2013/08/12	ND, RDL=1		mg/L	
	RPD	Dissolved Chloride (Cl)	2013/08/12	0.5		%	20
3310008 ADB	Matrix Spike	Dissolved Sulphate (SO4)	2013/08/12		NC	%	75 - 125
	Spiked Blank	Dissolved Sulphate (SO4)	2013/08/12		99	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2013/08/12	ND, RDL=1		mg/L	
	RPD	Dissolved Sulphate (SO4)	2013/08/12	0.8		%	20
3310049 BMO	Matrix Spike [SO6067-06]	Phenols-4AAP	2013/08/13		101	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/08/13		102	%	85 - 115
	Method Blank	Phenols-4AAP	2013/08/13	ND, RDL=0.0010		mg/L	
	RPD [SO6067-06]	Phenols-4AAP	2013/08/13	NC		%	25
3310106 SAU	QC Standard	Alkalinity (Total as CaCO3)	2013/08/12		94	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/08/12	1.7, RDL=1.0		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2013/08/12	0.4		%	25
3310107 SAU	QC Standard	Conductivity	2013/08/12		101	%	85 - 115
	Method Blank	Conductivity	2013/08/12	ND, RDL=1.0		umho/cm	
	RPD	Conductivity	2013/08/12	0.1		%	25
3310243 COP	Matrix Spike	Total Ammonia-N	2013/08/12		99	%	80 - 120
	Spiked Blank	Total Ammonia-N	2013/08/12		94	%	85 - 115
	Method Blank	Total Ammonia-N	2013/08/12	ND, RDL=0.050		mg/L	
	RPD	Total Ammonia-N	2013/08/12	NC		%	20
3310444 COP	Matrix Spike [SO6064-05]	Total Ammonia-N	2013/08/12		97	%	80 - 120
	Spiked Blank	Total Ammonia-N	2013/08/12		97	%	85 - 115
	Method Blank	Total Ammonia-N	2013/08/12	ND, RDL=0.050		mg/L	
	RPD [SO6064-05]	Total Ammonia-N	2013/08/12	NC		%	20
3310452 CP	Matrix Spike [SO6061-05]	Total Chemical Oxygen Demand (COD)	2013/08/13		96	%	75 - 125
	Spiked Blank	Total Chemical Oxygen Demand (COD)	2013/08/13		101	%	75 - 125
	Method Blank	Total Chemical Oxygen Demand (COD)	2013/08/13	ND, RDL=4.0		mg/L	
	RPD [SO6061-05]	Total Chemical Oxygen Demand (COD)	2013/08/13	NC		%	25
3312874 HRE	Matrix Spike [SO6061-04]	Total Boron (B)	2013/08/14		108	%	80 - 120
		Total Calcium (Ca)	2013/08/14		NC	%	80 - 120
		Total Iron (Fe)	2013/08/14		106	%	80 - 120
		Total Magnesium (Mg)	2013/08/14		NC	%	80 - 120
		Total Potassium (K)	2013/08/14		106	%	80 - 120
		Total Sodium (Na)	2013/08/14		NC	%	80 - 120
		Total Zinc (Zn)	2013/08/14		107	%	80 - 120
	Spiked Blank	Total Boron (B)	2013/08/14		106	%	80 - 120
		Total Calcium (Ca)	2013/08/14		104	%	80 - 120
		Total Iron (Fe)	2013/08/14		104	%	80 - 120
		Total Magnesium (Mg)	2013/08/14		102	%	80 - 120
		Total Potassium (K)	2013/08/14		103	%	80 - 120

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City of Guelph
Attention: Amy Spence
Client Project #: WET/DRY SW
P.O. #: 720.8121.3516
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB3D0272

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3312874 HRE	Spiked Blank	Total Sodium (Na)	2013/08/14		101	%	80 - 120
		Total Zinc (Zn)	2013/08/14		105	%	80 - 120
	Method Blank	Total Boron (B)	2013/08/14	ND, RDL=0.010		mg/L	
		Total Calcium (Ca)	2013/08/14	ND, RDL=0.20		mg/L	
		Total Iron (Fe)	2013/08/14	ND, RDL=0.10		mg/L	
		Total Magnesium (Mg)	2013/08/14	ND, RDL=0.050		mg/L	
		Total Potassium (K)	2013/08/14	ND, RDL=0.20		mg/L	
		Total Sodium (Na)	2013/08/14	ND, RDL=0.10		mg/L	
		Total Zinc (Zn)	2013/08/14	ND, RDL=0.0050		mg/L	
	RPD [SO6061-04]	Total Boron (B)	2013/08/14	NC		%	20
		Total Calcium (Ca)	2013/08/14	4.5		%	20
		Total Iron (Fe)	2013/08/14	NC		%	20
		Total Magnesium (Mg)	2013/08/14	2.5		%	20
		Total Potassium (K)	2013/08/14	3.4		%	20
		Total Sodium (Na)	2013/08/14	1.9		%	20
		Total Zinc (Zn)	2013/08/14	3.1		%	20
3313049 C_N	Matrix Spike	Total Kjeldahl Nitrogen (TKN)	2013/08/14		NC	%	80 - 120
	QC Standard	Total Kjeldahl Nitrogen (TKN)	2013/08/14		110	%	80 - 120
	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2013/08/14		102	%	80 - 120
	Method Blank	Total Kjeldahl Nitrogen (TKN)	2013/08/14	ND, RDL=0.10		mg/L	
	RPD	Total Kjeldahl Nitrogen (TKN)	2013/08/14	1.8		%	20
3313724 VRO	Matrix Spike	Total Phosphorus	2013/08/14		100	%	80 - 120
	QC Standard	Total Phosphorus	2013/08/14		103	%	80 - 120
	Spiked Blank	Total Phosphorus	2013/08/14		104	%	80 - 120
	Method Blank	Total Phosphorus	2013/08/14	ND, RDL=0.020		mg/L	
	RPD	Total Phosphorus	2013/08/14	1.9		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
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 #: B3D0272

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

Eva Pranjic
CHARTERED
Eva Pranjic
CHEMIST

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

==

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Your P.O. #: 720.8121.3516
Your Project #: Wet/Dry - Surface Water
Your C.O.C. #: 42043203, 420432-03-01

Attention: Amy Spence
City of Guelph
Soild Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2013/10/03

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3G2626
Received: 2013/09/25, 16:40

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	5	N/A	2013/09/27	CAM SOP-00448	SM 2320B
Biochemical Oxygen Demand (BOD)	5	N/A	2013/10/01	CAM SOP-00427	APHA 5210B
Chloride by Automated Colourimetry	5	N/A	2013/09/27	CAM SOP-00463	EPA 325.2
Chemical Oxygen Demand	1	N/A	2013/10/01	CAM SOP-00416	APHA 5220D
Chemical Oxygen Demand	4	N/A	2013/10/02	CAM SOP-00416	APHA 5220D
Conductivity	5	N/A	2013/09/27	CAM SOP-00414	SM 2510
Total Metals Analysis by ICPMS	5	N/A	2013/10/02	CAM SOP-00447	EPA 6020
Total Ammonia-N	5	N/A	2013/10/02	CAM SOP-00441	US GS I-2522-90
pH	5	N/A	2013/09/27	CAM SOP-00413	SM 4500H+ B
Phenols (4AAP)	5	N/A	2013/10/01	CAM SOP-00444	MOE ROPHEN-E3179
Sulphate by Automated Colourimetry	5	N/A	2013/09/27	CAM SOP-00464	EPA 375.4
Total Kjeldahl Nitrogen in Water	5	2013/10/01	2013/10/03	CAM SOP-00454	EPA 351.2 Rev 2
Total Phosphorus (Colourimetric)	5	2013/10/01	2013/10/01	CAM SOP-00407	SM 4500 P,B,F
Low Level Total Suspended Solids	3	N/A	2013/09/26	CAM SOP-00428	SM 2540D
Low Level Total Suspended Solids	2	N/A	2013/09/27	CAM SOP-00428	SM 2540D

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

Encryption Key

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

Preeti Gururajan, Project Manager
Email: PGururajan@maxxam.ca
Phone# (905) 817-5734

==
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Total cover pages: 1

Maxxam Job #: B3G2626
Report Date: 2013/10/03

City of Guelph
Client Project #: Wet/Dry - Surface Water

Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		TF2370			TF2371		
Sampling Date		2013/09/24			2013/09/24		
COC Number		420432-03-01			420432-03-01		
	Units	**EPTSOL**	**RDL**	**QC Batch**	**P1SW3**	**RDL**	**QC Batch**
Inorganics							
Total Ammonia-N	mg/L	0.12	0.050	3366241	6.2	0.25	3366241
Total BOD	mg/L	ND	2.0	3363685	25	2.0	3363685
Total Chemical Oxygen Demand (COD)	mg/L	10	4.0	3367486	140	4.0	3367486
Conductivity	umho/cm	640	1.0	3364308	440	1.0	3364308
Total Kjeldahl Nitrogen (TKN)	mg/L	0.93	0.10	3369919	14	1.0	3369919
pH	pH	8.15		3364307	7.45		3364307
Phenols-4AAP	mg/L	ND	0.0010	3364853	0.018	0.0010	3364853
Total Phosphorus	mg/L	ND	0.020	3369302	2.6	0.20	3369302
Total Suspended Solids	mg/L	2	1	3363761	74	5	3364911
Dissolved Sulphate (SO4)	mg/L	14	1	3365256	ND	1	3365256
Alkalinity (Total as CaCO3)	mg/L	260	1.0	3364305	160	1.0	3364305
Dissolved Chloride (Cl)	mg/L	37	1	3365255	34	1	3365255

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3G2626
Report Date: 2013/10/03

City of Guelph
Client Project #: Wet/Dry - Surface Water

Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		TF2372			TF2373		
Sampling Date		2013/09/24			2013/09/24		
COC Number		420432-03-01			420432-03-01		
	Units	**P1SW2**	**RDL**	**QC Batch**	**TP1-IN**	**RDL**	**QC Batch**

Inorganics							
Total Ammonia-N	mg/L	0.10	0.050	3366241	0.11	0.050	3366241
Total BOD	mg/L	5.0	2.0	3363685	4.0	2.0	3363685
Total Chemical Oxygen Demand (COD)	mg/L	38	4.0	3367486	67	4.0	3367211
Conductivity	umho/cm	440	1.0	3364308	820	1.0	3364308
Total Kjeldahl Nitrogen (TKN)	mg/L	1.6	0.10	3369919	2.4	0.10	3369919
pH	pH	7.78		3364307	8.18		3364307
Phenols-4AAP	mg/L	0.0020	0.0010	3364853	ND	0.0010	3364853
Total Phosphorus	mg/L	0.34	0.020	3369302	0.20	0.10	3369302
Total Suspended Solids	mg/L	2	1	3363761	11	1	3364911
Dissolved Sulphate (SO4)	mg/L	8	1	3365256	4	1	3365256
Alkalinity (Total as CaCO3)	mg/L	140	1.0	3364305	270	1.0	3364305
Dissolved Chloride (Cl)	mg/L	43	1	3365255	100	1	3365255

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam

City of Guelph
Client Project #: Wet/Dry - Surface Water

Maxxam Job #: B3G2626
Report Date: 2013/10/03

Your P.O. #: 720.8121.3516

RESULTS OF ANALYSES OF WATER

Maxxam ID		TF2374		
Sampling Date		2013/09/24		
COC Number		420432-03-01		
	Units	**TP1-OUT**	**RDL**	**QC Batch**
Inorganics				
Total Ammonia-N	mg/L	0.094	0.050	3366241
Total BOD	mg/L	ND	2.0	3363685
Total Chemical Oxygen Demand (COD)	mg/L	32	4.0	3367486
Conductivity	umho/cm	510	1.0	3364308
Total Kjeldahl Nitrogen (TKN)	mg/L	1.2	0.10	3369919
pH	pH	7.95		3364307
Phenols-4AAP	mg/L	ND	0.0010	3364853
Total Phosphorus	mg/L	0.077	0.020	3369302
Total Suspended Solids	mg/L	2	1	3363761
Dissolved Sulphate (SO4)	mg/L	9	1	3365256
Alkalinity (Total as CaCO3)	mg/L	180	1.0	3364305
Dissolved Chloride (Cl)	mg/L	43	1	3365255

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Maxxam Job #: B3G2626
Report Date: 2013/10/03

City of Guelph
Client Project #: Wet/Dry - Surface Water

Your P.O. #: 720.8121.3516

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		TF2370	TF2371	TF2372	TF2373	TF2374		
Sampling Date		2013/09/24	2013/09/24	2013/09/24	2013/09/24	2013/09/24		
COC Number		420432-03-01	420432-03-01	420432-03-01	420432-03-01	420432-03-01		
	Units	**EPTSOL**	**P1SW3**	**P1SW2**	**TP1-IN**	**TP1-OUT**	**RDL**	**QC Batch**
Metals								
Total Boron (B)	mg/L	0.021	0.038	0.028	0.028	0.024	0.010	3370087
Total Calcium (Ca)	mg/L	74	35	36	89	54	0.20	3370087
Total Iron (Fe)	mg/L	ND	2.7	0.40	3.2	0.16	0.10	3370087
Total Magnesium (Mg)	mg/L	20	6.3	7.1	17	8.8	0.050	3370087
Total Potassium (K)	mg/L	1.5	32	12	4.8	3.1	0.20	3370087
Total Sodium (Na)	mg/L	23	18	36	64	35	0.10	3370087
Total Zinc (Zn)	mg/L	0.067	0.066	0.014	0.10	0.0074	0.0050	3370087

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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City of Guelph
Attention: Amy Spence
Client Project #: Wet/Dry - Surface Water
P.O. #: 720.8121.3516
Site Location:

Quality Assurance Report

Maxxam Job Number: MB3G2626

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3363685 HTR	QC Standard	Total BOD	2013/10/01		99	%	85 - 115
	Method Blank	Total BOD	2013/10/01	ND, RDL=2.0		mg/L	
	RPD	Total BOD	2013/10/01	NC		%	25
3363761 NS1	QC Standard	Total Suspended Solids	2013/09/26		99	%	85 - 115
	Method Blank	Total Suspended Solids	2013/09/26	ND, RDL=1		mg/L	
	RPD [TF2370-03]	Total Suspended Solids	2013/09/26	NC		%	25
3364305 SAU	QC Standard	Alkalinity (Total as CaCO3)	2013/09/27		94	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/09/27	ND, RDL=1.0		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2013/09/27	0.2		%	25
3364308 SAU	Spiked Blank	Conductivity	2013/09/27		102	%	85 - 115
	Method Blank	Conductivity	2013/09/27	ND, RDL=1.0		umho/cm	
	RPD	Conductivity	2013/09/27	0.1		%	25
3364853 BMO	Matrix Spike [TF2374-06]	Phenols-4AAP	2013/10/01		102	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/10/01		104	%	85 - 115
	Method Blank	Phenols-4AAP	2013/10/01	ND, RDL=0.0010		mg/L	
	RPD [TF2374-06]	Phenols-4AAP	2013/10/01	NC		%	25
3364911 YCH	QC Standard	Total Suspended Solids	2013/09/27		98	%	85 - 115
	Method Blank	Total Suspended Solids	2013/09/27	ND, RDL=1		mg/L	
	RPD	Total Suspended Solids	2013/09/27	10.5		%	25
3365255 ADB	Matrix Spike	Dissolved Chloride (Cl)	2013/09/27		NC	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2013/09/27		103	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2013/09/27	ND, RDL=1		mg/L	
	RPD	Dissolved Chloride (Cl)	2013/09/27	2.4		%	20
3365256 ADB	Matrix Spike	Dissolved Sulphate (SO4)	2013/09/27		NC	%	75 - 125
	Spiked Blank	Dissolved Sulphate (SO4)	2013/09/27		102	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2013/09/27	ND, RDL=1		mg/L	
	RPD	Dissolved Sulphate (SO4)	2013/09/27	0.6		%	20
3366241 AHA	Matrix Spike	Total Ammonia-N	2013/10/02		NC	%	80 - 120
	Spiked Blank	Total Ammonia-N	2013/10/02		100	%	85 - 115
	Method Blank	Total Ammonia-N	2013/10/02	ND, RDL=0.050		mg/L	
	RPD	Total Ammonia-N	2013/10/02	1.6		%	20
3367211 CP	Matrix Spike	Total Chemical Oxygen Demand (COD)	2013/10/01		99	%	75 - 125
	Spiked Blank	Total Chemical Oxygen Demand (COD)	2013/10/01		101	%	75 - 125
	Method Blank	Total Chemical Oxygen Demand (COD)	2013/10/01	ND, RDL=4.0		mg/L	
	RPD	Total Chemical Oxygen Demand (COD)	2013/10/01	NC		%	25
3367486 CP	Matrix Spike [TF2374-04]	Total Chemical Oxygen Demand (COD)	2013/10/02		99	%	75 - 125
	Spiked Blank	Total Chemical Oxygen Demand (COD)	2013/10/02		103	%	75 - 125
	Method Blank	Total Chemical Oxygen Demand (COD)	2013/10/02	ND, RDL=4.0		mg/L	
	RPD [TF2374-04]	Total Chemical Oxygen Demand (COD)	2013/10/02	1.4		%	25
3369302 VRO	Matrix Spike	Total Phosphorus	2013/10/01		102	%	80 - 120
	QC Standard	Total Phosphorus	2013/10/01		104	%	80 - 120
	Spiked Blank	Total Phosphorus	2013/10/01		104	%	80 - 120
	Method Blank	Total Phosphorus	2013/10/01	ND, RDL=0.020		mg/L	
	RPD	Total Phosphorus	2013/10/01	3.3		%	20
3369919 C_N	Matrix Spike	Total Kjeldahl Nitrogen (TKN)	2013/10/03		NC	%	80 - 120
	QC Standard	Total Kjeldahl Nitrogen (TKN)	2013/10/03		105	%	80 - 120
	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2013/10/03		103	%	80 - 120
	Method Blank	Total Kjeldahl Nitrogen (TKN)	2013/10/03	0.16, RDL=0.10		mg/L	
	RPD	Total Kjeldahl Nitrogen (TKN)	2013/10/03	0.1		%	20
3370087 HRE	Matrix Spike	Total Boron (B)	2013/10/02		93	%	80 - 120
		Total Calcium (Ca)	2013/10/02		NC	%	80 - 120
		Total Iron (Fe)	2013/10/02		94	%	80 - 120
		Total Magnesium (Mg)	2013/10/02		NC	%	80 - 120

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City of Guelph
Attention: Amy Spence
Client Project #: Wet/Dry - Surface Water
P.O. #: 720.8121.3516
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB3G2626

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3370087	HRE	Matrix Spike	Total Potassium (K)	2013/10/02		88	%	80 - 120
			Total Sodium (Na)	2013/10/02		NC	%	80 - 120
			Total Zinc (Zn)	2013/10/02		93	%	80 - 120
		Spiked Blank	Total Boron (B)	2013/10/02		101	%	80 - 120
			Total Calcium (Ca)	2013/10/02		99	%	80 - 120
			Total Iron (Fe)	2013/10/02		101	%	80 - 120
			Total Magnesium (Mg)	2013/10/02		96	%	80 - 120
			Total Potassium (K)	2013/10/02		89	%	80 - 120
			Total Sodium (Na)	2013/10/02		95	%	80 - 120
			Total Zinc (Zn)	2013/10/02		104	%	80 - 120
		Method Blank	Total Boron (B)	2013/10/02	ND, RDL=0.010		mg/L	
			Total Calcium (Ca)	2013/10/02	ND, RDL=0.20		mg/L	
			Total Iron (Fe)	2013/10/02	ND, RDL=0.10		mg/L	
			Total Magnesium (Mg)	2013/10/02	ND, RDL=0.050		mg/L	
			Total Potassium (K)	2013/10/02	ND, RDL=0.20		mg/L	
			Total Sodium (Na)	2013/10/02	ND, RDL=0.10		mg/L	
			Total Zinc (Zn)	2013/10/02	ND, RDL=0.0050		mg/L	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B3G2626

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

Cristina Carriere

Cristina Carriere, Scientific Services

==

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Your Project #: Wet/Dry - Surface Water
Your C.O.C. #: 42043204, 420432-04-01

Attention: Amy Spence
City of Guelph
Soild Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2013/11/11

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3I8391
Received: 2013/11/01, 16:45

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	7	N/A	2013/11/03	CAM SOP-00448	SM 2320B
Biochemical Oxygen Demand (BOD)	7	N/A	2013/11/09	CAM SOP-00427	APHA 5210B
Chloride by Automated Colourimetry	7	N/A	2013/11/04	CAM SOP-00463	EPA 325.2
Chemical Oxygen Demand	7	N/A	2013/11/08	CAM SOP-00416	APHA 5220D
Conductivity	7	N/A	2013/11/03	CAM SOP-00414	SM 2510
Total Metals Analysis by ICPMS	7	N/A	2013/11/08	CAM SOP-00447	EPA 6020
Total Ammonia-N	7	N/A	2013/11/06	CAM SOP-00441	US GS I-2522-90
pH	7	N/A	2013/11/03	CAM SOP-00413	SM 4500H+ B
Phenols (4AAP)	1	N/A	2013/11/05	CAM SOP-00444	MOE ROPHEN-E3179
Phenols (4AAP)	6	N/A	2013/11/06	CAM SOP-00444	MOE ROPHEN-E3179
Sulphate by Automated Colourimetry	7	N/A	2013/11/04	CAM SOP-00464	EPA 375.4
Total Kjeldahl Nitrogen in Water	7	2013/11/07	2013/11/07	CAM SOP-00454	EPA 351.2 Rev 2
Total Phosphorus (Colourimetric)	7	2013/11/06	2013/11/07	CAM SOP-00407	SM 4500 P,B,F
Low Level Total Suspended Solids	7	N/A	2013/11/05	CAM SOP-00428	SM 2540D

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

Encryption Key

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

James Aspin, Senior Project Manager
Email: JAspin@maxxam.ca
Phone# (905) 817-5771

==
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

City of Guelph
Maxxam Job #: B3I8391
Client Project #: Wet/Dry - Surface Water
Report Date: 2013/11/11

RESULTS OF ANALYSES OF WATER

Maxxam ID		TS7622		TS7623		TS7624		
Sampling Date		2013/10/31		2013/10/31		2013/10/31		
COC Number		420432-04-01		420432-04-01		420432-04-01		
	Units	**P1 SW3**	**RDL**	**P1 SW2**	**QC Batch**	**P2SW2**	**RDL**	**QC Batch**
Inorganics								
Total Ammonia-N	mg/L	1.8	0.050	ND	3411754	0.065	0.050	3411754
Total BOD	mg/L	130	2.0	ND	3409558	ND	2.0	3409558
Total Chemical Oxygen Demand (COD)	mg/L	510	20	8.2	3411743	14	4.0	3411743
Conductivity	umho/cm	340	1.0	120	3409027	36	1.0	3408870
Total Kjeldahl Nitrogen (TKN)	mg/L	9.8	2.0	0.57	3414393	0.48	0.10	3414393
pH	pH	6.79		7.21	3409029	7.02		3408871
Phenols-4AAP	mg/L	ND (1)	0.050	0.0019	3409647	0.0018	0.0010	3409647
Total Phosphorus	mg/L	3.6	0.20	0.12	3413207	0.12	0.020	3413207
Total Suspended Solids	mg/L	93	5	2	3408640	33	1	3408640
Dissolved Sulphate (SO4)	mg/L	ND (2)	10	ND	3409055	ND	1	3409055
Alkalinity (Total as CaCO3)	mg/L	83	1.0	41	3409026	14	1.0	3408865
Dissolved Chloride (Cl)	mg/L	30 (2)	10	11	3409053	ND	1	3409053

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Detection Limit was raised due to matrix interferences.
(2) Due to colour interferences, sample required dilution. Detection limit was adjusted accordingly.

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Maxxam Job #: B3I8391
Report Date: 2013/11/11

City of Guelph
Client Project #: Wet/Dry - Surface Water

RESULTS OF ANALYSES OF WATER

Maxxam ID		TS7625		TS7626		TS7627		
Sampling Date		2013/10/31		2013/10/31		2013/10/31		
COC Number		420432-04-01		420432-04-01		420432-04-01		
	Units	**P2SW1**	**QC Batch**	**TP1-IN**	**QC Batch**	**TP1-OUT**	**RDL**	**QC Batch**
Inorganics								
Total Ammonia-N	mg/L	ND	3411754	ND	3411754	ND	0.050	3411754
Total BOD	mg/L	ND	3409558	16	3409558	3.0	2.0	3409558
Total Chemical Oxygen Demand (COD)	mg/L	21	3411743	47	3411743	17	4.0	3411743
Conductivity	umho/cm	110	3409027	200	3408776	150	1.0	3409027
Total Kjeldahl Nitrogen (TKN)	mg/L	0.55	3414393	0.73	3414393	0.72	0.10	3414393
pH	pH	7.27	3409029	7.81	3408777	7.32		3409029
Phenols-4AAP	mg/L	0.0019	3409647	0.0010	3409657	0.0023	0.0010	3409647
Total Phosphorus	mg/L	0.18	3413207	0.20	3413207	0.19	0.020	3413207
Total Suspended Solids	mg/L	2	3408640	3	3408640	5	1	3408640
Dissolved Sulphate (SO4)	mg/L	4	3409055	10	3409055	8	1	3409055
Alkalinity (Total as CaCO3)	mg/L	44	3409026	71	3408774	52	1.0	3409026
Dissolved Chloride (Cl)	mg/L	3	3409053	12	3409053	10	1	3409053

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Maxxam Job #: B3I8391
Report Date: 2013/11/11

City of Guelph
Client Project #: Wet/Dry - Surface Water

RESULTS OF ANALYSES OF WATER

Maxxam ID		TS7628		
Sampling Date		2013/10/31		
COC Number		420432-04-01		
	Units	**EPTS01**	**RDL**	**QC Batch**
Inorganics				
Total Ammonia-N	mg/L	ND	0.050	3411754
Total BOD	mg/L	ND	2.0	3409558
Total Chemical Oxygen Demand (COD)	mg/L	ND	4.0	3411743
Conductivity	umho/cm	620	1.0	3409027
Total Kjeldahl Nitrogen (TKN)	mg/L	0.27	0.10	3414393
pH	pH	8.13		3409029
Phenols-4AAP	mg/L	ND	0.0010	3409636
Total Phosphorus	mg/L	ND	0.020	3413207
Total Suspended Solids	mg/L	ND	1	3408640
Dissolved Sulphate (SO4)	mg/L	12	1	3409055
Alkalinity (Total as CaCO3)	mg/L	260	1.0	3409026
Dissolved Chloride (Cl)	mg/L	32	1	3409053

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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City of Guelph
Maxxam Job #: B3I8391
Client Project #: Wet/Dry - Surface Water
Report Date: 2013/11/11

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		TS7622	TS7623	TS7624	TS7625	TS7626	TS7627		
Sampling Date		2013/10/31	2013/10/31	2013/10/31	2013/10/31	2013/10/31	2013/10/31		
COC Number		420432-04-01	420432-04-01	420432-04-01	420432-04-01	420432-04-01	420432-04-01		
	Units	**P1 SW3**	**P1 SW2**	**P2SW2**	**P2SW1**	**TP1-IN**	**TP1-OUT**	**RDL**	**QC Batch**
Metals									
Total Boron (B)	mg/L	0.081	ND	ND	0.012	0.022	0.017	0.010	3414308
Total Calcium (Ca)	mg/L	34	14	7.3	15	25	17	0.20	3414308
Total Iron (Fe)	mg/L	2.1	0.12	0.42	0.22	0.40	0.26	0.10	3414308
Total Magnesium (Mg)	mg/L	9.5	2.6	1.8	2.3	2.4	2.2	0.050	3414308
Total Potassium (K)	mg/L	45	2.4	0.73	2.3	2.3	2.4	0.20	3414308
Total Sodium (Na)	mg/L	7.0	13	0.99	3.6	12	8.8	0.10	3414308
Total Zinc (Zn)	mg/L	0.15	0.017	0.11	0.022	0.065	0.025	0.0050	3414308

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		TS7628		
Sampling Date		2013/10/31		
COC Number		420432-04-01		
	Units	**EPTS01**	**RDL**	**QC Batch**
Metals				
Total Boron (B)	mg/L	0.015	0.010	3414308
Total Calcium (Ca)	mg/L	79	0.20	3414308
Total Iron (Fe)	mg/L	ND	0.10	3414308
Total Magnesium (Mg)	mg/L	20	0.050	3414308
Total Potassium (K)	mg/L	1.4	0.20	3414308
Total Sodium (Na)	mg/L	19	0.10	3414308
Total Zinc (Zn)	mg/L	0.083	0.0050	3414308

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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City of Guelph
Attention: Amy Spence
Client Project #: Wet/Dry - Surface Water
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: MB3I8391

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3408640 NS1	QC Standard	Total Suspended Solids	2013/11/05		98	%	85 - 115
	Method Blank	Total Suspended Solids	2013/11/05	ND, RDL=1		mg/L	
	RPD	Total Suspended Solids	2013/11/05	11.8		%	25
3408774 YPA	Spiked Blank	Alkalinity (Total as CaCO3)	2013/11/03		95	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/11/03	1.4, RDL=1.0		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2013/11/03	0.2		%	25
3408776 YPA	Spiked Blank	Conductivity	2013/11/03		101	%	85 - 115
	Method Blank	Conductivity	2013/11/03	ND, RDL=1.0		umho/cm	
	RPD	Conductivity	2013/11/03	0.2		%	25
3408865 YPA	Spiked Blank	Alkalinity (Total as CaCO3)	2013/11/03		97	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/11/03	ND, RDL=1.0		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2013/11/03	1.4		%	25
3408870 YPA	Spiked Blank	Conductivity	2013/11/03		100	%	85 - 115
	Method Blank	Conductivity	2013/11/03	ND, RDL=1.0		umho/cm	
	RPD	Conductivity	2013/11/03	0.3		%	25
3409026 YPA	Spiked Blank	Alkalinity (Total as CaCO3)	2013/11/03		94	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/11/03	ND, RDL=1.0		mg/L	
	RPD [TS7623-01]	Alkalinity (Total as CaCO3)	2013/11/03	1.6		%	25
3409027 YPA	Spiked Blank	Conductivity	2013/11/03		101	%	85 - 115
	Method Blank	Conductivity	2013/11/03	ND, RDL=1.0		umho/cm	
	RPD [TS7623-01]	Conductivity	2013/11/03	0.08		%	25
3409053 ADB	Matrix Spike	Dissolved Chloride (Cl)	2013/11/04		NC	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2013/11/04		103	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2013/11/04	ND, RDL=1		mg/L	
	RPD	Dissolved Chloride (Cl)	2013/11/04	0.2		%	20
3409055 ADB	Matrix Spike	Dissolved Sulphate (SO4)	2013/11/04		NC	%	75 - 125
	Spiked Blank	Dissolved Sulphate (SO4)	2013/11/04		97	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2013/11/04	ND, RDL=1		mg/L	
	RPD	Dissolved Sulphate (SO4)	2013/11/04	0.5		%	20
3409558 HAL	QC Standard	Total BOD	2013/11/09		99	%	85 - 115
	Method Blank	Total BOD	2013/11/09	ND, RDL=2.0		mg/L	
	RPD	Total BOD	2013/11/09	NC		%	25
3409636 BMO	Matrix Spike	Phenols-4AAP	2013/11/05		96	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/11/05		98	%	85 - 115
	Method Blank	Phenols-4AAP	2013/11/05	ND, RDL=0.0010		mg/L	
	RPD	Phenols-4AAP	2013/11/05	NC		%	25
3409647 BMO	Matrix Spike [TS7622-06]	Phenols-4AAP	2013/11/06		100	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/11/06		99	%	85 - 115
	Method Blank	Phenols-4AAP	2013/11/06	ND, RDL=0.0010		mg/L	
	RPD [TS7622-06]	Phenols-4AAP	2013/11/06	NC (1)		%	25
3409657 BMO	Matrix Spike [TS7626-06]	Phenols-4AAP	2013/11/06		98	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/11/06		97	%	85 - 115
	Method Blank	Phenols-4AAP	2013/11/06	ND, RDL=0.0010		mg/L	
	RPD [TS7626-06]	Phenols-4AAP	2013/11/06	NC		%	25
3411743 CP	Matrix Spike	Total Chemical Oxygen Demand (COD)	2013/11/08		NC	%	75 - 125
	Spiked Blank	Total Chemical Oxygen Demand (COD)	2013/11/08		101	%	75 - 125
	Method Blank	Total Chemical Oxygen Demand (COD)	2013/11/08	ND, RDL=4.0		mg/L	
	RPD	Total Chemical Oxygen Demand (COD)	2013/11/08	3.0		%	25
3411754 COP	Matrix Spike	Total Ammonia-N	2013/11/06		97	%	80 - 120
	Spiked Blank	Total Ammonia-N	2013/11/06		102	%	85 - 115
	Method Blank	Total Ammonia-N	2013/11/06	ND, RDL=0.050		mg/L	
	RPD	Total Ammonia-N	2013/11/06	NC		%	20
3413207 VRO	Matrix Spike	Total Phosphorus	2013/11/07		100	%	80 - 120

City of Guelph
Attention: Amy Spence
Client Project #: Wet/Dry - Surface Water
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: MB3I8391

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3413207 VRO	QC Standard	Total Phosphorus	2013/11/07		105	%	80 - 120
	Spiked Blank	Total Phosphorus	2013/11/07		101	%	80 - 120
	Method Blank	Total Phosphorus	2013/11/07	ND, RDL=0.020		mg/L	
	RPD	Total Phosphorus	2013/11/07	9.1		%	20
3414308 PBA	Matrix Spike	Total Boron (B)	2013/11/08		NC	%	80 - 120
		Total Calcium (Ca)	2013/11/08		NC	%	80 - 120
		Total Iron (Fe)	2013/11/08		95	%	80 - 120
		Total Magnesium (Mg)	2013/11/08		97	%	80 - 120
		Total Potassium (K)	2013/11/08		NC	%	80 - 120
		Total Sodium (Na)	2013/11/08		NC	%	80 - 120
		Total Zinc (Zn)	2013/11/08		98	%	80 - 120
	Spiked Blank	Total Boron (B)	2013/11/08		101	%	80 - 120
		Total Calcium (Ca)	2013/11/08		100	%	80 - 120
		Total Iron (Fe)	2013/11/08		99	%	80 - 120
		Total Magnesium (Mg)	2013/11/08		103	%	80 - 120
		Total Potassium (K)	2013/11/08		97	%	80 - 120
		Total Sodium (Na)	2013/11/08		103	%	80 - 120
		Total Zinc (Zn)	2013/11/08		102	%	80 - 120
	Method Blank	Total Boron (B)	2013/11/08	ND, RDL=0.010		mg/L	
		Total Calcium (Ca)	2013/11/08	ND, RDL=0.20		mg/L	
		Total Iron (Fe)	2013/11/08	ND, RDL=0.10		mg/L	
		Total Magnesium (Mg)	2013/11/08	ND, RDL=0.050		mg/L	
		Total Potassium (K)	2013/11/08	ND, RDL=0.20		mg/L	
		Total Sodium (Na)	2013/11/08	ND, RDL=0.10		mg/L	
		Total Zinc (Zn)	2013/11/08	ND, RDL=0.0050		mg/L	
	RPD	Total Iron (Fe)	2013/11/11	1.3		%	20
		Total Zinc (Zn)	2013/11/11	1.4		%	20
3414393 C_N	Matrix Spike [TS7628-04]	Total Kjeldahl Nitrogen (TKN)	2013/11/07		101	%	80 - 120
	QC Standard	Total Kjeldahl Nitrogen (TKN)	2013/11/07		101	%	80 - 120
	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2013/11/07		93	%	80 - 120
	Method Blank	Total Kjeldahl Nitrogen (TKN)	2013/11/07	ND, RDL=0.10		mg/L	
	RPD [TS7628-04]	Total Kjeldahl Nitrogen (TKN)	2013/11/07	NC		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
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.
(1) Detection Limit was raised due to matrix interferences.

Validation Signature Page

Maxxam Job #: B3I8391

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

Cristina Carriere

Cristina Carriere, Scientific Services

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Your Project #: Wet/Dry - Surface Water
Site Location: SW WET/DRY
Your C.O.C. #: 42043205, 420432-05-01

Attention: Amy Spence
City of Guelph
Soild Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2013/11/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3K0878
Received: 2013/11/20, 16:45

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	5	N/A	2013/11/22	CAM SOP-00448	SM 2320B
Biochemical Oxygen Demand (BOD)	5	N/A	2013/11/27	CAM SOP-00427	APHA 5210B
Chloride by Automated Colourimetry	5	N/A	2013/11/22	CAM SOP-00463	EPA 325.2
Chemical Oxygen Demand	5	N/A	2013/11/25	CAM SOP-00416	APHA 5220D
Conductivity	5	N/A	2013/11/22	CAM SOP-00414	SM 2510
Total Metals Analysis by ICPMS	5	N/A	2013/11/26	CAM SOP-00447	EPA 6020
Total Ammonia-N	5	N/A	2013/11/25	CAM SOP-00441	US GS I-2522-90
pH	5	N/A	2013/11/22	CAM SOP-00413	SM 4500H+ B
Phenols (4AAP)	4	N/A	2013/11/25	CAM SOP-00444	MOE ROPHEN-E3179
Phenols (4AAP)	1	N/A	2013/11/26	CAM SOP-00444	MOE ROPHEN-E3179
Sulphate by Automated Colourimetry	5	N/A	2013/11/22	CAM SOP-00464	EPA 375.4
Total Kjeldahl Nitrogen in Water	5	2013/11/26	2013/11/26	CAM SOP-00454	EPA 351.2 Rev 2
Total Phosphorus (Colourimetric)	5	2013/11/25	2013/11/26	CAM SOP-00407	SM 4500 P,B,F
Low Level Total Suspended Solids	5	N/A	2013/11/22	CAM SOP-00428	SM 2540D

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

Encryption Key

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

James Aspin, Senior Project Manager
Email: JAspin@maxxam.ca
Phone# (905) 817-5771

==
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

Success Through Science®

City of Guelph

Maxxam Job #: B3K0878
Report Date: 2013/11/27

Client Project #: Wet/Dry - Surface Water
Site Location: SW WET/DRY
Sampler Initials: RS

RESULTS OF ANALYSES OF WATER

Maxxam ID		TZ0465			TZ0466		
Sampling Date		2013/11/19			2013/11/19		
COC Number		420432-05-01			420432-05-01		
	Units	**EPTS01**	**RDL**	**QC Batch**	**P1SW3**	**RDL**	**QC Batch**
Inorganics							
Total Ammonia-N	mg/L	0.086	0.050	3432525	3.1	0.050	3433917
Total BOD	mg/L	ND	2.0	3432212	330	2.0	3432212
Total Chemical Oxygen Demand (COD)	mg/L	8.0	4.0	3432515	1900	80	3432515
Conductivity	umho/cm	650	1.0	3431967	960	1.0	3431967
Total Kjeldahl Nitrogen (TKN)	mg/L	0.50	0.10	3435693	21	2.0	3435693
pH	pH	8.05		3431968	5.77		3431968
Phenols-4AAP	mg/L	ND	0.0010	3432108	0.34	0.10	3432108
Total Phosphorus	mg/L	ND	0.020	3434855	11	0.40	3434855
Total Suspended Solids	mg/L	ND	1	3431608	57	3	3431608
Dissolved Sulphate (SO4)	mg/L	13	1	3431970	ND (1)	20	3431970
Alkalinity (Total as CaCO3)	mg/L	270	1.0	3431966	160	1.0	3431966
Dissolved Chloride (Cl)	mg/L	34	1	3431969	87 (1)	20	3431969

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Due to colour interferences, sample required dilution. Detection limit was adjusted accordingly.

Maxxam

Maxxam Job #: B3K0878
Report Date: 2013/11/27

City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: SW WET/DRY
Sampler Initials: RS

RESULTS OF ANALYSES OF WATER

Maxxam ID		TZ0467			TZ0468	TZ0469		
Sampling Date		2013/11/19			2013/11/19	2013/11/19		
COC Number		420432-05-01			420432-05-01	420432-05-01		
	Units	**P1SW2**	**RDL**	**QC Batch**	**TP1-IN**	**TP1-OUT**	**RDL**	**QC Batch**
Inorganics								
Total Ammonia-N	mg/L	ND	0.050	3432525	ND	ND	0.050	3432525
Total BOD	mg/L	19	2.0	3432212	3.0	ND	2.0	3432212
Total Chemical Oxygen Demand (COD)	mg/L	47	4.0	3432515	53	25	4.0	3432515
Conductivity	umho/cm	1300	1.0	3431967	780	440	1.0	3432783
Total Kjeldahl Nitrogen (TKN)	mg/L	2.2	0.50	3435693	2.1	0.67	0.10	3435693
pH	pH	7.97		3431968	8.01	7.82		3432782
Phenols-4AAP	mg/L	0.0012	0.0010	3433985	ND	ND	0.0010	3432108
Total Phosphorus	mg/L	0.34	0.020	3434855	0.17	0.038	0.020	3434855
Total Suspended Solids	mg/L	41	1	3431608	13	2	1	3431608
Dissolved Sulphate (SO4)	mg/L	7	1	3431970	5	15	1	3431970
Alkalinity (Total as CaCO3)	mg/L	320	1.0	3431966	320	160	1.0	3432776
Dissolved Chloride (Cl)	mg/L	220	3	3431969	62	30	1	3431969

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

City of Guelph
Maxxam Job #: B3K0878
Report Date: 2013/11/27
Client Project #: Wet/Dry - Surface Water
Site Location: SW WET/DRY
Sampler Initials: RS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		TZ0465	TZ0466	TZ0467	TZ0468	TZ0469		
Sampling Date		2013/11/19	2013/11/19	2013/11/19	2013/11/19	2013/11/19		
COC Number		420432-05-01	420432-05-01	420432-05-01	420432-05-01	420432-05-01		
	Units	**EPTS01**	**P1SW3**	**P1SW2**	**TP1-IN**	**TP1-OUT**	**RDL**	**QC Batch**
Metals								
Total Boron (B)	mg/L	0.020	0.18	0.022	0.021	0.022	0.010	3435151
Total Calcium (Ca)	mg/L	85	86	82	94	52	0.20	3435151
Total Iron (Fe)	mg/L	ND	5.0	3.2	3.6	0.12	0.10	3435151
Total Magnesium (Mg)	mg/L	23	28	20	20	8.9	0.050	3435151
Total Potassium (K)	mg/L	1.7	130	6.5	2.9	3.9	0.20	3435151
Total Sodium (Na)	mg/L	23	22	140	56	28	0.10	3435151
Total Zinc (Zn)	mg/L	0.086	0.20	0.12	0.14	0.011	0.0050	3435151

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

GENERAL COMMENTS

Results relate only to the items tested.

City of Guelph
Attention: Amy Spence
Client Project #: Wet/Dry - Surface Water
P.O. #:
Site Location: SW WET/DRY

Quality Assurance Report

Maxxam Job Number: MB3K0878

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3431608 SUP	QC Standard	Total Suspended Solids	2013/11/22		98	%	85 - 115
	Method Blank	Total Suspended Solids	2013/11/22	ND, RDL=1		mg/L	
	RPD [TZ0465-03]	Total Suspended Solids	2013/11/22	NC		%	25
3431966 SAU	Spiked Blank	Alkalinity (Total as CaCO3)	2013/11/22		96	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/11/22	ND, RDL=1.0		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2013/11/22	1.9		%	25
3431967 SAU	Spiked Blank	Conductivity	2013/11/22		101	%	85 - 115
	Method Blank	Conductivity	2013/11/22	1.2, RDL=1.0		umho/cm	
	RPD	Conductivity	2013/11/22	0		%	25
3431969 ADB	Matrix Spike	Dissolved Chloride (Cl)	2013/11/22		103	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2013/11/22		103	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2013/11/22	ND, RDL=1		mg/L	
	RPD	Dissolved Chloride (Cl)	2013/11/22	0.6		%	20
3431970 ADB	Matrix Spike	Dissolved Sulphate (SO4)	2013/11/22		NC	%	75 - 125
	Spiked Blank	Dissolved Sulphate (SO4)	2013/11/22		100	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2013/11/22	ND, RDL=1		mg/L	
	RPD	Dissolved Sulphate (SO4)	2013/11/22	0.6		%	20
3432108 LHA	Matrix Spike	Phenols-4AAP	2013/11/25		NC	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/11/25		95	%	85 - 115
	Method Blank	Phenols-4AAP	2013/11/25	ND, RDL=0.0010		mg/L	
	RPD	Phenols-4AAP	2013/11/25	NC		%	25
3432212 HTR	QC Standard	Total BOD	2013/11/27		99	%	85 - 115
	Method Blank	Total BOD	2013/11/27	ND, RDL=2.0		mg/L	
	RPD	Total BOD	2013/11/27	NC		%	25
3432515 CP	Matrix Spike	Total Chemical Oxygen Demand (COD)	2013/11/25		NC	%	75 - 125
	Spiked Blank	Total Chemical Oxygen Demand (COD)	2013/11/25		102	%	75 - 125
	Method Blank	Total Chemical Oxygen Demand (COD)	2013/11/25	ND, RDL=4.0		mg/L	
	RPD	Total Chemical Oxygen Demand (COD)	2013/11/25	0.2		%	25
3432525 COP	Matrix Spike [TZ0465-04]	Total Ammonia-N	2013/11/25		99	%	80 - 120
	Spiked Blank	Total Ammonia-N	2013/11/25		99	%	85 - 115
	Method Blank	Total Ammonia-N	2013/11/25	ND, RDL=0.050		mg/L	
	RPD [TZ0465-04]	Total Ammonia-N	2013/11/25	NC		%	20
3432776 SAU	Spiked Blank	Alkalinity (Total as CaCO3)	2013/11/22		96	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2013/11/22	ND, RDL=1.0		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2013/11/23	0.5		%	25
3432783 SAU	Spiked Blank	Conductivity	2013/11/22		102	%	85 - 115
	Method Blank	Conductivity	2013/11/22	1.0, RDL=1.0		umho/cm	
	RPD	Conductivity	2013/11/23	0.2		%	25
3433917 COP	Matrix Spike	Total Ammonia-N	2013/11/25		104	%	80 - 120
	Spiked Blank	Total Ammonia-N	2013/11/25		98	%	85 - 115
	Method Blank	Total Ammonia-N	2013/11/25	ND, RDL=0.050		mg/L	
	RPD	Total Ammonia-N	2013/11/25	NC		%	20
3433985 BMO	Matrix Spike	Phenols-4AAP	2013/11/26		95	%	80 - 120
	Spiked Blank	Phenols-4AAP	2013/11/26		100	%	85 - 115
	Method Blank	Phenols-4AAP	2013/11/26	ND, RDL=0.0010		mg/L	
	RPD	Phenols-4AAP	2013/11/26	NC		%	25
3434855 VRO	Matrix Spike	Total Phosphorus	2013/11/26		100	%	80 - 120
	QC Standard	Total Phosphorus	2013/11/26		105	%	80 - 120
	Spiked Blank	Total Phosphorus	2013/11/26		98	%	80 - 120
	Method Blank	Total Phosphorus	2013/11/26	0.021, RDL=0.020		mg/L	
	RPD	Total Phosphorus	2013/11/26	0.4		%	20
3435151 HRE	Matrix Spike	Total Boron (B)	2013/11/26		107	%	80 - 120
		Total Calcium (Ca)	2013/11/26		NC	%	80 - 120
		Total Iron (Fe)	2013/11/26		105	%	80 - 120

City of Guelph
Attention: Amy Spence
Client Project #: Wet/Dry - Surface Water
P.O. #:
Site Location: SW WET/DRY

Quality Assurance Report (Continued)

Maxxam Job Number: MB3K0878

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3435151 HRE	Matrix Spike	Total Magnesium (Mg)	2013/11/26		NC	%	80 - 120
		Total Potassium (K)	2013/11/26		97	%	80 - 120
		Total Sodium (Na)	2013/11/26		NC	%	80 - 120
		Total Zinc (Zn)	2013/11/26		103	%	80 - 120
	Spiked Blank	Total Boron (B)	2013/11/26		110	%	80 - 120
		Total Calcium (Ca)	2013/11/26		110	%	80 - 120
		Total Iron (Fe)	2013/11/26		109	%	80 - 120
		Total Magnesium (Mg)	2013/11/26		110	%	80 - 120
		Total Potassium (K)	2013/11/26		101	%	80 - 120
		Total Sodium (Na)	2013/11/26		108	%	80 - 120
		Total Zinc (Zn)	2013/11/26		108	%	80 - 120
	Method Blank	Total Boron (B)	2013/11/26	ND, RDL=0.010		mg/L	
		Total Calcium (Ca)	2013/11/26	ND, RDL=0.20		mg/L	
		Total Iron (Fe)	2013/11/26	ND, RDL=0.10		mg/L	
		Total Magnesium (Mg)	2013/11/26	ND, RDL=0.050		mg/L	
		Total Potassium (K)	2013/11/26	ND, RDL=0.20		mg/L	
		Total Sodium (Na)	2013/11/26	ND, RDL=0.10		mg/L	
		Total Zinc (Zn)	2013/11/26	ND, RDL=0.0050		mg/L	
	RPD	Total Boron (B)	2013/11/26	2.3		%	20
		Total Calcium (Ca)	2013/11/26	0.5		%	20
		Total Iron (Fe)	2013/11/26	NC		%	20
		Total Magnesium (Mg)	2013/11/26	0.1		%	20
		Total Potassium (K)	2013/11/26	0.7		%	20
		Total Sodium (Na)	2013/11/26	0.5		%	20
		Total Zinc (Zn)	2013/11/26	2.8		%	20
3435693 C_N	Matrix Spike	Total Kjeldahl Nitrogen (TKN)	2013/11/26		NC	%	80 - 120
	QC Standard	Total Kjeldahl Nitrogen (TKN)	2013/11/26		104	%	80 - 120
	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2013/11/26		105	%	80 - 120
	Method Blank	Total Kjeldahl Nitrogen (TKN)	2013/11/26	0.11, RDL=0.10		mg/L	
	RPD	Total Kjeldahl Nitrogen (TKN)	2013/11/26	1.6		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
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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 #: B3K0878

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

Cristina Carriere

Cristina Carriere, Scientific Services

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Success Through Science®

Your Project #: Wet/Dry - Surface Water
Site Location: DECEMBER SW
Your C.O.C. #: 42043206, 420432-06-01

Attention:Amy Spence

City of Guelph
Soild Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2013/12/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3L1855
Received: 2013/12/06, 16:45

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity	4	N/A	2013/12/09	CAM SOP-00448	SM 2320B
Biochemical Oxygen Demand (BOD)	4	N/A	2013/12/14	CAM SOP-00427	APHA 5210B
Chloride by Automated Colourimetry	4	N/A	2013/12/09	CAM SOP-00463	EPA 325.2
Chemical Oxygen Demand	4	N/A	2013/12/11	CAM SOP-00416	APHA 5220D
Conductivity	4	N/A	2013/12/09	CAM SOP-00414	SM 2510
Total Metals Analysis by ICPMS	4	N/A	2013/12/11	CAM SOP-00447	EPA 6020
Total Ammonia-N	3	N/A	2013/12/10	CAM SOP-00441	US GS I-2522-90
Total Ammonia-N	1	N/A	2013/12/11	CAM SOP-00441	US GS I-2522-90
pH	4	N/A	2013/12/09	CAM SOP-00413	SM 4500H+ B
Phenols (4AAP)	4	N/A	2013/12/12	CAM SOP-00444	MOE ROPHEN-E3179
Sulphate by Automated Colourimetry	4	N/A	2013/12/09	CAM SOP-00464	EPA 375.4
Total Kjeldahl Nitrogen in Water	4	2013/12/11	2013/12/11	CAM SOP-00454	EPA 351.2 Rev 2
Total Phosphorus (Colourimetric)	4	2013/12/10	2013/12/11	CAM SOP-00407	SM 4500 P,B,F
Low Level Total Suspended Solids	4	N/A	2013/12/09	CAM SOP-00428	SM 2540D

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

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
James Aspin, Senior Project Manager
Email: JAspin@maxxam.ca
Phone# (905)817-5771
==
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City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: DECEMBER SW
Sampler Initials: RS

RESULTS OF ANALYSES OF WATER

Maxxam ID		UE9090			UE9091		
Sampling Date		2013/12/05			2013/12/05		
COC Number		420432-06-01			420432-06-01		
	Units	**P1SW3**	**RDL**	**QC Batch**	**TP1-IN**	**RDL**	**QC Batch**
Inorganics							
Total Ammonia-N	mg/L	1.3	0.050	3452583	0.24	0.050	3451506
Total BOD	mg/L	90	2.0	3450890	3.0	2.0	3450890
Total Chemical Oxygen Demand (COD)	mg/L	400	20	3451534	34	4.0	3451534
Conductivity	umho/cm	1900	1.0	3450190	420	1.0	3450190
Total Kjeldahl Nitrogen (TKN)	mg/L	10	2.0	3453565	1.3	0.10	3453565
pH	pH	6.73		3450189	7.51		3450189
Phenols-4AAP	mg/L	0.19	0.10	3450188	0.0039	0.0010	3450188
Total Phosphorus	mg/L	2.6	0.20	3452536	0.21	0.040	3452536
Total Suspended Solids	mg/L	130	20	3450341	32	1	3450331
Dissolved Sulphate (SO4)	mg/L	22	1	3450174	3	1	3450174
Alkalinity (Total as CaCO3)	mg/L	84	1.0	3450191	150	1.0	3450191
Dissolved Chloride (Cl)	mg/L	480	7	3450173	38	1	3450173

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		UE9092		UE9093		
Sampling Date		2013/12/05		2013/12/05		
COC Number		420432-06-01		420432-06-01		
	Units	**TP1-OUT**	**QC Batch**	**EPT S01**	**RDL**	**QC Batch**
Inorganics						
Total Ammonia-N	mg/L	0.28	3451506	0.10	0.050	3451506
Total BOD	mg/L	ND	3450890	ND	2.0	3450890
Total Chemical Oxygen Demand (COD)	mg/L	15	3451534	ND	4.0	3451534
Conductivity	umho/cm	380	3450190	660	1.0	3450190
Total Kjeldahl Nitrogen (TKN)	mg/L	0.71	3453565	0.32	0.10	3453565
pH	pH	7.81	3450189	7.87		3450189
Phenols-4AAP	mg/L	0.0027	3450188	ND	0.0010	3450188
Total Phosphorus	mg/L	0.049	3452536	ND	0.020	3452536
Total Suspended Solids	mg/L	2	3450341	ND	1	3449860
Dissolved Sulphate (SO4)	mg/L	18	3450174	14	1	3450174
Alkalinity (Total as CaCO3)	mg/L	130	3450191	270	1.0	3450191
Dissolved Chloride (Cl)	mg/L	30	3450173	36	1	3450173

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Success Through Science®

Maxxam Job #: B3L1855
Report Date: 2013/12/16

City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: DECEMBER SW
Sampler Initials: RS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		UE9090	UE9091	UE9092	UE9093		
Sampling Date		2013/12/05	2013/12/05	2013/12/05	2013/12/05		
COC Number		420432-06-01	420432-06-01	420432-06-01	420432-06-01		
	Units	**P1SW3**	**TP1-IN**	**TP1-OUT**	**EPT S01**	**RDL**	**QC Batch**
Metals							
Total Boron (B)	mg/L	0.040	ND	0.012	0.012	0.010	3453665
Total Calcium (Ca)	mg/L	28	51	44	80	0.20	3453665
Total Iron (Fe)	mg/L	2.4	0.55	0.66	ND	0.10	3453665
Total Magnesium (Mg)	mg/L	7.5	9.0	6.5	22	0.050	3453665
Total Potassium (K)	mg/L	28	2.1	2.9	1.5	0.20	3453665
Total Sodium (Na)	mg/L	360	35	25	21	0.10	3453665
Total Zinc (Zn)	mg/L	0.18	0.033	0.010	0.099	0.0050	3453665

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam Job #: B3L1855
Report Date: 2013/12/16

City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: DECEMBER SW
Sampler Initials: RS

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam

Maxxam Job #: B3L1855
Report Date: 2013/12/16

City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: DECEMBER SW
Sampler Initials: RS

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3449860	MMJ	QC Standard	Total Suspended Solids	2013/12/09		99	%	85 - 115
3449860	MMJ	Method Blank	Total Suspended Solids	2013/12/09	ND, RDL=1		mg/L	
3449860	MMJ	RPD [UE9093-03]	Total Suspended Solids	2013/12/09	NC		%	25
3450173	ADB	Matrix Spike	Dissolved Chloride (Cl)	2013/12/09		NC	%	80 - 120
3450173	ADB	Spiked Blank	Dissolved Chloride (Cl)	2013/12/09		103	%	80 - 120
3450173	ADB	Method Blank	Dissolved Chloride (Cl)	2013/12/09	ND, RDL=1		mg/L	
3450173	ADB	RPD	Dissolved Chloride (Cl)	2013/12/09	0.5		%	20
3450174	ADB	Matrix Spike	Dissolved Sulphate (SO4)	2013/12/09		NC	%	75 - 125
3450174	ADB	Spiked Blank	Dissolved Sulphate (SO4)	2013/12/09		102	%	80 - 120
3450174	ADB	Method Blank	Dissolved Sulphate (SO4)	2013/12/09	ND, RDL=1		mg/L	
3450174	ADB	RPD	Dissolved Sulphate (SO4)	2013/12/09	3.2		%	20
3450188	BMO	Matrix Spike	Phenols-4AAP	2013/12/12		102	%	80 - 120
3450188	BMO	Spiked Blank	Phenols-4AAP	2013/12/12		102	%	85 - 115
3450188	BMO	Method Blank	Phenols-4AAP	2013/12/12	ND, RDL=0.0010		mg/L	
3450188	BMO	RPD	Phenols-4AAP	2013/12/12	NC		%	25
3450190	SAU	Spiked Blank	Conductivity	2013/12/09		101	%	85 - 115
3450190	SAU	Method Blank	Conductivity	2013/12/09	ND, RDL=1.0		umho/cm	
3450190	SAU	RPD	Conductivity	2013/12/09	0		%	25
3450191	SAU	Spiked Blank	Alkalinity (Total as CaCO3)	2013/12/09		100	%	85 - 115
3450191	SAU	Method Blank	Alkalinity (Total as CaCO3)	2013/12/09	ND, RDL=1.0		mg/L	
3450191	SAU	RPD	Alkalinity (Total as CaCO3)	2013/12/09	0.4		%	25
3450331	MMJ	QC Standard	Total Suspended Solids	2013/12/09		100	%	85 - 115
3450331	MMJ	Method Blank	Total Suspended Solids	2013/12/09	ND, RDL=1		mg/L	
3450331	MMJ	RPD	Total Suspended Solids	2013/12/09	NC		%	25
3450341	NS1	QC Standard	Total Suspended Solids	2013/12/09		98	%	85 - 115
3450341	NS1	Method Blank	Total Suspended Solids	2013/12/09	ND, RDL=1		mg/L	
3450341	NS1	RPD [UE9092-03]	Total Suspended Solids	2013/12/09	NC		%	25
3450890	FZH	QC Standard	Total BOD	2013/12/14		90	%	85 - 115
3450890	FZH	Method Blank	Total BOD	2013/12/14	ND, RDL=2.0		mg/L	
3450890	FZH	RPD	Total BOD	2013/12/14	NC		%	25
3451506	AHA	Matrix Spike	Total Ammonia-N	2013/12/10		101	%	80 - 120
3451506	AHA	Spiked Blank	Total Ammonia-N	2013/12/10		105	%	85 - 115
3451506	AHA	Method Blank	Total Ammonia-N	2013/12/10	ND, RDL=0.050		mg/L	
3451506	AHA	RPD	Total Ammonia-N	2013/12/10	NC		%	20
3451534	CP	Matrix Spike [UE9092-04]	Total Chemical Oxygen Demand (COD)	2013/12/11		101	%	75 - 125
3451534	CP	Spiked Blank	Total Chemical Oxygen Demand (COD)	2013/12/11		101	%	75 - 125
3451534	CP	Method Blank	Total Chemical Oxygen Demand (COD)	2013/12/11	ND, RDL=4.0		mg/L	
3451534	CP	RPD [UE9092-04]	Total Chemical Oxygen Demand (COD)	2013/12/11	NC		%	25
3452536	VRO	Matrix Spike	Total Phosphorus	2013/12/11		100	%	80 - 120
3452536	VRO	QC Standard	Total Phosphorus	2013/12/11		100	%	80 - 120
3452536	VRO	Spiked Blank	Total Phosphorus	2013/12/11		100	%	80 - 120
3452536	VRO	Method Blank	Total Phosphorus	2013/12/11	0.021, RDL=0.020		mg/L	
3452536	VRO	RPD	Total Phosphorus	2013/12/11	NC		%	20
3452583	AHA	Matrix Spike	Total Ammonia-N	2013/12/11		102	%	80 - 120
3452583	AHA	Spiked Blank	Total Ammonia-N	2013/12/11		103	%	85 - 115
3452583	AHA	Method Blank	Total Ammonia-N	2013/12/11	ND, RDL=0.050		mg/L	
3452583	AHA	RPD	Total Ammonia-N	2013/12/11	NC		%	20
3453565	C_N	Matrix Spike [UE9093-04]	Total Kjeldahl Nitrogen (TKN)	2013/12/11		94	%	80 - 120
3453565	C_N	QC Standard	Total Kjeldahl Nitrogen (TKN)	2013/12/11		100	%	80 - 120
3453565	C_N	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2013/12/11		97	%	80 - 120
3453565	C_N	Method Blank	Total Kjeldahl Nitrogen (TKN)	2013/12/11	ND, RDL=0.10		mg/L	
3453565	C_N	RPD [UE9093-04]	Total Kjeldahl Nitrogen (TKN)	2013/12/11	NC		%	20
3453665	HRE	Matrix Spike	Total Boron (B)	2013/12/11		106	%	80 - 120
			Total Calcium (Ca)	2013/12/11		NC	%	80 - 120
			Total Iron (Fe)	2013/12/11		99	%	80 - 120
			Total Magnesium (Mg)	2013/12/11		102	%	80 - 120
			Total Potassium (K)	2013/12/11		100	%	80 - 120
			Total Sodium (Na)	2013/12/11		NC	%	80 - 120
			Total Zinc (Zn)	2013/12/11		105	%	80 - 120
3453665	HRE	Spiked Blank	Total Boron (B)	2013/12/11		108	%	80 - 120
			Total Calcium (Ca)	2013/12/11		102	%	80 - 120
			Total Iron (Fe)	2013/12/11		100	%	80 - 120

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Maxxam Job #: B3L1855
Report Date: 2013/12/16

City of Guelph
Client Project #: Wet/Dry - Surface Water
Site Location: DECEMBER SW
Sampler Initials: RS

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Total Magnesium (Mg)	2013/12/11		103	%	80 - 120
			Total Potassium (K)	2013/12/11		101	%	80 - 120
			Total Sodium (Na)	2013/12/11		102	%	80 - 120
			Total Zinc (Zn)	2013/12/11		108	%	80 - 120
3453665	HRE	Method Blank	Total Boron (B)	2013/12/12	ND, RDL=0.010		mg/L	
			Total Calcium (Ca)	2013/12/12	ND, RDL=0.20		mg/L	
			Total Iron (Fe)	2013/12/12	ND, RDL=0.10		mg/L	
			Total Magnesium (Mg)	2013/12/12	ND, RDL=0.050		mg/L	
			Total Potassium (K)	2013/12/12	ND, RDL=0.20		mg/L	
			Total Sodium (Na)	2013/12/12	ND, RDL=0.10		mg/L	
			Total Zinc (Zn)	2013/12/12	ND, RDL=0.0050		mg/L	
3453665	HRE	RPD	Total Iron (Fe)	2013/12/11	NC		%	20
			Total Zinc (Zn)	2013/12/11	0.9		%	20

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

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

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Maxxam Job #: B3L1855
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City of Guelph
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VALIDATION SIGNATURE PAGE

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

Brad Newman, Scientific Specialist

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Appendix E

Certificate of Approval – WRIC and Transfer Station

Ministry of the Environment
Ministère de l'Environnement

AMENDED PROVISIONAL CERTIFICATE OF APPROVAL
WASTE DISPOSAL SITE
NUMBER A170128
Issue Date: February 10, 2011

The Corporation of the City of Guelph
1 Carden St
Guelph, Ontario
N1H 3A1

Site Location: 110 Dunlop Drive
Guelph City, County of Wellington
N1H 6N1

You have applied in accordance with Section 27 of the Environmental Protection Act for approval of:

the establishment and operation of a Waste Disposal Site (Transfer and Processing) consisting of a 29.54 hectare of property for the purposes of composting, multi-material recovery, and waste transfer to serve the municipalities and businesses of the Province of Ontario and *Municipal Hazardous and Special Waste Transfer Station* serving the County of Wellington and City of Guelph,

to be used for:

a) the use and operation of an Organic Waste Processing Facility composting of the following categories of waste *(Note: Use of the site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval);* organic non-hazardous waste from residential, industrial, commercial and institutional sources limited to a maximum Site indoor storage capacity of 8,500 tonnes;

b) the use and operation of a *Material Recovery Facility* for processing, transfer and temporary storage of the following categories of waste *(Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval);* municipal waste including food and beverage cans, cardboard, glass, newspaper, plastic, waste electrical and electronic equipment and other such materials as would be collected by means of the source separated *dry waste* collection system limited to a maximum indoor storage capacity of 3850 tonnes and having an outdoor storage area for recyclable waste and *leaf and yard waste* that is located to the west of the Organic Waste Processing Facility;

c) the use and operation of a Municipal Hazardous and Special Waste facility for the transfer and temporary storage of the following categories of waste *(Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); Municipal Hazardous and Special Waste* limited to the following waste classes; 112, 121, 145, 146, 148, 212, 213, 221, 242, 251, 252, 261, 263, 269, 312, and 331 as outlined in the New Ontario Waste Classes January 1986 limited to a maximum Site storage capacity of 15 tonnes; and

d) the use and operation of a Waste Disposal Site (Transfer) for non-hazardous solid industrial waste *(Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval);*from industrial, commercial and institutional sources, commercial waste and domestic waste, with an indoor storage maximum capacity of 795 tonnes and outdoor storage areas for *leaf and yard waste* and for recyclable waste.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

(a) "**Act**" means the *Environmental Protection Act*, R.S.O. 1990, C.E-19, as amended;

(b) "**Air Pollution Control Equipment**" means the air pollution control equipment to abate emissions to the atmosphere originating from the *Processing Building;*

(c) "**Amendment Materials**" means the materials derived from plants or animals, including materials consisting of other compounds of carbon, all readily biodegradable, and limited to materials listed in Condition 54.(2) of this Certificate;

(d) "**birds**" means pigeons, gulls, terns, crows, hawks, ducks, geese or any other birds that create a hazard to aircraft;

(e) "**brush**" means tree limbs, natural Christmas trees or other woody materials;

(f) “**Certificate**” means this entire provisional Certificate of Approval document, issued in accordance with section 39 of the *Act*, and includes any schedules to it, the application and the supporting documentation listed in schedule "A;

(g) "**Certificate of Approval (Air/Noise)**" means the Certificate of Approval issued under section 9 of the *EPA* for this Composting Site;

(h) "**City**" means the Corporation of the City of Guelph;

(i) "**Clean Wood**" means wood that is not painted wood, treated w*ood or laminated wood. Clean Wood does not include wood waste or waste wood;*

(j) **"Competent Person**” **or "Competent People"** means a person or people who has/have training and knowledge of the following:

i. relevant waste management legislation, regulations and guidelines;
ii. major environmental concerns pertaining to the waste to be handled;
iii. contents of the *Facility's* Design and Operating Report;
iv. the terms, conditions and operating requirements of the *Certificate;*
v. the applicable Fire Code and how it applies to proper storage and handling of waste that may be reactive, oxidizing, explosive or flammable;
vi. the *WRIC Environmental Emergency Plan,* including exit locations and evacuation routing, and location of relevant equipment available for emergency situations;
vii. procedures for recording and responding to public complaints;
viii. record keeping procedures as outlined in Conditions 51 and 63 of this *Certificate;*
ix. occupational health and safety concerns pertaining to the wastes to be processed;
x. specific written procedures for the control of nuisance conditions;
xi. operation and management of the *Site,* in accordance with the specific job requirements of each individual operator;
xii. procedures for the identification and refusal of unacceptable wastes;
xiii. proper handling of waste, and
xiv. proper procedures for the storage of waste and proper maintenance of the *Site;*

(k) "**Compost**" means the material produced by an aerobic Composting of the Organic Waste and which has been tested to show compliance with the Compost quality criteria listed in Schedule B of this *Certificate* and can be used as a soil additive or for other similar uses. Compost is not considered a waste;

(l) "**Composting**" means an aerobic biological process, conducted under controlled engineered conditions designed to decompose and stabilize organic matter; simple exposure of organic matter under non-engineered conditions resulting in uncontrolled decay is not considered Composting;

(m) "**Composting Residual Waste**" means waste resulting from the Organic Waste processing activities at the *Composting Site* and the waste that cannot be Composted and that is destined for final disposal;

(n) "**Composting Site**" means the Organic Waste Composting Site, which is a part of the waste disposal site located at 110 Dunlop Drive in the City of Guelph, approved in this *Certificate* and as described and referred to in Items #32 to #47 of the attached Schedule"A";

(o) "**Current Design and Operations Report**" or **"Current Design and Operations Reports"** means the Design and Operations Report or the Design and Operations Reports that is/are referenced in Items 49, 50, and/or 51 of Schedule "A" of this *Certificate* or the most recent Design and Operations Report that the Owner has submitted to the Ministry in accordance with Condition 68(4) of this *Certificate*;

(p) "**Director**" means any Ministry employee appointed in writing by the Minister pursuant to section 5 of the *Act* as a Director for the purposes of Part V of the *Act*;

(q) "**District Manager**" means the District Manager of the of the Guelph District Office of the Ministry;

(r) "**District Office**" means the local office of the Ministry in which the Site is geographically located;

(s) "**dry waste**" means those waste materials not identified in the wet and household hazardous waste streams;

(t) "**Engineer's Report**" means a report prepared under the direction of and signed by an Independent Professional Engineer that sets out the *Operating Envelope;*

(u) "**Finished Compost**" means the Organic Waste that has been Composted and fully cured and is considered ready for sampling and testing for compliance with the *Compost* quality criteria. Finished Compost is considered a waste until testing for the *Compost* quality criteria is completed and compliance with the criteria is demonstrated;

(v) "**Immature Compost**" means the Organic Waste which has been Composted in the aerate *Composting* tunnels and screened within the confines of the *Processing Building*. Composted Organic Waste is considered an Immature Compost until it has been fully cured and is ready for compliance testing for *Compost* quality criteria. Immature Compost is considered a waste;

(w) "**incident**" means an abnormal event which causes a spill, emission, emergency situation or other occurrences which may have an adverse effect on the environment, cause a nuisance or endanger public health and safety;

(x) "**Independent Professional Engineer**" means a Professional Engineer licensed to Practice in the Province of Ontario and who is not an employee of the Owner;

(y) "**Infrastructure**" means the structural elements that are used at the waste disposal site approved by this *Certificate* including buildings, structures, grounds and utilities;

(z) "**leaf and yard waste**" means waste consisting of leaves, grass clippings and other plant materials but not tree limbs or other woody materials;

(aa) "**Material Recovery Facility**" or "**MRF"** means the facility where *dry waste* is received, processed and stored, and includes the material recovery building and an outside storage area;

(bb) "**Ministry**" means the Ontario Ministry of the Environment and includes all officials, employees or other persons acting on its behalf;

(cc) "**Modifications**" means a change to the waste disposal site identified in the Engineer's Report and approved by this *Certificate* including changes to how the *Site* is used, operated, altered or enlarged;

(dd) **"Municipality"** means The Corporation of the City of Guelph, and includes its officers, employees, agents and contractors;

(ee) ***"Municipal Hazardous and Special Waste"*** **and the acronym** ***"MHSW"*** means hazardous waste or special waste generated by households located in the geographic boundaries of the City of Guelph and County of Wellington that fall within waste numbers 112, 121, 145, 146, 148, 212, 213, 221, 242, 251, 252, 261, 263, 269, 312, and 331 as outlined in the New Ontario Waste Classes, January 1996. as defined in Ontario Regulation 347; and also includes wet cell batteries and small dry cell batteries, household cleaners and detergents, aerosols, waxes and polishes, fluorescent tubes and energy efficient light bulbs and mercury switches and thermostats;

(ff) "**Municipal Hazardous and Special Waste Transfer Station**" or **"MHSW Waste Transfer Station"** means the location where the *MHSW* waste is received, bulked, packed, stored and transferred to recyclers and/or to final disposal;

(gg) "***NMA***" means *Nutrient Management Act*, 2002, S.O. 2002, c. 4, as amended from time to time;

(hh) "**Ontario Regulation 347** and ***O. Reg. 347***" means Ontario Regulation 347, R.R.O. 1990, General - Waste Management, made under the *Act*, as amended from time to time;

(ii) "**Ontario Regulation 362**" means Ontario Regulation 362 - R.R.O. 1990, Waste Management PCBs, or as amended, made under the *Act*;

(jj) "**Ontario Regulation 903**" means Ontario Regulation 903 – R.R.O. 1990, Wells, amended to Ontario Regulation 128/03, made under the *OWRA*;

(kk) "**Operating Envelope**" means the limits on the pre-approved *Modifications* that the *Owner* may make to the *Site* without further amendment to the *Certificate*;

(ll) "**Organic Waste**" means solid non-hazardous waste derived from plants or animals, including wastes consisting of other compounds of carbon, all readily biodegradable, and limited to wastes listed in Condition 54 of this *Certificate*;

(mm) "**Owner**" means any person that is responsible for the establishment and operation of the *Site* being approved by this *Certificate*, and includes The Corporation of the City of Guelph**,** its successors and assigns;

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

(oo) "***PA***" means the *Pesticides Act*, R.S.O. 1990, c. P-11, as amended from time to time;

(pp) "**PCB**", " **PCB waste"** and "**PCBs"** means any monochlorinated or polychlorinated biphenyl or any mixture of them or mixture that contains one or more of them;

(qq) "**Processing Building**" means the building at the *Composting Site* where the *Organic Waste* is received, pre-processed, Composted, screened and cured;

(rr) "**Provincial Officer**" means any person designated in writing by the Minister as a provincial officer pursuant to Section 5 of the *OWRA* or Section 5 of the *EPA* or Section 17 of the *PA* or Section 4 of the *NMA* or Section 8 of *SDWA;*

(ss) "**Public Liaison Committee**" and **"ToR PLC"** and ***PLC"*** :means the committee referred to in Conditions 29, and 30 that is established to monitor the construction and operation of any activity at the *Site;*

(tt) "**putrescible waste**" means solid waste that contains organic matter capable of being decomposed by microorganisms;

(uu) "**Rejected Waste**" means the load of incoming waste received at the *Composting Site* and deemed by *Owner* to contain waste that does not meet the incoming *Organic Waste* quality criteria set out in this *Certificate* or that cannot be Composted;

(vv) "**residual waste**" means waste resulting from the operations at the *Site* and directed for disposal;

(ww) **"residual waste (Processing Building)"** means waste resulting from the Organic Waste processing activities at the *Composting Site* and the waste that cannot be Composted and that is destined for final disposal;

(xx) "**Re-Start-up**" means resumption of the *Organic Waste* processing activities at the *Composting Site* following suspension of operations or a long duration power failure at the *Composting Site*;

(yy) **"small generators"** means small sources of waste of unknown origin that the City manages as a result of improper or illegal disposal of waste within the City of Guelph and is/are less than 500 kg of solid, non-hazardous waste per load or/and a combined total of less than 100 litres per month of hazardous wastes listed in Ontario Regulation 347 Schedule 1 or Schedule 2B and characteristic waste, or/and less than 1 kg per month of hazardous waste listed in Ontario Regulation 347 Schedule 2A, or/and less than 500 litres per month or 6000 litres per year of liquid industrial waste. Where the small generators generate both hazardous and liquid industrial waste, the sum total of the two shall not exceed 6000 litres per year;

(zz) "***SDWA***" means *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, as amended from time to time;

(aaa) "**Site**" means the 29.54 hectare Waste Disposal Site (Processing and Transfer) for the purposes of receipt, storage, processing and transfer of waste by *Composting*, waste transfer,and multi-material recovery, to serve the municipalities and businesses of the Province of Ontario and *Municipal Hazardous and Special Transfer Waste Station*, serving the County of Wellington and City of Guelph located on Lot 4 and 5 Concession 1, Division C, Guelph, Ontario as shown on Reference Plan 61R-5574;

(bbb) "**Start-up Date**" means the date on which the *Organic Waste* is first received at the *Composting Site*;

(ccc) "**Trained Personnel**" means an employee who in addition to being a *Competent Person* is trained in accordance with the requirements of Condition 60 and knowledgeable through instruction and/or practice;

(ddd) **"Waste Transfer Station"** means the part of the *Site* that is used to receive, process and transfer non-hazardous solid waste including municipal, industrial, commercial and institutional wastes, *leaf and yard waste* and source separated recyclables;

(eee) "**waste wood**" means waste that is a wood or a wood product that has been treated with adhesives or preservatives or painted and includes manufactured wood such as medium density fibreboard;

(fff) "**wet waste**" means organic waste material consisting of food scraps and other non-hazardous waste with similar characteristics collected as part of the *Municipality's* residential curbside collection program;

(ggg) "**wood waste"** means waste that is wood or a wood product that is not contaminated with chromated copper arsenate, ammoniacal copper arsenic pentachlorophenol, creosote or other wood preservative, is not part of an upholstered article, does not have an affixed or adhered rigid surface and from which hardware or fittings have been removed;

(hhh) **"WRIC"** means the City of Guelph Waste Resource Innovation Centre located at 80/110

Dunlop Drive, Guelph; and

(iii) **"WRIC Environmental Emergency Plan"** means the plan that is required by Condition 45 for the Waste Resource Innovation centre facility located at 80/110 Dunlop Drive, Guelph.

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

TERMS AND CONDITIONS

1. The issuance of, and compliance with, this *Certificate* does not:

(1) relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement including, but not limited to:

(a) obtaining *Site* plan approval from the local municipal authority;
(b) obtaining all necessary building permits from the local municipal authority Building Services Division;
(c) obtaining approval from the Chief Fire Prevention Officer, local municipal authority: or

(2) limit in any way the authority of the Ministry to require certain steps be taken or to require the *Owner* and Operator to furnish any further information related to compliance with this *Certificate*.

A. INTERPRETATION

2. The requirements of this *Certificate* are severable. If any requirement of this *Certificate*, or application of any requirement of this *Certificate*, to any circumstances is held invalid, the application of such requirement to other circumstances and the remainder of this *Certificate* shall not be affected thereby.

3. Where there is a conflict between a provision of any document, including the application referred to in this *Certificate* and the conditions of this *Certificate*, the conditions in this *Certificate* shall take precedence.

4. Where there is a conflict between the application and a provision in any documents listed in Schedule "A", the application shall take precedence, unless it is clear that the purpose of the document was to amend the application and that the *Ministry* approved the amendment.

5. Where there is a conflict between any two documents listed in Schedule "A", other than the application, the document bearing the most recent date shall take precedence.

B. CHANGE IN OWNERSHIP

6. (a) The *City* shall notify the *Director*, in writing, of any of the following changes within, thirty (30) days of the change occurring;
(i) change of *Owner/*operator of the *Site* or both;
(ii) change of address of the *City*'s office or address of the new owner; and
(iii) any changes in the legal name of the *Certificate* holder, or any change of business name or style where applicable;

(b) Notification shall include a copy of the most current "Initial Notice" or "Notice of Change" filed under the Corporations Information Act, R.S.O. 1990, as amended from time to time, or if that act is not applicable, a copy of the most recent registration under the Business Names Act, R.S.O. 1990, as amended from time to time; and

(c) In the event of any change in ownership of the *Site*, the *Owner* shall notify in writing the succeeding owner of the existence of this *Certificate*, and a copy of such notice shall be forwarded to the *Director*.

C) RECORDS and *MINISTRY* ACCESS

7. (a) The *City* shall make all records, diagrams and reports, available upon request for inspection by a Provincial Officer;

and

(b) The *City* shall maintain, at all times, up-to-date *Site* plans, plant drawings, operation plans, contingency plans, emergency measures and any other similar type information at the facility for as long as the facility is operational and shall retain this information for five (5) years following closure of the facility.

8. The *Municipality* shall allow *Ministry* personnel, or a *Ministry* authorized representative(s), upon presentation of credentials, to carry out any and all inspections authorized by Section 156, 157 or 158 of the *Act*, Section 15, 16, 17 of the Ontario Water Resources Act, R.S.O. 1990, or Section 19, 20 of the Pesticides Act, R.S.O. 1990, as amended from time to time, of any place to which this *Certificate* relates; and, without restricting the generality of the foregoing to:

(i) enter upon any premises where the records required by the Conditions of this *Certificate* are kept;

(ii) have access to and copy, at any reasonable time, any records required by the Conditions of this *Certificate*;

(iii) inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations required by the Conditions of this *Certificate*; and

(iv) sample and monitor at reasonable times for the purposes of assuring compliance with the Conditions of this *Certificate*.

9. (a) The *Municipality* shall, forthwith upon request of the *Director, District Manager,* or Provincial Officer (as defined in the *Act*), furnish any information requested by such persons with respect to compliance with this *Certificate*, including but not limited to, any records required to be kept under this *Certificate*; and

(b) In the event the *Municipality* provides the *Ministry* with information, records, documentation or notification in accordance with this *Certificate* (for the purposes of this Condition referred to as "Information");

(i) the receipt of Information by the *Ministry;*

(ii) the acceptance by the *Ministry* of the Information completeness or accuracy; or

(iii) the failure of the *Ministry* to prosecute the *Municipality,* or require the *Municipality* to take any action under this *Certificate* or any statute or regulation in relation to the Information;

shall not be construed as an approval, excuse or justification by the *Ministry* of any act or omission of the *Municipality* relating to the Information, amounting to non-compliance with this *Certificate* or any statute or regulation.

10. Any information relating to this *Certificate* and contained in *Ministry* files may be made available to the public in accordance with the provisions of the Freedom of Information and Privacy Protection Act, R.S.O. 1990, C.F-31.

11. All records and monitoring data required by the Conditions of this *Certificate* must be kept on the *Site* for a minimum period of at least five (5) years.

D. *SITE* OPERATIONS

General

12. a) Except as otherwise provided by these Terms and Conditions, this *Site* shall be designed, developed, used, maintained and operated in accordance with the Applications for Provisional Certificate of Approval for a Waste Disposal Site dated October 22, 2009 and January 11, 2010 and signed by Bill Shields, Supervisor of Governance and Compliance, City of Guelph and associated plans and specifications, and the other supporting documentation listed in the attached Schedule "A" of this *Certificate;* and

b) Within ninety (90) days from the first receipt of *Organic Waste* at the *Composting Site*, a set of as-built drawings showing the *Composting Site*, as constructed, shall be prepared and kept at the *Composting Site*.

13. Only vehicles operating under the City's current Waste Management System Certificate of Approval No. A170150 are

permitted to bring waste to this *Site*during Sunday operating hours.

14. (i) The *Site* shall be operated and maintained in an environmentally safe manner which ensures the health and safety of all persons and minimizes visual impacts, surface water ponding, dust, odours, vectors, litter, vibration, noise and hazard to aircraft; and

(ii) If at any time problems such as dust, odours, vectors, litter, vibration, noise, hazard to aircraft or other nuisances are generated at the *Site*, resulting in complaints received by this *Ministry* and validated by a Provincial Officer, then the *City* shall upon request of the *Ministry*, take appropriate remedial action immediately. Appropriate measures may include temporary stoppage of all operations until the problem has been rectified and measures have been undertaken to prevent future occurrence.

Receiving Waste

15. a) *Residual waste,* transported from the *Site,* shall not exceed an average of one thousand (1000) tonnes per day averaged over a calendar year. If the *residual waste* approaches an average of one thousand (1000) tonnes per day, the *City* shall take measures immediately to reduce the receipt of the waste that causes the *residual waste* to approach the average of one thousand (1000) tonnes per day. *Residual waste* shall be disposed of at a waste disposal site approved by the *Ministry* to accept such waste;

b) The maximum amount of *residual waste* that may be transported from the *Site* is 1200 tonnes per day; and

c) In the event that *residual waste* and/or processed waste cannot be transferred from the *Site*, the *Owner* shall cease accepting any additional waste at the *Site.*

16. All in-coming and outgoing wastes to and from the *Site* shall be screened and inspected by *Competent Person* or *Trained Personnel* as detailed in the *Current Design and Operations Reports*, prior to being received, transferred and shipped to ensure wastes are being managed and disposed of in accordance with the *Act* and *O. Reg. 347*.

Waste Storage

17. Waste shall be stored at the *Site* in accordance with the *Current Design and Operations Reports* and at a minimum the *Owner* shall ensure that:

(1) i) all activities related to unloading waste, in-process waste and *residual waste* shall be conducted indoors at all times; and
ii) Condition 17. (1) i) does not apply to materials destined for recycling markets; and
iii) Condition 17.(1)(i) does not apply to materials received at the Public Drop-Off area.

(2) all *putrescible waste* shall be removed from the tipping floor of the *Waste Transfer Station* and the *MRF* at the end of each operating day and the tipping floor cleaned as necessary. Any *putrescible waste* that is not removed from the *Site* at the end of the operating day shall be stored indoors in a tarped or enclosed container;

(3) all containers used for the outside storage of non-putrescible processed waste that is destined for recycling markets shall be maintained in a leakproof condition and shall be tarped or enclosed unless material is being added or removed;

(4) The following are the maximum storage amounts that area allowed at the *Site*:
(a) *Waste Transfer Station* - 795 tonnes inside the *Waste Transfer Station* building;
(b) *MRF*- 3850 tonnes inside *MRF* building;
(c) Organic Waste Processing Facility- 8,500 tonnes inside building;
(d) Outdoor storage of the following:
i) *leaf and yard waste*- 4000 tonnes;
ii) a maximum of 3050 tonnes of non-putrescible recyclable wastes stored in dedicated bunkers or covered bins on an asphalt paved pad of approximate area of 6100 square metres pads located to the south of the transfer station and an asphalt paved pad of approximate area 2,100 square metres to the west of the Organic Processing Facility for the storage of such

recyclable materials as waste electronics, tires, scrap metal, corrugated cardboard and reusable materials;
iii) outdoor storage for a maximum of twelve (12) hours of two loaded transfer trailers from *Waste Transfer Station;*
iv) outdoor storage of *waste wood, wood waste* and *Amendment Materials* that are referred to in Condition 54 (9) of this *Certificate* in amounts that are needed for the processing of *Organic Waste* at the *Organic Waste Processing Facility;*
v) Any outdoor storage of recyclable waste shall not create a nuisance or hazard;
(e) wastes that are in bins in the Public Drop-Off area that is identified in Appendix A-1 of the Design and Operations Report that is identified in item 51 of Schedule "A"; and
(f) *MHSW Waste Transfer Station*-15 tonnes;

(5) The maximum storage times are as follows:

(a) *Waste Transfer Station* - i) *Organic Waste*- except as provided in
(in building) Condition 17 (5) (a) ii), 24-hours storage time at the *Waste Transfer Station* until the *Start-up Date;*
ii) due to exceptional circumstances or an emergency, the *Owner* may request to the *District Manager* that maximum 24-hour storage allowed by Condition 17 (5)(a) i) be extended to up to 72-hours and the *District Manager* has the authority to grant written concurrence to such a request;

iii) after the *Start-up Date, Organic Waste, Residual Waste* and/or *rejected waste* may be stored at the *Waste Transfer Station* in accordance with Condition 56 (2)(h), 56(3)(c), and/or 56(4)(b);
iv) after the *Start-up Date,* due to exceptional circumstances or an emergency that results in the cessation of further processing at the *Composting Site,* on a one time basis for each such cessation of further processing, the *Owner* may remove the unprocessed organic waste from the *Composting Site* and transfer it in a covered container, on a priority basis, to the *Waste Transfer Station* and have it removed from the *Waste Transfer Station* on the same day that the transfer of unprocessed Organic Waste occurred on;

v) all other waste - 72-hours;

vi) due to exceptional circumstances or an emergency, the *Owner* may request to the *District Manager* that maximum 72-hour storage allowed by Condition 17 (5)(a) v) be extended to up to seven (7) days and the *District Manager* has the authority to grant written concurrence to such a request; and
vii) notwithstanding Conditions 17 i), ii), iii), iv), v) and vi), if the *District Manager* determines that the storage of odorous waste at the *Waste Transfer Station* is causing significant odour issues, the odorous waste at the *Waste Transfer Station* shall be immediately removed from the *Site;*

(b) *MRF* i) 5 days for generation of *residual waste* from date of
(in building) generation; and

ii) 120 days for all other waste;

(c) Organic Waste i) as outlined in Condition 54 (8)(a)

Processing Facility of this *Certificate, Organic Waste* shall

be incorporated into active *Composting* process within 36-hours of receipt;
ii) as outlined in condition 54 (8)(e) of this *Certificate, residual waste*
(Processing Building)
-maximum of 14 days storage time from generation date;

(d) Outdoor storage of waste - i) 12 hours for a maximum of two loaded and

transfer trailers from the *Waste Transfer Station;* and
ii) seven (7) days storage time for all other waste stored outside;

(e) Outdoor storage of materials referred to in Conditions 54 (9) and 17 (4)d.(iv) -
the reasonable amount of time required for operational needs at the *Organic Waste Processing Facility* for the outdoor storage of *waste wood, wood waste* and
*Amendment Materials;*and

(f) *MHSW* - 90 days storage time; and

(6) No storage or transfer areas, other than those approved under this *Certificate* shall be used for waste storage or transferring.

Dirt, Dust and Airborne Emissions
18. (a) The *City* shall ensure that dust and/or other material that may become a contaminant, generated by activities on the *Site*, is minimized in a manner that ensures there are no off-*Site* impacts of such emissions. The *City* shall implement control measures as outlined in the approved Operation and Management Plan to comply with this Condition;

(b) The *City* shall ensure that vehicles entering the *Site* do not drag into the *Site*, dirt and/or other material that may become a contaminant or a nuisance. The *City* shall ensure that vehicles leaving the *Site* do not drag out of the buildings or off the *Site* waste, dirt and/or other material that may become a contaminant or a nuisance; and

(c) All parking areas, on-*Site* roads that are used for transportation of wastes, recyclable material and/or processed material including *Compost,* and storage areas shall be paved and shall be cleaned as necessary to prevent dust and litter from blowing off the *Site*.

Litter
19. (a) Litter shall be picked up daily from the *Site* and from roads and ditches within one (1) kilometer of the *Site*;

(b) All collected and stored litter shall be in closed or covered containers;

(c) Litter collected through the litter control program shall be transferred off-*Site* or processed within four (4) days of collection; and

(d) The *City* shall undertake all reasonable measures at the *Site* to ensure that there is no unauthorized dumping of waste on the *Site*.

Rodents and Vermin
20. (a) The *City* shall implement the approved litter control to minimize and control the occurrence of vectors, rodents and vermin; and

(b) If necessary, the *City* shall retain the services of a pest management company to monitor and controls vectors, rodents and vermin.

Odour
21. a) The Odour Monitoring Program that is required by Condition 58 (13) of this *Certificate* also shall be designed to detect and identify any odours originating from the operation of the *Waste Transfer Station* and the *MRF;*

b) *Organic Waste* received at the public drop-off bins shall remain covered at all times other than loading and shall be emptied indoors daily; and

c) If *putrescible waste* is received at the *Material Recovery Facility,* it shall remain covered at all times other than during loading and unloading.

Noise
22. (a) All off-road equipment used at the *Site* shall be operated in such a manner that sound levels from such equipment do not exceed 85 decibels at 15 metres measurement distance;

(b) All off-road equipment shall be operated and maintained in accordance with the procedures specified in Publication NPC-115 of the *Ministry's* Model Municipal Noise Control By-law;

(c) All stationary equipment shall be operated and maintained in accordance with the procedures specified in Publication NPC-105 of the *Ministry's* Model Municipal Noise Control By-law; and

(d) Notwithstanding Conditions 22, (a), (b) and (c), if at any time noise and vibration nuisances are generated at the *Site*, resulting in complaints received by this *Ministry* and validated by a Provincial Officer, the *City* shall take remedial action immediately.

Hazard to Aircraft
23. (a) The *City* shall ensure that the activities related to the operation of the *Site* do not create a hazard to aircraft;

(b) The *City* shall ensure that there is no net increase in bird populations at the *Site* above the baseline levels established by the baseline study that has been conducted by the *Owner;*

(c) If the population of *birds* in the vicinity of the facility increases above the baseline levels, the *City* shall immediately undertake additional bird deterrent measures, to bring the bird population in accordance with baseline levels;

(d) The *City* shall ensure that the number of thermals created by the *Site* is kept to the minimum and that the number of *birds* soaring in these thermals shall not exceed ten (10) at any given time;

(e) The *City* shall ensure that the amount of dust, steam, smoke or other airborne vapour discharged from the facility is kept to the minimum and shall not restrict visibility on or near the Guelph Air Park;

(f) The *City* shall continue to implement a bird control management plan, as required, to ensure the *Site* is not an attraction to *birds*. The bird control management plan shall include but not be limited to additional bird deterrent measures in addition to the measure outlined in Item 6 of Schedule "A"; and

(g) Upon receipt of a written notification that Transport Canada or such other governmental agency of equivalent jurisdiction over airport operations has served notice or a similar written warning to shut down or curtail airport operations at the Guelph Air Park due to hazard to aircraft as a result of *birds* in the vicinity of the airport, which may or may not be a direct result of the *Site* operations, the *City* shall undertake the following measures immediately:
(i) cease acceptance of all waste at the *Site*, except *MHSW*, unless in the opinion of the *District Manager*, the reason for the hazard to aircraft as a result of *birds* is known, and is not a direct or indirect result of *Site* operations;
(ii) if the reason for the hazard to aircraft as a result of *birds* is known and is a direct or indirect result of *Site* operations, take all reasonable measures to investigate the problem, institute remedial/mitigative measures immediately, devise a long-term action plan to avoid any such future occurrences at the airport and submit a comprehensive report of such plans to the *Director*, and the appropriate agency that has served the notification to shutdown or curtail airport operations;
(iii) if the reason for the hazard to aircraft as a result of *birds* is not known, the *City* shall undertake a comprehensive study, acceptable to the *Director* and the agency that served notification to shutdown or curtail operations to determine if such hazard to aircraft was a direct or indirect result of the *Site* operations and to propose measures to prevent any similar or related occurrences that may create a hazard to aircraft;
(iv) the *City* shall submit the reports required by Condition 23 (g) (ii) and (iii) to the *Director* for approval and to the agency that served notification to shutdown or curtail airport operations. Upon the *Director's* approval, the *City* shall implement remedial/mitigative/contingency measures, as required;
(v) The *City* shall not accept any waste at the *Site* unless a qualified professional consultant has submitted a report stating that the hazard to aircraft as a result of *birds* has been resolved, or is not the direct or indirect result of *Site* operations, and the *Director* has authorized that the *Site* can again begin to accept waste;
(vi) notwithstanding Condition 23 (g) (ii), (iii), (iv) and (v), the *City* may continue to process any waste materials inside the *Organic Waste Processing Facility* and the *Material Recovery Facility* that were present at the *Site* prior to the *City* ceasing to accept waste at the *Site* pursuant to Condition 23 (g) (i). The *City* shall continue to ensure that all *Site* activities do not create a hazard to aircraft safety;
(vii) During the period of shutdown the *City* shall implement its contingency plan for disposal of waste at approved alternative location(s); and
(viii) Condition 23(g) (i) to (vii) does not relieve the *City* from implementing all necessary contingency/mitigative measures

to ensure that *Site* activities do not create a hazard to aircraft.

Traffic

24. The *City* shall make adjustments to traffic flow patterns, including but not limited to the use of traffic lights as required, to minimize any adverse traffic impacts resulting from the facility traffic patterns.

Operating Hours

25. (a) All control measures at the *Site,* including but not limited to, dust, odours, vectors, litter, noise and hazard to aircraft shall take place 24-hours a day, seven (7) days a week;

Composting Site

(b) The allowed hours of operation of the *Composting Site* operation are covered by Condition 56 (1);

***MHSW Transfer Station, MRF,* and Public Drop-off area**

(c) Waste and recyclable materials destined for the *MHSW,* the *MRF,* and/or the Public Drop-off area may be received at the *Site* only from 7:00a.m. to 11:00p.m. from Monday to Friday, and from 8:00a.m. to 4:00p.m. on Saturday;

(d) Waste and/or recyclable materials may be transferred from the *Site* only during the following hours:
(i) Monday to Friday 7:00a.m. to 6:00 p.m; and
(ii) Saturday 8:00 a.m. to 4:00 p.m.;

(e) Outdoor processing of waste and/or recyclables associated with the *MHSW Transfer Station,*the *MRF* and/or the Public Drop-off area may occur only in the following hours:

(i) Monday to Friday 7:00 a.m. to 11:00 p.m.; and
(ii) Saturday 8:00 a.m. to 4:00 p.m.;

(f) Indoor processing at the *MRF* and/or the *MHSW* may take place from Monday 12:00 a.m. to Saturday 11:59 p.m. In extraordinary circumstances, indoor processing may take place beyond these hours to eliminate any backlog of material requiring processing;

(g) Due to exceptional circumstances or an emergency, the *Owner* may request to the *District Manager* that the hours of operation of the *MHSW Transfer Station,* the *MRF* and/or the Public Drop-off area be extended and the *District Manager* has the authority to grant written concurrence to such a request;

Waste Transfer Station

(h) Subject to Condition 13, waste destined for the Waste Transfer Station may be received at the *Site* only from Monday to Sunday from 7:00a.m. to 7:00p.m.;

(i) Notwithstanding the hours of operation for waste receipt at the *Waste Transfer Station* referenced in Condition 25 (g), the *Site's* activities and movement of waste within the *Site*related to the *Waste Transfer Station,* including outgoing shipments, may occur only during the hours of 7:00a.m. to 11:00p.m Monday to Saturday; and

(j) Due to exceptional circumstances or an emergency, the *Owner* may request to the *District Manager* that the hours of operation of the *Waste Transfer Station* be extended and the *District Manager* has the authority to grant written concurrence to such a request.

Competent People* and *Trained Personnel

26. a) The *Municipality* shall ensure through proper training programs and personnel records that all personnel directly involved with activities relating to the operation, maintenance and inspection of the *Site* are *Competent People* and that all personnel directly involved with the activities of the *Organic Waste Processing Facility* are *Trained Personnel* and that they are given refresher training on the components of a *Competent Person* or *Trained Personnel* as applicable, at least once every three years; and

b) The *Municipality* shall keep a record that is in electronic or written format that is easily accessible for inspection by a *Provincial Officer* of all employees who are *Competent People* and *Trained Personnel.*

27. The *Municipality* shall ensure that *Competent People* or *Trained Personnel* are available at all times during the hours of operation of this *Site*. No loading, unloading, or sorting of recyclables or any waste material shall occur unless a *Competent Person* or *Trained Personnel* supervises the loading, unloading, or sorting operation.

28. All in-coming and outgoing wastes shall be screened and inspected by *Competent People* or *Trained Personnel* as detailed in the *Current Design and Operations Reports*, prior to being received, transferred and shipped to ensure wastes are being managed and disposed of in accordance with the Act and *O. Reg. 347*.

Public Liaison Committee
29. (1) The *Owner* shall invite the following groups to provide input and/or comments into preparation of the Terms of Reference for the *Public Liaison Committee (ToR PLC):*

(a) home owners within 2,000 metres of the *Composting Site*;
(b) any interested non-governmental organization (NGOs); and
(c) any interested person(s) or group(s);

(2) (a) The *Owner* shall consider all input and/or comments submitted by the groups listed above during preparation of the *ToR PLC*; and

(b) A minimum of ninety (90) days prior to the receipt of the *Organic Waste* at the *Composting Site*, the *Owner* shall prepare and submit to the *District Manager* the *ToR PLC*, including documentation demonstrating consideration of all public input and/or comments received, for written concurrence of the *District Manager;*

(3) The *ToR PLC* shall be amended from time to time according to appropriate amending procedures identified within the content of the *ToR PLC*. Any amendment to the *ToR PLC* must be agreed to by the *District Manager* prior to its implementation;

(4) Within sixty (60) days from the *District Manager`s* concurrence to the *ToR PLC,* the *Owner* shall take all reasonable steps to establish a *Public Liaison Committee (PLC)* which shall serve as a forum for dissemination, consultation, review and exchange of information regarding the operation of the *Composting Site*, including environmental monitoring, maintenance, complaint resolution, and new approvals or amendments to existing approvals related to the operation of this *Composting Site*;

(5) The *Owner* shall invite representation from the following groups to participate on the *PLC*:

(a) home owners within 2,000 metres of the *Composting Site;*
(b) any interested NGOs; and
(c) any interested person(s) or group(s);

(6) The number of representatives from each group shall be as specified in the *ToR PLC* approved by the *District Manager;*

(7) No later than ninety (90) days from the *District Manager`s* concurrence to the *ToR PLC,* the *Owner* shall submit to the *District Manager* a written report that details steps to be taken by the *Owner* to establish, maintain and participate in a *PLC*. This report shall include the identification of each of the representatives that have been invited to participate in the *PLC*;

(8) A copy of the Annual Report that is required by Conditions 52 shall be provided to the *Public Liaison Committee* at the first scheduled meeting following March 31st; and

(9) The *City* shall allow reasonable access to the *Site* for any member of the *Public Liaison Committee;*

30. The *City* shall make available to the *Public Liaison Committee,* all records and reports required by this *Certificate* for the purposes of monitoring the ongoing operations of the *Site.*

E. STORMWATER AND WASTEWATER MANAGEMENT:

31. The *Municipality* shall manage all discharges from this *Site* including stormwater run-off, including the stormwater

collected and contained in the Stormwater Collection Ponds, in accordance with Municipal and Private Sewage Works Certificate of Approval number 5015-856HHG and appropriate Municipal, Provincial and or Federal Legislation, Regulations and By-laws.

F. MONITORING PROGRAM

Groundwater Monitoring
32. Groundwater shall be sampled on a semi-annual basis (spring and fall).

33. The analyses of samples collected in accordance with Condition 32 shall seek to identify chloride, nitrate and a suite of compounds characteristic of waste at the *Site*. Sampling frequency and parameters for analysis may be adjusted upon the approval of the *District Manager,* as groundwater information become available.

34. All monitoring wells which form part of any monitoring program shall be protected from damage. Any groundwater monitoring wells that are damaged shall be repaired or replaced forthwith or properly abandoned in accordance with *Ontario Regulation 903*.

Surface Water Monitoring
35. (a) The *City* shall annually review and update the existing surface water sampling program, designed to detect and quantify any impacts originating from the *Site*;

(b) A surface water sampling program shall be implemented to ensure early detection of contaminants in the event that such contaminants escape the *Site*. Surface water shall be sampled monthly for the following conventional parameters: biochemical oxygen demand (BOD), suspended solids (SS), ammonia, nitrogen, Total Kjeldahl Nitrogen (TKN), total phosphorus and phenolics. For all other parameters, surface water shall be sampled on a semi-annual basis (spring and fall). The analysis shall seek to identify chloride, nitrate and a suite of organic and inorganic compounds characteristic of waste generated at the *Site;*

(c) Sampling frequency and parameter for analysis may be adjusted upon the approval of the *District Manager,* as surface water information become available;

(d) Surface water shall be sampled at the discharge location of the final surface water detention pond;

(e) The *City* shall ensure that all stormwater which comes in contact with waste material is treated or discharged into the sanitary sewer; and

(f) The *City* shall annually review and update the detailed maintenance schedules for the infiltration trenches and stormwater detention ponds.

Reporting on monitoring.
36. The *Municipality* shall include the results from the approved program covering the previous calendar year, with the interpretation of the monitoring results prepared by a qualified hydrogeologist, engineer or scientist in the Annual Report referenced in Condition 52. Following a review of the analytical results or, of any of the reports required by this Condition, the *District Manager* or, the *Director* may alter the frequencies and locations of sampling and parameters for analysis required by this Condition if he/she considers it necessary for proper assessment of the quality of the groundwater or, if he/she is requested to do so by the *Municipality* and considers it acceptable by the evidence of information in support of the request.

G. *SITE* SECURITY

37. (a) The *City* shall ensure that a *Competent Person* is available at all times during the hours of operation at this *Site*. No loading or unloading of waste, *Compost* and/or recyclable material, including the public drop-off bins, shall occur unless a *Competent Person* supervises the loading or unloading operation. No public drop-off shall be allowed beyond the normal

operating hours of the facility. No processing shall occur unless a *Competent Person* supervises the processing;

(b) Not less than once each calendar year, the *City* shall ensure that a fire inspection is carried out to determine if adequate fire prevention and protection measures are in place for the facility;

(c) The *City* shall ensure that the *Site* is adequately lit at all times;

(d) The *City* shall ensure that the existing signs posted on the *Site*, which identify the name of the facility and an emergency and/or *incident* reporting telephone number, continue to be adequately maintained;

(e) The *City* shall ensure that the existing 1.6 metre high fence with lockable gates is adequately maintained in order to continue to preserve the security of the *Site*; and

(f) The *City* shall ensure that the *Site* is secured beyond the normal operating hours of the facility to prevent unauthorized entry.

H. *WASTE TRANSFER STATION*

38. a) Except as noted in Condition 38 b) and c) of this *Certificate*, the *Waste Transfer Station* may accept non-hazardous solid industrial waste from industrial, commercial and institutional sources, commercial waste and domestic waste;

b) asbestos waste may not be accepted at the *Waste Transfer Station;* and

c) *Organic Waste* may only be accepted at the *Waste Transfer Station* in accordance with Condition 17.(5)(a).

39. a) Except as noted in Condition 17.(5)(a) ii), iii), iv) and vi) in accordance with Condition 17.(5)(a)i), the maximum storage time at the *Waste Transfer Station* building for allowed *Organic Waste* is 24-hours; and

b) The maximum storage capacity in the building at the *Waste Transfer Station* is 795 tonnes in the *Waste Transfer Station* building.

I. *MATERIAL RECOVERY FACILITY*

40. (a) The *City* shall ensure that only municipal waste recyclable material, generated within the Province of Ontario is received at this *Site;*

(b) The maximum storage capacity at the *MRF* is 3,850 tonnes;

(c) All materials to be processed at the *Material Recovery Facility* shall be unloaded and processed indoors except commingled recyclables which may also, as required, be unloaded into the outdoor storage bunker assigned to this material, or in the *Organic Waste Processing Facility* when not in use for *Composting*;

(d) The *City* shall ensure all storage containers are maintained in good condition;

(e) The *City* shall limit any outside storage to processed or source-separated non-putrescible dry materials, dropped off by either commercial or residential vehicles, including but not necessarily limited to tires, rubble, electronic waste, source separated roofing shingles, mattresses, textiles, white goods, construction and demolition wastes, commingled recyclables, *wood waste, waste wood*, glass, scrap metal, and drywall;

(f) The *Owner* may apply to the *District Manager* for the outdoor storage in concrete bunkers or in storage containers of additional non-hazardous solid waste(s) that is/are not provided for in Condition 40 (e) and the *District Manager* may provide written concurrence to the *Owner* for the storage of non-hazardous solid waste(s) that is/are not provided for in Condition 40 (e);

(g) Outside storage shall be on an asphalt pad, or equivalent impermeable surface, within designated concrete bunkers, or in closed storage containers in a manner and in amounts which does not create a nuisance or hazard;

(h) The *City* shall implement litter controls including, but not limited to, covering waste with netting and limiting the receipt or movement of materials on windy days. Litter pick-up shall occur daily and after the movement of waste either into the *Material Recovery Facility* for processing or after loading vehicles for off-*Site* transfer at a minimum;

(i) The outdoor storage of any wastes that may attract *birds,* vectors, rodents and/or vermin is prohibited;

(j) The *City* shall ensure that the addition, removal and processing of all wastes and/or recyclable material occurs only in the presence of a *Competent Person;*

(k) The *Material Recovery Facility* doors for vehicular traffic shall normally be kept closed and shall only be opened for entry or departure of vehicles if there is an attraction to *birds;*

(l) All *dry waste* shall be processed and shipped off-*Site* within 120 days of receipt; and

(m) *Residual waste* not suitable for further processing at the *Site* shall be moved off-*Site* within five (5) days of generation.

J. _MUNICIPAL HAZARDOUS AND SPECIAL WASTE TRANSFER STATION_

41. In this section, "processed waste" means wastes that have been bulked together in a common container or packaged for disposal.

42. (a) The operation of this *MHSW Transfer Station* is limited to the collection and transfer of waste classes 112, 121, 145, 146, 148, 212, 213, 221, 242, 251, 252, 261, 263, 269, 312, and 331 and also includes wet cell batteries and small dry cell batteries, household cleaners and detergents, aerosols, waxes and polishes, fluorescent tubes and energy efficient light bulbs, mercury switches and thermostats; as outlined in the New Ontario Waste Classes, January 1996, and waste allowed by Condition 43(b); and

(b) The maximum amount of *MHSW* and waste allowed by Condition 43(b) that may be stored at the *Site* is 15 tonnes.

43. (a) The *City* shall ensure that only *MHSW* generated by residents living within the City of Guelph and the County of Wellington is received. No industrial, commercial and/or institutional hazardous waste shall be received at this facility;

(b) Subject to the limitations outlined in Condition 42 of this Certificate, the City of Guelph may accept for collection and transfer at the *MHSW Transfer Station, MHSW* or other waste acquired by the City from *small generators*as a result of the management of incidents of improper or illegal dumping in the City of Guelph, none of which shall exceed the quantities outlined in the definition of *small generators* that is defined in the definitions section of this Certificate;

(c) The *City* shall ensure that a *Competent Person* is on duty at all times during the operation of the *MHSW Transfer Station* to provide proper supervision of activities;

(d) The *City* shall ensure that adequate fire fighting equipment is available at the *MHSW Transfer Station* location at all times and that on-*Site* staff are trained in the use of such equipment;

(e) The *City* shall ensure that the local police and fire departments are informed of the operation at the *MHSW Transfer Station* at all times and are kept up-to-date on the types and quantities of waste that the facility handles;

(f) Not less than once per calendar year, the *City* shall ensure that a fire and explosion prevention inspection is carried out by a qualified person who is either a representative from the City of Guelph Fire Department, a Professional Engineer or who has specialized training in fire and explosion hazards;

(g) The *City* shall ensure that the management and disposal of waste at the *MHSW Transfer Station* is done in accordance with Ontario Regulation 347;

(h) i) The *MHSW Transfer Station* shall be inspected by a *Competent Person* on each operating day basis to ensure the proper storage and handling of *MHSW* waste and that the integrity of waste containers is intact;

ii) A daily record of the inspections required by Condition 43(g)i shall be maintained by the *Owner;*

iii) At a minimum, the record shall indicate the date and time of the inspection, the name of the *Competent Person* who did the inspection, a description of any unusual observations, such as spills, made during the inspection, description of
any action taken to correct an *incident* that was identified and any recommendations for preventing a recurrence of a similar *incident;* and

iv) the records required by Condition 43(g)ii shall be made readily available for an inspection by a *Provincial Officer;*

(i) No MHSW waste shall be stored on-*Site* longer than ninety (90) days from the date it was received;

(j) All storage of waste shall be in accordance with the *Ministry's* "Guidelines for Environmental Protection Measures at Chemical and Waste Storage Facilities," May 2007, and its amendments;

(k) The *City* shall have a *Competent Person* annually review and update the existing waste screening measures for all incoming waste, to ensure only wastes approved by this *Certificate* are received at this facility;

(l) Any updated report on the waste screening measures shall be submitted to the *District Manager;* and

(m) The *City* shall ensure that no *PCB waste* are accepted at the *Site*. Oil and oil-based paints which have been manufactured prior to 1972, paints and thinners having an oily appearance, rubber based paints (concrete paints/stains), adhesives, urethane elastomers manufactured prior to 1977, pesticides manufactured prior to 1977, any of these materials whose manufacturing date cannot be determined and any container having contained these materials may contain *PCBs.* The *City* shall undertake a waste screening procedure for *PCBs* that includes, but is not limited to the following:
(i) The *City* shall ensure that an approved *PCB* storage site is available to take and store any confirmed *PCB waste* that is inadvertently received at the *Site*;
(ii) The *City* shall ensure a waste tracking system is established to property identify the source of any confirmed *PCB waste;*
(iii) Any *PCB* suspect material shall be segregated and shall not be mixed or bulked. All *PCB* suspect material shall be sampled and analyzed for *PCB* content. Each individual suspect container or a representative proportional composite of not more than ten (10) individual suspect containers shall be sampled and analyzed;
(iv) Any material that may be mixed or bulked shall be sampled and analyzed for *PCB* content. Each individual bulk container or drum shall be sampled and analyzed; and
(v) Any material that has measure levels greater than fifty (50) parts per million is considered to be *PCB waste* as defined in *Ontario Regulation 362*. *PCB waste* shall be removed from the *Site* to an approved *PCB* storage site in accordance with written instructions from a *Director* as defined in *Ontario Regulation 362*, or a Waste Management System Certificate of Approval which specifies the manner in which *PCB waste* may be stored, handled, collected, transported or disposed of.

44. The *City* may offer materials in Ontario Waste Classes 145 (paint), 331 (aerosols), 213 (car products) and 148 (cleaning products) to the public.

K. *WRIC ENVIRONMENTAL EMERGENCY PLAN*

45. (a) Within thirty (30) days of commencing the receipt of Organic Waste at the *Composting Site,* the *Owner* shall update its "Solid Waste Resources Emergency and Contingency Plan" that is contained in the *Owner's* Design and Operations Reports that are referenced by Items 49, 50 and 51 of Schedule "A" by submitting to the *District Manager* a *WRIC Environmental Emergency Plan* for the entire *Site.* The *WRIC Environmental Emergency Plan* for the entire *Site* shall be prepared in consultation with the local Municipality and the City of Guelph Fire Department;

(b) The *WRIC Environmental Emergency Plan* shall identify measures for the preparation for, the prevention of, the response to and the recovery from environmental emergencies at the *Site* including but not limited to:

(i) a spill, process upset, emission of odours, fire, explosion or any other emergency situation, and disruption at the *Site* such as power failure and/or equipment failure;
(ii) specific clean-up methods for wastes expected to be generated from an emergency situation;
(iii) fire and explosion prevention planning and fire protection systems;
(iv) a list of equipment and clean-up materials available for dealing with the projected emergency situation;
(v) measures to be taken to prevent incompatible chemicals at the *MHSW* Transfer Station from coming into contact;

(vi) Environmental Emergency Planning measures for the *Composting Site* that are required by Condition 61 of this Certificate;
(vii) measure to be undertaken in the event hazard to aircraft problems develop or there is a net increase in *birds* at the *Site*;
(viii) measures to be undertaken in the event any unauthorized non-hazardous or hazardous waste or unidentifiable waste appears at the *Site*;
(ix) measures to be undertaken in the event of groundwater and/or surface water contamination;
(x) notification protocol with names and telephone numbers of persons to be contacted, including persons responsible for the *Site*, the *Ministry's District Office* and Spills Action Centre, the local Fire Department, the local Municipality, the local Medical Officer of Health, and the Ministry of Labour, and the names and telephone numbers of waste management companies available for emergency response; and
(xi) a complaints procedure that has a minimum the information that is outlined in Condition 46;

(c) No waste shall be received at the *Composting Site* for storage or processing until the *District Manager* provides a written concurrence for the emergency response and contingency planning measures for the issues in the *WRIC Environmental Emergency Plan* that deals with the *Composting Site;*

(d) The city shall keep up-to-date copies of its *WRIC Environmental Emergency Plan* at central locations at the *Composting Site*, the *Waste Transfer Station,* the *MRF* and the *MHSW Waste Transfer Station;*

(e) The *WRIC Environmental Emergency Plan* shall be reviewed on an annual basis and updated, if necessary by the *Owner.* Any revised version of the *WRIC Environmental Emergency Plan* shall be submitted within fifteen (15) days of the revision for comments and concurrence to the local Municipality, the Fire Department and to the *District Manager;* and

(f) After five (5) years from the date of issue of this *Certificate,* the *Owner* may apply in writing to the *District Manager* for agreement of the removal of the requirement in Condition 45(e) that requires *District Manager* concurrence. Also, the *District Manager* may provide written notice to the *Owner* that they are exempted from the noted provision in Condition 45(e).

Complaints Procedure

46. If at any time, the *Municipality* receives complaints regarding the operation of the *Site*, the *Municipality* shall respond to these complaints according to the following procedure:

(a) The *Municipality* shall record each complaint on a formal complaint form entered in a sequentially numbered log book. The information recorded shall include the nature of the complaint, circumstances of the complaint including weather conditions, the name, address and the telephone number of the complainant and the time and date of the complaint;

(b) The *Municipality,* upon notification of the complaint shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and

(c) The *Municipality* shall immediately orally notify the *Ministry* of the complaint, followed with the submission of a written report within one (1) week, of the complaint detailing what actions, if any, were taken to identify and remediate the cause of the complaint and what remedial action, if any, would be taken.

47. The *Municipality* shall take immediate measures to clean-up all spills, related discharges and process upsets of wastes which result from the operation of the *Site*. All spills and upsets shall be immediately reported to the *Ministry's* Spills Action Centre at (416) 325-3000 or 1-800-268-6060 and shall be recorded in a written log or an electronic file format, referred to in Condition 51 of this *Certificate*, as to the nature of the spill or upset, and the action taken for clean-up, correction and prevention of future occurrences.

L. INSPECTION

48. The ***Municipality*** shall have a *Competent Person* or *Trained Personnel* conduct regular daily and weekly inspections of the equipment and facilities as outlined in the Design and Operations Reports of this *Certificate* and as is required by Condition 57 of the *Certificate* to ensure that all equipment and facilities at the *Site* are maintained in good working order at all times. Any deficiencies detected during these regular inspections must be promptly corrected. A written record must be maintained at the *Site*, which includes the following:

(a) name and signature of *Trained Personnel* conducting the inspection;

(b) date and time of the inspection;

(c) list of equipment inspected and all deficiencies observed;

(d) a detailed description of the maintenance activity;

(e) date and time of maintenance activity; and

(f) recommendations for remedial action and actions undertaken.

49. The *Municipality,* in addition to inspections and documentation requirements carried out in Condition 48, shall conduct on each operating day, a physical inspection of the following areas to ensure the *Site* is secure or operating properly and that no off-*Site* impacts such as vermin, vectors, odour, noise, dust, litter, or other possible contaminants resulting from the operation of the Facility:

(a) Oil/water separator;
(b) holding tanks and associated containment areas;
(c) drainage swales, culverts and catch basins and stormwater management pond; and
(d) security fence, barriers and property line.

50. The *City* shall remedy any malfunction and/or deficiency which these inspections reveal.

M. RECORD KEEPING

51. (a) The *City* shall maintain written records of daily *Site* inspections at the *Site*. This record shall be in the form of a *Site* Inspection daily log(s) and shall include as a minimum:
(i) the requirement outlined in Condition 63 of the *Certificate;*
(ii) date and time of inspection;
(iii) name, title and signature of a *Competent Person* or *Trained Personnel* supervising the inspection;
(iv) a listing of all equipment, fencing, gates etc inspected and any deficiencies observed;
(v) any maintenance conducted as a result of these inspections;
(vi) recommendations for remedial action and date remedial action, if necessary, was completed;
(vii) indication whether odours are detectable;
(viii) indication of any litter collected;
(ix) indication of any *incidents;* and
(x) indication of *birds;*

(b) The *City* shall maintain daily written records of the waste and/or recyclable material received and processed at the *Waste Transfer Station,* the *Material Recovery Facility,* the *Municipal Hazardous and Special Waste Facility* and *the Organic Waste and Composting Site.* This record shall include as a minimum:
(i) date, quantity and source of waste and/or recyclable material received;

(ii) date and quantity of waste and/or recyclable material processed;
(iii) date, quantity and the destination of material transferred off-*Site*; and
(iv) date, quantity and destination of any *rejected waste* from the *Organic Processing Facility;*

(c) The log for the *Organic Waste* and *Composting Site* shall be in accordance with Condition 63;

(d) analytical results, when required of all in-coming and outgoing wastes and materials; and

(e) results of inspections and reports required under Conditions 48, 49 and 50, including the name and signature of the person conducting the inspection and completing the report.

N. ANNUAL REPORT

52. The *City* shall submit an annual report on the operation of the *Site* for the previous calendar year to the *District Manager* by March 31st of each year. This report will include the information required as follows:

(a) the information required by Condition 63 (8) of the *Certificate* dealing with the *Composting Site;*

(b) a monthly summary of the waste and/or recyclable materials received at the *Site*, including quantity, source and *Ontario Regulation 347* waste classes;
(c) a monthly summary of the wastes and/or recyclable materials processed at the *Site* including quantity and *Ontario Regulation 347* waste classes;
(d) a monthly summary of the waste and/or recyclable materials transferred off-*Site* including quantity, destination and *Ontario Regulation 347* waste classes;
(e) an annual summary of the analytical results for the groundwater, and surface water monitoring program including an interpretation of the results and any remedial/mitigative action undertaken;

(f) an annual summary of any deficiencies, items of non-compliance or process aberrations that occurred and remedial/mitigative action taken to correct them;
(g) a summary of any changes to the *Engineer's Report* and/or the Design and Operations Report that have been approved by the *Director* since the last annual report;
(h) a summary of any changes to the Design and Operations Report Design and the WRIC Environmental Emergency Plan that were made in accordance with Condition 68(1) of this *Certificate*;
(i) a summary of any changes to the Design and Operations Report that have been approved by the *Director* since the last annual report;
(j) update on activities of the *PLC*; and
(k) all measurement units shall be reported in consistent metric units.

O. CLOSURE PLAN:

53. (a) The *Municipality* shall submit, for approval by the *Director,* a written Closure Plan for the *Site* four (4) months prior to the closure of the *Site*. This plan must include as a minimum, a description of the work that will be done to facilitate closure of the *Site* and a schedule for completion of that work;

(b) The closure plan shall include the requirement of Condition 65 of this *Certificate*; and

(c) Within ten (10) days after closure of the *Site*, the *Municipality* shall notify the *Director* in writing that the *Site* has been closed in accordance with the approved Closure Plan.

P. *ORGANIC WASTE* AND *COMPOSTING SITE*

54. **Service Area, Approved Waste Types, Rates & Storage**
(1) The *Composting Site* may only accept solid non-hazardous residential, commercial, institutional or industrial *Organic Waste* from the Provinces of Ontario, limited to the following *Organic Waste*:

(a) Source-Separated *Organic Waste* limited to the following:

(i) food wastes: fruit, vegetable and general table scraps, meat and fish/shellfish products, dairy products, eggs and egg shells, herbs, nuts and seeds, sugar and spices, confectionery products, sauces, bones, pet food, bread, grains, rice, pasta, flour, coffee grounds and tea bags;
(ii) solidified cooking oils and cooked or raw grease and fats from residential sources only;
(iii) paper fibres: soiled paper towels, tissues, paper plates, coffee filters, soiled paper food packaging items such as boxboard, cardboard, newspaper, and other paper fibre packaging materials;
(iv) fresh flowers, houseplants and their soil, hair, pet fur, feathers and sawdust, wood shavings;
(v) ashes from residential sources only;
(vi) pet waste that is not collected or encased in a bag; and
(vii) pet litter box or bedding wastes, including the intermingled pet waste;

(b) *Organic Waste* from the industrial, commercial and institutional sources that produce or collect food wastes;

(c) *Leaf and Yard Waste;* and

(d) *Compost* overs as described in the supporting documentation listed in the attached Schedule "A".

(2) The *Composting Site* may accept the following *Amendment Materials*:

(a) straw and hay; and
(b) *brush*, *Clean Wood* and Clean Wood products.

(3) The *Composting Site* may accept the *wood waste* and the *waste wood*, as defined in this *Certificate*, for processing to undertake size reduction on the paved outdoor pad referred to as the Amendment, Recyclables, and Leaf and Yard Staging Area, described in documentation listed in the attached Schedule "A", for the purpose of subsequent transfer from the *Composting Site*.

(4) (a) The *Owner* shall not accept at the *Composting Site* any cooked or raw grease and fats from industrial, commercial and institutional sources;

(b) The *Owner* shall not accept at the *Composting Site* animal carcasses, used sanitary products and human body waste;

(c) The *Owner* shall not receive pet waste from commercial, institutional or industrial sources;

(d) The *Owner* shall not accept at the *Composting Site* any *Organic Waste* that is collected through a waste collection program that allows use of bags, except the waste that is generated in and collected by the City of Guelph and in accordance with Table 1 entitled "Proposed Phase-out of Plastic Bag Usage in Organics Collection" included in Item #40 of the attached Schedule "A";

(e) The *Owner* shall ensure that the *Organic Waste* collected in bags in accordance with restrictions specified above, is given priority in the processing and transfer to the *Composting* tunnels;

(f) The *Owner* shall ensure that the *Organic Waste* collected in bags in accordance with restrictions specified above, is transported directly from the collection route to the *Composting Site,* without any intermediate transfer step; and

(g) The *Owner* shall not accept at the *Composting Site* any waste that is classified as hazardous waste or liquid industrial waste in accordance with *O. Reg. 347*.

(5) The *Owner* is only approved to receive *Organic Waste* in quantities that are not to exceed:

(a) a maximum of 450 tonnes on a daily basis; and

(b) a maximum of 60,000 tonnes per year.

(6) The *Owner* is approved to store a maximum of 8,500 tonnes of waste at the *Composting Site* at any one time.

(7) All waste and *Amendment Materials* storage at the *Composting Site* is subject to the following limitations:

(a) all unprocessed *Organic Waste* and the *Immature Compost* in various stages of curing and the *Finished Compost* shall be stored within the confines of the *Processing Building;*

(b) the *leaf and yard waste,* the *waste wood*, the *wood waste* and the *Amendment Materials* may be stored outdoors on the paved pad referred to as the Amendment, Recyclables, and Leaf and Yard Staging Area, described in documentation listed in the attached Schedule "A";

(c) all *Compost* shall be stored within the confines of the *Processing Building;*

(d) all solid *residual waste (Processing Building)* shall be stored within the confines of the *Processing Building;* and

(e) all solid *putrescible waste* generated through activities not relating to the handling and processing of *Organic Waste* (ie. office, lunch room, etc.) may be stored within the confines of the *Processing Building* and it shall be removed from the *Composting Site* as required in accordance with *O. Reg* 347 and the *EPA.*

(8) *Organic Waste* storage duration at the *Composting Site* is limited to the following:

(a) The *Owner* shall ensure that the *Organic Waste,* excluding the *leaf and yard waste,* received at the *Composting Site* is incorporated into active *Composting* process no later than thirty six (36) hours from the time of its receipt;

(b) The *Owner* shall ensure that the *Organic Waste* collected in bags in accordance with restrictions specified in this *Certificate*, is given priority in the processing and transfer to the *Composting* tunnels;

(c) The *Owner* shall ensure that the *leaf and yard waste* storage duration shall not exceed seven (7) calendar days from the time of its receipt;

(d) Notwithstanding provisions of Conditions 54.(8)(a) and (c), above, the *Owner* shall transfer all *Organic Waste* processed in the *Processing Building* into the *Composting* tunnels at the end of the operating day each Friday; and

(e) The *Owner* shall not store the *residual waste (Processing Building),*at the Site in excess of fourteen (14) days from the date of its generation, or as directed by the *District Manager.*

(9) (a) The *Owner* shall ensure that all outside storage of the *leaf and yard waste,* the *wood waste,* the *waste wood* and the *Amendment Materials* is undertaken in a manner that does not cause an adverse effect or a hazard to the environment or any person; and

(b) If in the opinion of the *District Manager*, the outside storage of the *leaf and yard waste,* the *wood waste,* the *waste wood* and the *Amendment Materials* results in odour complaint(s), the *Owner,* in consultation with the *District Manager* shall undertake appropriate steps, including reducing waste storage duration or the storage method, so that odour complaint(s) are eliminated.

(10) No outside waste storage of material from or for the Organic Waste Processing Facility other than the *leaf and yard waste,* the *waste wood,* the *wood waste* and the *Amendment Materials,* is approved under this Certificate."

(11) The *Owner* shall ensure that all *wood waste* and *waste wood* that has undergone size reduction at the Amendment, Recyclables, and Leaf and Yard Staging Area is segregated from the shredded *leaf and yard waste* and the *Amendment Materials* to prevent contamination of *Organic Waste* and *Amendment Materials* intended for the Composing Process.

(12) In the event that *Organic Waste* cannot be processed at the *Composting Site* in accordance with the requirements of this *Certificate*, the *Owner* shall cease accepting additional *Organic Waste* and shall remove all unprocessed *Organic Waste*

from the *Composting Site* in accordance with the procedures outlined in the *WRIC Environmental Emergency Plan*.

(13) All waste removed from the *Composting Site* shall be transferred to a waste disposal site for which a Provisional Certificate of Approval has been issued by the *Ministry* and the site is approved to receive this type and quantity of waste.

55. ***Composting Site* Security**
(1) The *Owner* shall ensure that all unloading and loading of waste and all *Organic Waste* processing activities at the *Composting Site* are at all times undertaken by *Trained Personnel.*

(2) The *Owner* shall ensure that the *Composting Site* is operated in a safe and secure manner, and that all waste is properly handled, packaged or contained and stored so as not to pose any threat to the general public and the *Composting Site* personnel.

56. ***Composting Site* Operations**

(1) The *Composting Site* is approved to operate within the following operating hours, subject to limitations of the local municipal by-laws:

Receipt and Removal of Waste from the Composting Site
(a) The *Owner* may only receive *Organic Waste* at the *Composting Site* and ship waste from the *Composting Site* between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday and between the hours of 8:00 a.m. and 4:00 p.m on Saturday;

Shipment of Compost from the Composting Site
(b) The *Owner* may only ship *Compost* from the *Composting Site* between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday and between the hours of 8:00 a.m. and 4:00 p.m on Saturday;

Processing Within the Processing Building
(c) The *Owner* may process the *Organic Waste* within the confines of the *Processing Building* twenty four (24) hours per day, seven (7) days per week;

Emergency Receipt of Waste
(d) The *Owner* may receive the *Organic Waste* at the *Composting Site* outside of the operating hours specified in sub-condition (a), above, on an emergency basis only;

(e) Within twenty four (24) hours from the emergency receipt of the *Organic Waste,* the *Owner* shall notify, in writing, the *District Manager* during regular business hours or verbally the Spills Action Centre, that the *Organic Waste* was received outside of the approved hours; and

(f) If in the opinion of the *District Manager,* the emergency receipt of the *Organic Waste* results in complaints, following the written notification from the *District Manager,* the *Owner* shall not receive the *Organic Waste* outside of the approved hours, until such time as the deficiencies causing complaints are rectified to the District Manager's satisfaction.

(2) **Incoming Waste/*Amendment Materials* receipt:**

(a) The *Owner* shall ensure that all unloading of the incoming *Organic Waste* at the *Composting Site*, takes place entirely within the confines of the *Processing Building;*

(b) Notwithstanding provisions of Condition 56.(2)(a), the *Owner* may unload the *leaf and yard waste,* the *wood waste,* the *waste wood* and the *Amendment Materials* outdoors on the paved pad referred to as the Amendment, Recyclables, and Leaf and Yard Staging Area, described in documentation listed in the attached Schedule "A";

(c) The *Owner* shall ensure that all loads of the incoming *Organic Waste,* excluding the *leaf and yard waste,* are accompanied by documentation containing the results of the required waste characterization as required by Condition 58.(2) or the identification of a pre-approved generator of waste as required by Conditions 58.(3)(b) and 58.(3)(c);

(d) *Trained Personnel* shall inspect the required documentation prior to acceptance of the incoming *Organic Waste* at the *Composting Site;*

(e) The *Organic Waste* that has not been characterized in accordance with this *Certificate* or that is not accompanied by the required documentation shall not be accepted at the *Composting Site;*

(f) *Trained Personnel* shall visually inspect all incoming *Organic Waste* to ensure that only approved waste type is accepted at the *Composting Site;*

(g) The *Owner* shall only accept the incoming *Organic Waste* that is delivered in vehicles that have been approved by the *Ministry,* as required; and

(h) In the event that *Organic Waste* cannot be processed at the *Processing Building,* the portion of *Organic Waste* originating from the geographical area of the City of Guelph may be accepted at the *Waste Transfer Station* and may be stored for a maximum of 24-hours.

(3) ***Rejected Waste (Organic Composting Facility)*** **handling:**

(a) In the event that *Rejected Waste* is inadvertently accepted at the *Composting Site*, the *Owner* shall ensure that all *Rejected Waste:*

(i) is stored in a way that ensures that no adverse effects result from such storage;
(ii) is segregated from all other *Organic Waste;*
(iii) is handled and removed from the *Composting Site* in accordance with *O.Reg. 347* and the *EPA; and*
(iv) is removed from the *Composting Site* within three (3) days of its receipt or as acceptable to the *District Manager;*

(b) In the event that *Rejected Waste* is inadvertently accepted at the *Composting Site*, a record shall be made in the daily log book or in an electronic file of the reason why the waste was rejected and of the origin of the waste, if known; and

(c) i) *Rejected Waste* may be transferred to the *Waste Transfer Station* in a covered container; and

ii) In the event that *Rejected Waste* is transferred to the *Waste Transfer Station,*it shall be handled on a priority basis and removed from the *Waste Transfer Station* on the same day that the transfer of *Rejected* Waste occurred on.

(4) ***residual waste (Processing Building)*** **handling:**

(a) Subject to Condition 56 (4) (b), the *Owner* shall ensure that storage of all solid *residual waste (Processing Building)* resulting from processing of the *Organic Waste* at the *Composting Site* is undertaken within the confines of the *Processing Building;*

(b) i) *residual waste (Processing Building)*may be transferred to the *Waste Transfer Station* in a covered container; and

ii) In the event that *residual waste (Processing Building)* is transferred to the *Waste Transfer Station,* it shall be handled on a priority basis and removed from the *Waste Transfer Station* on the same day that the transfer of *residual waste (Processing Building)* occurred on.

(5) **Waste Processing:**

(a) The *Owner* shall ensure that all *Organic Waste* preprocessing, other than the activities approved under

Condition 56.(5)(c)(i), all *Organic Waste Composting*, all *Immature Compost* screening and curing and all *Finished Compost* screening are undertaken within the confines of the *Processing Building;*

(b) The *Owner* shall segregate the *Immature Compost* at various stages of curing until all *Compost* quality criteria specified in this *Certificate* are tested for and met; and

(c) (i) *Brush*, *Clean Wood* and clean wood products, *wood waste* and *waste wood* may undergo size reduction by shredding, grinding and/or chipping using *Ministry* approved equipment on the outdoor paved pad referred to as the Amendment, Recyclables, and Leaf and Yard Staging Area, described in documentation listed in the attached Schedule "A"; and

(ii) The *Owner* shall take precautions to ensure that size reduction activities do not cause a nuisance or impact including by limiting the hours of operation and/or refraining from carrying out size reduction during days with unfavourable meteorological conditions.

(6) **Odour Control:**

(a) The *Owner* shall maintain a negative air pressure atmosphere within the *Processing Building,* as compared to the ambient atmospheric pressure, at all times;

(b) The *Owner* shall ensure that the outside loading bay doors into the *Processing Building* are kept fully closed at all times except to permit the entry or exit of maintenance and waste and *Compost* transportation vehicles;

(c) The *Owner* shall ensure that the outside loading bay doors of the Receiving Area of the *Processing Building* are equipped with the air curtains, as described in the documentation of the attached Schedule "A", and that these air curtains are installed and maintained in accordance with the recommendations of the equipment manufacturer;

(d) The *Owner* shall ensure that, at all times, the air from the *Processing Building* is exhausted through an appropriate *Air Pollution Control Equipment* approved by the *Ministry* in the *Certificate of Approval (Air/Noise);*

(e) If in the opinion of the *District Manager,* the fugitive air emissions originating from the *Processing Building* result in odour complaint(s), the *Owner* shall implement modifications to the *Processing Building* as proposed in the *WRIC Environmental Emergency Plan,* within the time frame acceptable to the *District Manager;*

(f) The *Owner* shall ensure that no equipment handling *Organic Waste* or their storage containers are kept outside, unless they have been washed to prevent odours; and

(g) (i) Prior to the receipt of *Organic Waste* at the *Composting Site*, the *Owner* shall undertake an appropriate test to confirm the integrity of the *Processing Building* containment;

(ii) This test shall be undertaken in accordance with the test protocol prepared in the consultation with and approved by the *District Manager;* and

(iii) This test shall be repeated as directed or agreed by the *District Manager.*

57. **Equipment and *Composting Site* Inspections & Maintenance**

(1) Prior to receipt of any *Organic Waste* at the *Composting Site*, the *Owner* shall prepare a comprehensive written inspection program which includes inspections of all aspects of the *Composting Site's* operations including the following:

(a) *Processing Building* including all outside bay doors, the *Air Pollution Control Equipment* and the presence of rust on metal surfaces within the confines of the *Processing Building;*

(b) on-*Site* roads for presence of leaks and drips from the waste delivery trucks;
(c) presence of excessive fugitive dust emissions from the on-*Site* roads;
(d) on and off-*Site* litter; and
(e) presence of vector and vermin.

(2) The inspections are to be undertaken daily by *Trained Personnel* in accordance with the inspection program to ensure that all equipment and facilities at the *Composting Site* are maintained in good working order at all times and that no negative impacts are occurring as a result of the *Organic Waste* management operations at the *Composting Site.* Any deficiencies detected during these regular inspections must be corrected as soon as reasonable.

(3) The *Owner* shall develop and implement a preventative maintenance program for all equipment associated with the processing and managing of *Organic Waste* at the *Composting Site* and with control of odour and dust emissions. The preventative maintenance program shall be maintained up-to-date and shall be available for inspection by a *Provincial Officer* upon request.

58._**Quality Criteria, Testing & Monitoring**

(1) **Cross-Contamination Prevention**

(a) The *Owner* shall ensure that the incoming *Organic Waste* is kept separate and does not come in contact with the *Immature Compost* / the *Finished Compost* and the *Compost* except where the *Immature Compost* / the *Finished Compost* and the *Compost* are being fed back into the *Composting* process; and

(b) The *Owner* may use the equipment utilized in processing of the incoming *Organic Waste* to process the *Immature Compost* / the *Finished Compost* and the *Compost* provided that the equipment has been cleaned, in accordance with the procedures described in documents listed in the attached Schedule "A", to prevent the *Immature Compost* / the *Finished Compost* and the *Compost* from being contaminated by the incoming *Organic Waste.*

(2) **Quality Control Monitoring of the *Organic Waste* at the generator site:**

(a) Prior to being accepted at the *Composting Site* for the first time, the incoming *Organic Waste* from a new source/stream shall be characterized in accordance with the *Ministry's* regulatory requirements for sampling and testing to ensure that the incoming *Organic Waste* complies with the quality criteria specified in this *Certificate*. The incoming *Organic Waste* may be considered a pre-approved waste source/stream once the incoming *Organic Waste* meets the required quality criteria and has been classified as such by the *Owner;* and

(b) The incoming *Organic Waste* shall be re-characterized following any process changes, operational issues or other factors that may affect the quality of the incoming *Organic Waste* from the pre-approved source/stream.

(3) **Quality Control Monitoring of the *Organic Waste* at the *Composting Site*:**

(a) The *Owner* shall not accept for *Composting* any individual *Organic Waste* source or an additive necessary for *Composting* that exceeds the following quality parameters set out in "Schedule B" of this *Certificate:*

(i) trace elements; and
(ii) organic chemicals;

(b) (i) Notwithstanding requirements from Condition 58.(2), the *Owner* shall conduct quality control monitoring of the incoming *Organic Waste* from each source/stream, except the *leaf and yard waste;* and

(ii) The *Owner* sample and analyze the incoming *Organic Waste* weekly; and

(c) (i) For the incoming *Organic Waste* from a particular source/stream with consistent quality as demonstrated through a minimum of four (4) analytical events spaced over a minimum of four (4) weeks, the *Owner* may reduce the sampling frequency to once every two (2) months; and

(ii) A minimum of seven (7) business days prior to the change in the *Organic Waste* sampling frequency, as permitted by Condition 58.(3)(b)(ii), the *Owner* shall submit a written notification of the proposed change to the *District Manager.*

***Compost* Quality Criteria**
(4) The *Finished Compost* is considered to be *Compost* when it meets the following *Compost* quality criteria:

(a) *Compost* quality criteria set out in Schedule "B" of this *Certificate*; and

(b) curing duration of a minimum of twenty one (21) days and compliance with one (1) of the following three (3) maturity criteria:

(i) the respiration rate is less than, or equal to, 400 milligrams of oxygen per kilogram of volatile solids (or organic matter) per hour; or

(ii) the carbon dioxide evolution rate is less than, or equal to, 4 milligrams of carbon in the form of carbon dioxide per gram of organic matter per day; or

(iii) the temperature rise of the *Compost* above ambient temperature is less than 8^{o}C.

Quality Control Monitoring of *Finished Compost*
(5) As a minimum, the *Owner* shall conduct quality control monitoring of the *Finished Compost* as follows:

(a) a composite sample, consisting of a minimum of ten (10) representative grab samples, shall be collected for every 500 tonnes of the *Finished Compost* produced during the first four (4) months of operation;

(b) following the first four (4) months of operation, a composite sample, consisting of a minimum of ten (10) representative grab samples, shall be collected every two (2) months representing all *Compost* generated within the preceding sixty (60) days or every 5,000 tonnes of the *Finished Compost,* whichever comes first;

(c) if non-compliance with the *Compost* quality criteria has taken place during three (3) consecutive sampling events, the *Owner* shall sample and test the *Finished Compost* in accordance with Condition 58.(5)(a) until compliance with the *Compost* criteria is demonstrated again; and

(d) all composite samples shall be analyzed for the parameters listed in Schedule "B".

Enhanced Pathogen Testing
(6) (a) As a minimum, the *Owner* shall conduct an enhanced pathogen quality control monitoring of the *Finished Compost* as follows:

(i) a composite sample, consisting of a minimum of ten (10) representative grab samples, shall be collected and tested for every 500 tonnes of the *Finished Compost;* and

(b) Prior to any change in the pathogen testing program, the *Owner* shall submit a minimum of one (1) year of the testing data that demonstrates compliance with the pathogens *Compost* quality criteria to the *District Manager.* This testing data shall be cross-referenced with the pasteurization temperature monitoring data required to be collected in Condition 58.(10).

Sampling And Testing Methods
(7) All sampling and testing required in this *Certificate* for the purpose of verifying compliance with the *Compost* quality criteria from Condition 58.(4) shall be undertaken in compliance with the document entitled “National Standard of Canada CAN/BNQ 0413-200/2005 Organic Soil Conditioners – Composts”, dated 2005, as amended.

Non-compliance with Compost Quality Criteria
(8) (a) The *Finished Compost* is classified as waste until sampling/testing required by this *Certificate* demonstrates that all *Compost* quality criteria specified in this *Certificate* are met;

(b) (i) The *Finished Compost* that does not meet the pathogen criteria from Schedule “B” and/or non-biodegradable matter criteria from Condition 58.(4) shall be moved back to the aerobic *Composting* tunnels for re-processing;

(ii) Should the *Finished Compost* consistently exceed the pathogen criteria set out in Schedule "B", as demonstrated by three (3) sampling/testing events, the *Owner,* in consultation with the *District Manager*, shall implement appropriate modifications to the *Composting* process to ensure consistent destruction of pathogens;

(iii) The *Finished Compost* that does not meet the maturation criteria from Condition 58.(4) shall be re-tested and shall not be removed from the Maturation Area of the *Processing Building* until the maturation criteria are met;

(iv) The *Finished Compost* that does not meet the trace elements and/or organic chemicals criteria from Schedule “B” shall be kept segregated from all other waste and from the *Compost* and shall be handled as waste; and

(v) The *Finished Compost* that continues to be classified as waste shall be handled and be disposed of in accordance with *O. Reg. 347* and the *EPA.*

Process Monitoring
(9) The *Owner* shall ensure that the following process parameters are monitored:

(a) temperature of the *Composting Organic Waste* in the *Composting* tunnels, as proposed in documentation in the attached Schedule "A";
(b) temperature of the headspace air in the *Composting* tunnels, as proposed in documentation in the attached Schedule "A";
(c) inlet air temperature;
(d) outlet air temperature;
(e) relative humidity in the *Composting* tunnels;
(f) air flow into the tunnels;
(g) oxygen content in the air; and
(h) temperature of the *Immature Compost* in the curing piles.

Compliance With *Composting* Process Operating Parameters
(10) (a) The *Owner* shall ensure that the *Organic Waste Composting* in the *Composting* tunnels, is maintained at a minimum pasteurization temperature of 55°C for a minimum of seventy two (72) hours, in accordance with the documentation listed in attached Schedule "A", to ensure complete inactivation of pathogens in the *Composting Organic Waste;*

(b) As a minimum, two (2) temperature probes shall monitor the required pasteurization temperature within the *Composting Organic Waste* and three (3) temperature probes shall monitor the headspace air temperature of each *Composting* tunnel;

(c) The pasteurization temperature measurements within the *Composting Organic Waste* must be taken one (1) metre inside the *Composting* stockpile mass; and

(d) Should temperature monitoring show that the required pasteurization temperature has not been achieved, the *Composting* process must be continued until the above requirement has been met.

Temperature Monitoring Within the Curing Stockpiles
(11) As a minimum, the *Owner* shall monitor the temperature of the *Immature Compost* within the curing stockpiles weekly. The measurements shall be taken one (1) metre inside the curing stockpile mass and at points sufficient to provide a temperature profile of the *Immature Compost*.

(12) The *Owner* shall not start the curing process duration countdown until the temperature monitoring required by Condition 58.(11), above, demonstrates that the temperature of the *Immature Compost* in the Maturation Area does not exceed 50 ^{O}C.

Odour Monitoring Program
(13) A minimum of ninety (90) days prior to any *Organic Waste* being received at the *Composting Site,* the *Owner* shall prepare and submit to the *District Manager* an Odour Monitoring Program. The Odour Monitoring Program shall be designed to detect and identify any odours originating from the operation of the *Composting Site* which may cause nuisance impacts. The Odour Monitoring Program shall include a description of the equipment and inspection protocol to ensure that negative pressure is maintained at all times throughout the *Processing Building.* The Odour Monitoring Program shall be implemented after written concurrence from the *District Manager* has been received. In the future, should it be necessary to modify the approved Odour Monitoring Program written authorization of the *District Manager* is required.

59. **Nuisance Impact Control & Housekeeping**

(1) The *Owner* shall ensure that all vehicles that have delivered *Organic Waste* to the *Composting Site* are not leaking or dripping waste when leaving the *Composting Site*.

(2) The *Owner* shall ensure that the exterior of all trucks delivering *Organic Waste* to the *Composting Site* is cleaned prior to leaving the *Composting Site,* as needed, to prevent odours. Truck washing shall occur only in the dedicated wash down area of the *Processing Building*.

(3) Should the *Owner* become aware that the truck(s) delivering waste to the *Composting Site* have leaked waste or wastewater on the municipal roadways, the *Owner* shall immediately submit a written and/or verbal notification to the owner of the leaking vehicle(s).

(4) The *Owner* shall:

(a) take all practical steps to prevent the escape of litter from the *Composting Site;*
(b) pick up litter around the *Composting Site* on a daily basis, or more frequently if necessary; and
(c) if necessary, erect litter fences around the areas causing a litter problem.

(5) Prior to the receipt of any *Organic Waste* at the *Composting Site,* the *Owner* shall:

(a) implement necessary housekeeping procedures to eliminate sources of attraction for vermin and vectors; and
(b) hire a qualified, licensed pest control professional to design and implement a pest control plan for the *Composting Site.* The pest control plan shall remain in place, and be updated from time to time as necessary, until the *Composting Site* has been closed and this *Certificate* has been revoked.

(6) The *Owner* shall ensure that all *Composting Site* roads and operations / yard areas are regularly swept / washed to prevent dust impacts from the *Composting Site*.

(7) The *Owner* shall store all *Compost* within the confines of the *Processing Building.*

(8) The *Owner* shall regularly clean and disinfect, if necessary, all equipment and storage areas that are used to handle and process waste at the *Composting Site*.

60. **Operations Manual & Staff Training**

(1) The *Owner* shall prepare an Operations Manual for use by the *Composting Site* personnel. The Operations Manual shall contain the following:

(a) outline the responsibilities of the *Composting Site* personnel;
(b) personnel training protocols;

(c) waste receiving and screening procedures;
(d) unloading, handling and storage procedures;
(e) waste processing and process monitoring procedures;
(f) sampling and testing procedures;
(g) *Composting Site* inspections and recording procedures;
(h) the emergency response procedures; and
(i) procedure for handling complaints as described in the *Certificate of Approval (Air/Noise)* for this *Composting Site.*

(2) A copy of this Operations Manual shall be kept at the *Composting Site,* must be accessible to personnel at all times and must be updated, as required.

(3) (a) All employees of the *Composting Site* shall be trained with respect to the following, as it is relevant to the employee's position:

(i) terms, conditions and operating requirements of this *Certificate*;
(ii) operation and management of the *Site,* or area(s) within the *Composting Site,* as per the specific job requirements of each individual employee, and which may include procedures for receiving, screening and identifying waste, refusal, handling, processing and temporarily storing wastes;
(iii) an outline of the responsibilities of the *Composting Site* employees including roles and responsibilities during emergency situations;
(iv) the *WRIC Environmental Emergency Plan*, including exit locations and evacuation routing, and location of relevant equipment available for emergency situations;
(v) environmental, and occupational health and safety concerns pertaining to the wastes to be handled;
(vi) emergency first-aid information;
(vii) relevant waste management legislation and regulations, including the *EPA* and *O. Reg. 347*;
(viii) recording procedures as required by this *Certificate*;
(ix) equipment and *Composting Site* inspection procedures, as required by this *Certificate*;
(x) nuisance impact control & housekeeping procedures, as required by this *Certificate*; and
(xi) procedures for recording and responding to public complaints as required by the *Certificate of Approval (Air/Noise)* for this *Composting Site.*

(4) The *Owner* shall ensure that all employees are trained in the requirements of this *Certificate* relevant to the employee's position:

(a) upon commencing employment at the *Composting Site* in a particular position;
(b) whenever items listed in Condition 60.(1) are changed; or
(c) during the planned three (3)-year refresher training.

61. ***Environmental Emergency Plan (Composting Facility)***

(1) The emergency response and contingency planning measures for the *Composting Site* that are required by Condition 45(a)(vi) shall include, as a minimum, the following information:

(a) procedures and actions to be taken should the incoming *Organic Waste* not meet the quality criteria specified by this *Certificate*;
(b) procedures and actions to be taken should the composted *Organic Waste* fail to meet the compost quality criteria specified by the *Certificate*;
(c) procedures and actions to be taken should the occurrence of the complaints require the *Owner* to suspend the waste processing activities at the *Composting Site;*
(d) modifications to the *Processing Building* and the implementation schedule should the fugitive odour emissions originating from the *Processing Building* result in odour complaints;
(e) procedures and actions to be taken should a long term power failure at the *Composting Site* or a suspension of waste processing activities require a phased *Re-Start-up* of operations; and
(f) procedures to be taken should it be necessary for the *Owner* to remove the unprocessed *Organic Waste* from the *Composting Site.*

(2) The emergency response and contingency planning measures for the *Composting Site* that are required by Condition 45(a)(vi) shall be prepared in consultation with the *District Manager,* the local Municipality and the Guelph Fire Department.

(3) As is required by Condition 45(c) of this Certificate, no waste shall be received at the *Composting Site* for storage or processing until the *District Manager* provides a written concurrence to the Plan.

62. **Emergency Response and Reporting**

(1) The *Owner* shall immediately take all necessary measures, as outlined in the applicable *WRIC Environmental Emergency Plan*, to handle the emergency situations occurring at the *Composting Site* and/or *Re-Start-up* of operations.

(2) The *Owner* shall ensure that the equipment and materials outlined in the applicable *WRIC Environmental Emergency Plan* are immediately available at the *Composting Site* at all times and are in a good state of repair and fully operational.

(3) The *Owner* shall ensure that all *Composting Site* personnel are fully trained in the use of the equipment and materials outlined in the applicable *WRIC Environmental Emergency Plan*, and in the procedures to be employed in the event of an emergency.

(4) All Spills, as defined in the *EPA*, shall be immediately reported to the ***Ministry's*** **Spills Action Centre at 1-800-268-6060** and shall be recorded in the log book as to the nature and cause of the spill, and the action taken for clean-up, correction and prevention of similar future occurrences.

(5) Should a Spill, as defined in the *EPA,* occur at the *Composting Site,* in addition to fulfilling the requirements from the *EPA,* the *Owner* shall submit to the *District Manager,* a written report within three (3) calendar days outlining the nature of the Spill, remedial measure taken and the measures taken to prevent future occurrences at the *Composting Site.*

63. **Records Keeping**

Daily Activities

(1) The *Owner* shall maintain an on-*Site* written or digital record of activities undertaken at the *Composting Site.* All measurements shall be recorded in consistent metric units of measurement. The record shall include, as a minimum, the following information:

(a) date, quantity, source and type of the *Organic Waste,* (including any analytical data), received at the *Composting Site;*
(b) date, quantity, type and the destination of the *Compost,* transferred from the *Composting Site;*
(c) date, quantity, type and the destination of the *residual waste,* transferred from the *Composting Site* for final disposal;
(d) date, quantity, type and the destination of the *Rejected Waste,* transferred from the *Composting Site;*
(e) pre-Composting and post-Composting processing activities undertaken at the *Composting Site;*
(f) tunnel loading / unloading activities and number of *Composting* tunnels actively undergoing *Composting*;
(g) amount of the *Immature Compost* transferred from the *Composting* tunnels to the curing area;
(h) housecleaning activities, including litter collection, floor and equipment washing;
(i) loss of negative pressure within the *Processing Building* and the activities undertaken to restore the required negative pressure; and
(j) results of the hydrogen sulphide and ammonia monitoring required by the *Certificate of Approval (Air/Noise)* for this *Composting Site.*

Monitoring Records

(2) (a) The *Owner* shall establish and maintain a written or digital record of all monitoring activities at the *Composting Site* as required by this *Certificate* and the *Certificate of Approval (Air/Noise)* for this *Composting Site;* and

(b) The *Owner* shall establish and maintain a tracking system that tracks the pasteurization temperature measurements from the *Composting* tunnels and the testing results from the enhanced pathogen testing required by this *Certificate*. This tracking system shall include, as a minimum, the following information:

(i) identification of the *Composting* tunnel used for the purpose of the *Organic Waste* pasteurization;
(ii) the in-waste and the headspace temperature during the *Composting Organic Waste* pasteurization cycle, as required by this *Certificate*; and
(iii) the results of the pathogen testing, as required by this *Certificate*.

Emergency Situations
(3) The *Owner* shall maintain an on-*Site* written or digital record of the emergency situations. The record shall include, as a minimum, the following:

(a) the type of an emergency situation;
(b) description of how the emergency situation was handled;
(c) the type and amount of material spilled, if applicable;
(d) a description of how the spilled material was cleaned up and stored, if generated; and
(e) the location and time of final disposal, if applicable.

Inspections
(4) The *Owner* shall maintain an on-*Site* written or digital record of inspections as required by this *Certificate*. The record shall include, as a minimum, the following:

(a) the name and signature of the *Trained Personnel* that conducted the inspection;
(b) the date and time of the inspection;
(c) the list of any deficiencies discovered;
(d) the recommendations for remedial action; and
(e) the date, time and description of actions taken.

Training
(5) The *Owner* shall maintain an on-*Site* written or digital record of training as required by this *Certificate*. The record shall include, as a minimum, the following:

(a) date of training;
(b) name and signature of employee who has been trained; and
(c) description of the training provided.

Sampling & Testing Records
(6) The *Owner* shall establish and maintain a written or digital record of all sampling and testing activities at the *Composting Site.* This record shall include, as a minimum, the following information:

(a) waste sampled, sample collection locations and volume collected;
(b) day and time of collection;
(c) sample handling procedures;
(d) parameters tested for and the resulting concentrations;
(e) name of the laboratory facility conducting the testing; and
(f) conclusions drawn with respect to the results of the testing.

Complaints Response Records
(7) The *Owner* shall establish and maintain a written or digital record of complaints received and the responses made as required by the *Certificate of Approval (Air/Noise)* for this *Composting Site.*

Annual Report
(8) By March 31st following the end of each operating year, the *Owner* shall prepare and submit to the *District Manager,* an Annual Report summarizing the operation of the *Composting Site* covering the previous calendar year. This Annual Report shall include, as a minimum, the following information:

(a) a monthly mass balance of the *Organic Waste* received, processed and transferred from this *Composting Site,* including waste type, quantity, sources and/or disposal destinations;
(b) an annual summary mass balance of the *Organic Waste,* the *wood waste,* the *waste wood* and the Amendment Material received, processed and transferred from this *Composting Site,* including waste type, quantity, sources and/or disposal destination;
(c) an annual summary of any deficiencies, items of non-compliance or process aberrations that occurred at this *Composting Site* and any remedial / mitigative action taken to correct them;
(d) a descriptive summary of any spills, *incidents* or other emergency situations which have occurred at this *Composting Site,* any remedial measures taken, and the measures taken to prevent future occurrences;
(e) a summary describing any *Rejected Waste* including quantity, waste type, reasons for rejection and origin of the *Rejected Waste;*
(f) the quantity, by weight and volume of *Compost* and residues produced and the quantity of *Compost* and residues removed from the facility;
(g) any environmental and operational problems, that could negatively impact the environment, encountered during the operation of the *Composting Site* or identified during the facility inspections and any mitigative actions taken;
(h) any changes to the *WRIC Environmental Emergency Plan*, the Operations Manual or the Closure Plan that have been approved by the *Director* since the last Annual Report;
(i) any recommendations to minimize environmental impacts from the operation of the *Composting Site* and to improve *Composting Site* operations and monitoring programs in this regard;
(j) a summary of any complaints received and the responses made, as required by the *Certificate of Approval (Air/Noise)* for the *Composting Site;*
(k) a description of the *Compost* distribution/markets;
(l) conclusions from the enhanced pathogen testing as the results relate to the pasteurization temperature monitoring; and
(m) a condition-by-condition analysis of compliance with all Conditions of this *Certificate*.

64. **Wastewater Management**
(1) The *Owner* shall ensure that all wastewater generated within the *Processing Building* is:

(a) contained within the *Processing Building* and the storage tanks approved by this *Certificate*;
(b) collected in the sufficiently designed wastewater storage facilities; and
(c) either utilized in the process or discharged to the sanitary sewer or disposed of at a *Ministry* approved site.

(2) The *Owner* shall regularly empty, clean and disinfect if necessary, all sumps or wastewater storage/holding areas that are used to contain and collect the wastewater generated within the *Processing Building.*

(3) The *Owner* shall ensure that only uncontaminated water is used to irrigate the *Composting Organic Waste* after the *Composting Organic Waste* has completed the pasteurization phase of the *Composting* Process.

(4) The *Owner* shall ensure that the impermeable membrane under the *Processing Building* is installed in accordance with the manufacturer specifications to ensure its integrity and effectiveness as a wastewater leak barrier.

65. **Closure Plan**

(1) (a) The *Owner* shall submit, for approval by the *Director,* a written Closure Plan for the *Composting Site* at least six (6) months prior to closure of the *Composting Site.* This plan shall include, as a minimum, a description of the work that will be done to facilitate closure of the *Composting Site* and a schedule for completion of the required work; and

(b) Within ten (10) days after closure of the *Composting Site,* the *Owner* shall notify the *Director,* in writing, that the *Composting Site* is closed and that the *Composting Site* Closure Plan has been implemented.

66. ***Ministry's* Supplementary Requirements**

Unless otherwise specified by the conditions of this *Certificate*, the *Owner* shall comply with the requirements of the *Ministry's* document entitled "Interim Guidelines for the Production and Use of Aerobic Compost in Ontario", dated November 2004, as amended.

67. **Q. LIMITED OPERATIONAL FLEXIBILITY – Design, Operation and Management**

(1) The *Owner* may make *Modifications* to the *Material Recovery Facility* (*MRF*), and the *Waste Transfer Station* and the Design and Operations Reports for the *Material Recovery Facility* and the *Waste Transfer Station* in accordance with this *Certificate* and the pre-approved changes of the *Operating Envelope* as described in the *Engineer's Report* that is identified in Item 52 of Schedule "A".

(2) For greater certainty, the follow are *Modifications* that would be allowed at the *MRF* or the Transfer Station:

1) The following *Modifications* to the *infrastructure;* i) replacement of truck doors;
ii) the installation of a coverall building to house a maximum of 1000 tonnes of recyclable wastes; iii) movement or *Modifications* to the staging area for recyclable materials; iv) additional outdoor storage of recyclable materials in staging area on an asphalt
pad;
v) landscaping changes; vi) on-*Site* roadway changes; vii) relocation of scales;
viii) Installation of additional parking stalls and/or rearrangement of parking
areas; ix) Installation or *Modifications* to lighting; x) Construction of a facility for the collection and distribution of reusable items
xi) installation or *Modifications* to signage;
xii) changes to improve the working environment for the employees within the *MRF* or Transfer Station such as installation or improvements to heating units, air conditioning units, air handling units, odour control systems or dust control systems as long as such changes would occur within the building and would not adversely effect the surroundings environment and would not require an application for a Section 9 Certificate of Approval; and

2) The ability to make *Modifications* to the *Site's* processing operations and equipment to improve the efficiency and effectiveness of the operation of the Waste Transfer Site or the Municipal Recycling Facility such as:

i) *Modifications* or repairs to the building and its facilities including walls, floors, pits, roof, doors, plumbing, and electrical;
ii) The installation or replacement of recycling or transfer plant equipment such as balers, conveyors, separation equipment, and compactors;
iii) Addition or replacement of mobile equipment for use of the *Waste Transfer Station* or the Municipal Recycling Facility; and
iv) relocation and modification of maintenance and waste processing operations inside the building used for the *Waste Transfer Station* or the Municipal Recycling Facility.

(3) For greater certainty, the following *Modifications* to the *Site* are not permitted as part of the *Operating Envelope:*

i) Any changes to the *MHSW;*
ii) Any changes to the *Organic Waste* Processing Facility;
iii) *Modifications* to the type of waste accepted at the *Site*;
iv) *Modifications* to the storage capacity of the *Waste Transfer Station* or the Municipal Recycling Facility;
v) extending the *Site* onto adjacent lands;
vi) changing the function of the approved operations of the *MRF* and the *Waste Transfer Station*;
vii) accepting hazardous waste, liquid industrial waste, or municipal or industrial sewage;
viii) changes to the *Site* not identified in the *Engineer's Report;* or
ix) changes to the *Site* that have requirements under the Environmental Assessment Act.

(4) The *Owner* shall provide a written notification to the *District Manager* and *Director* at least fifteen (15) days prior to

making *Modifications* to the *Site* in accordance with 67(1) At a minimum the notification shall include the following:

(1) a description of the change to the operations of the *Site* including an assessment of the anticipated environmental effects of the *Modifications;*

(2) updated versions of, or amendments to, all relevant technical documents required by this *Certificate* that are affected by the Modification including but not necessarily limited to an updated *Site* Plan drawing, Design and Operations Report, the Emergency Response, Spill Reporting and Contingency Plan and the Closure Plan including a document control record that tracks all changes that were made to the documents; and

(3) a statement signed by the *Owner* and an *Independent Professional Engineer* declaring that the *Modifications* made to the *Site* are done so in accordance with the *Operating Envelope,* are consistent with industry's best management practices and are not likely to result in an adverse effect.

(5) Notwithstanding Condition 67(4), if the *Modifications* made to the *Site* require an amendment to the *WRIC Environmental Emergency Plan*, the *Owner* shall obtain the authorization of the local fire services authority prior to instituting the *Modifications.* A copy of the approved plan must be forwarded to the *District Manager* within fifteen (15) days of such approval.

68. **Design and Operations Report**

(1) The Design and Operations Reports shall be retained at the *Site*; kept up to date; and be available for inspection by *Ministry* staff. The Design and Operations Report shall contain at a minimum the information specified for a waste processing site as described in the most recent version of the *Ministry* publication "Guide for Applying for Approval of Waste Disposal Site".

(2) The *Owner* may amend the *Current Design and Operations Reports* for the *MRF* and the *Waste Transfer Station* in accordance with Condition 67(1) of this *Certificate*.

(3) Changes to the Design and Operations Reports, with the exception of changes made under Condition 67(1), shall be submitted to the *Director* for approval.

(4) If the *Owner* has made *Modifications* to the *Site* in accordance with Condition 67(1), the *Owner* shall ensure that the *Site* is built, operated and maintained in accordance with the *current Design and Operations Report*.

(5) The *Owner* shall maintain a document control record at the *Site* that tracks all changes that are made to the Design and Operations Report.

(6) The *Owner* may accept any solid Municipal Waste at the *Site* if the *Owner* has received written notification from a *Ministry* employee appointed for the purposes of Section 31 of the EPA, including the *Director* and *District Manager,* advising the *Owner* that the waste may be received to alleviate an emergency described in Section 31 of the EPA.

SCHEDULE "A"

This Schedule "A" forms part of this Certificate.

1. Applications for a Certificate of Approval for a Waste Disposal Site (Processing & Transfer) dated August 27, 1991, September 10, 1993, and January 2, 2007 and supporting documentation submitted therewith.

2. Applications for Certificate of Approval for a Waste Disposal Site (Processing & Transfer) submitted on April 4, 2008, February 24, 2009, October 22, 2009 and January 12, 2010 by Bill Shields, Supervisor, Governance & Compliance, City of Guelph Solid Waste Resources Division, including the Report, dated October 2009 and prepared by Golder Associates Ltd.and all other supporting documentation.

3. Applications for a Provisional Certificate of Approval for a Waste Disposal Site dated January 30, 2002 and February 1, 2005 signed by Cathy Smith, Manager, Solid Waste Resources Division, Corporation of the City of Guelph and other

supporting documentation.

4. Application for a Provisional Certificate of Approval for a Waste Disposal Site signed by Janet Laird, Director of Environmental Services, City of Guelph, dated February 17, 2006.

5. Plume Visibility Study, Wet/Dry Processing Facility, Guelph, Ontario dated November 20, 1991.

6. Evaluation of Potential Birds Hazards to Aircraft Safety Associated with the City of Guelph's Proposed Wet/Dry Recycling Facility Adjacent to the Guelph Air Park, dated March 5, 1992.

7. Letter from Mr. Dean Wyman, Manager, Solid Waste Resources Division, City of Guelph, to EAAB, dated June 12, 2006 requesting amendments to Certificate of Approval No. 9241-5DTRD9 and providing the rationale for the proposed amendments.

8. Letter to E. Gill, Ministry of Environment from K.J. Bull, City of Guelph, dated December 18, 1992 and additional information submitted therewith including the document "City of Guelph Hazardous Waste Facility Operation Manual" dated December 1992.

9. Letter and supporting documentation dated April 4, 1994, to Mr. H. M. Wong, Ontario Ministry of Environment and Energy from Mr. Richard Cave, R. Cave and Associates Ltd.

10. Letter date March 31, 1995 to the Ministry of Environment and Energy, Cambridge *District Office* from R.D. Funnell, P.Eng., City Engineer, re: Wet-Dry Recycling Centre - Annual Report.

11. Letter dated May 16, 1995 to Dave Ross, Ministry of Environment and Energy, from R.D. Funnell, P.Eng., City Engineer, RE: City of Guelph's Application to Amend Provisional Certificate of Approval No. A170128 for Waste Disposal Site (Processing) with the attached Application for an Approval of Waste Disposal Site dated May 17, 1995.

12. Letter dated December 30, 1996, to Mr. H. Wong, Ministry of Environment and Energy, West Central Region from R.D. Funnell, P.Eng., Director of Works, RE: Amendments to Certificate of Approval (Waste Disposal) No. A170128 for the City of Guelph's Wet-Dry Recycling Centre, including application dated December 31, 1996 and supporting documentation.

13. Letter dated July 14, 1997 to Mr. Hardy Wong, Director, West Central Region from Jutta Siebel, Wet-Dry Residential Coordinator, RE: City of Guelph's Wet-Dry Recycling Centre Certificate of Approval No. A170128.

14. Letter and application from Janet Laird, Manager of Solid Waste Services, City of Guelph to G. Carpentier, MOE dated April 3, 1998 re: Amendment to Certificate of Approval A170128.

15. Letter from Jutta Siebel, Wet-Dry Residential Coordinator, City of Guelph to G. Carpentier, dated May 4, 1998 re: Public Consultation and Analytical Data.

16. The covering letter from Ms. J. Laird, Manager of Solid Waste Services, City of Guelph to Mr. G. Carpentier, MOE, dated May 27, 1998 with attachments:

(a) Application for approval of a waste disposal site.
(b) Public consultation process for amendments to Certificate of Approval No. A170128.

17. The covering letter from Ms. J. Laird, to Mr. G. Carpentier, dated June 19, 1998 with attachments:

(a) Waste acceptance policy at the wet-dry recycling centre;
(b) Section 2.9 "Penalties for Improper Disposal" from the "A Guide for Solid Waste Disposal at Eastview Sanitary Landfill Site and the Wet-Dry Recycling Centre";
(c) Contingency plan for "odourous" wet/organic waste received at the wet-dry recycling centre.

18. Letter and application from Janet Laird, Manager of Solid Waste Services, City of Guelph, to G. Carpentier, MOE, dated October 26, 1998, re: Amendment to Provisional Certificate of Approval A170128.

19. Facsimile from Jutta Siebel, Wet-Dry Residential Coordinator, City of Guelph, to Stephen Rouleau, MOE, dated January 13, 1999, re: Copper and Mercury Levels in Compost.

20. Facsimile from Jutta Siebel, Wet-Dry Residential Coordinator, City of Guelph, to Stephen Rouleau, MOE, dated January 15, 1999 re: Copper and Mercury Levels in *leaf and yard waste.*

21. Letter and application from Janet Laird, Manager of Solid Waste Services, City of Guelph, to Adam Ciulini, MOE, dated February 12, 1999, re: Rationale for Amendment.

22. Memorandum from Adam Ciulini, MOE, to A. Dominski, MOE, dated April 12, 1999, re: Waste Management Policy Branch's Support of the Amendment.

23. Letter and application from Janet Laird, Manager of Solid Waste Services, City of Guelph to G. Carpentier, MOE, dated August 19, 1999, re: Amendment to Certificate of Approval No. A170128.

24. Document entitled City of Guelph - Request for Amendments to Provisional Certificate of Approval No. A170128, prepared for City of Guelph, prepared by Gartner Lee Limited, dated February 2006 except for Section 2.4, 2.6, 3.4 and 3.5 which are not approved by the Director.

25. Letter from Dean Wyman, Manager, Solid Waste Resources Division, City of Guelph, to EAAB, dated June 12, 2006 re: changes to and clarification of document submitted in support of the application for amendments.

26. Email from Dean Wyman, Manager, Solid Waste Resources Division, City of Guelph, to Veronica Pochmursky, EAAB, sent September 6, 2006, re: City of Guelph's procedures for *Clean Wood* and contaminated wood and final destination of contaminated or combined wood.

27. Letter Dated February 8, 2007 from Bill Shields, Supervisor, Governance and Compliance, City of Guelph to T. Gebrezghi, MOE, amendment of Section (C) of Page 1 of the CofA;

28. Letter dated March 14, 2007 from Khaled Mamun, P. Eng., EAAB to Jennifer Turnbull, City of Guelph, requesting for additional information;

29. Fax dated March 28, 2007 from Dean Wyman, Manager, Solid Waste Resources Division, City of Guelph to Khaled Mamun, P. Eng., MOE, submission of the additional information.

30. Fax dated April 11, 2007 from Dean Wyman, Solid Waste Resources Division, City of Guelph to Khaled Mamun, P. Eng., MOE, re: addition of Waste Class 121.

31. Document "City of Guelph Household Hazardous Waste Depot Request for Amendment to Certificate of Approval A170128", dated April 2008, including all appendixes.

32. E-mail dated February 2, 2010 (4:44 p.m.) from Amy Burke, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "08-1112-0126 LET 2010'02'02 MOE Response.pdf" to provide additional information on the proposal.

33. E-mail dated February 17, 2010 (11:12 a.m.) from Ravi Mahabir, Golder Associates Ltd., to Bijal Shah and Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "0811120126 City of Guelph OWPF Response to MOE 17Feb10.pdf" to provide additional information on the proposal.

34. E-mail dated March 1, 2010 (7:46 a.m.) from Amy Burke, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "08-1112-0126 MEM 2010'02'25.pdf" to provide additional information on the proposed air curtains.

35. E-mail dated March 30, 2010 (4:56 p.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "0811120126 City of Guelph OWPF Response to MOE 30Mar,2010.pdf" to provide additional information on the proposal.

36. E-mail dated April 8, 2010 (2:23 p.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "0811120126 City of Guelph OWPF Response to MOE 8Apr10.pdf" to provide additional information on the proposal.

37. E-mail dated April 9, 2010 (8:27 a.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "Revised Flowchart April 9,2010.pdf" to provide a correction to the previously submitted information.

38. E-mail dated April 09, 2010 (11:08 a.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "08375-801-W02-1a.pdf" to provide additional information on the proposal.

39. E-mail dated April 28, 2010 (1:06 p.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "0811120126 City of Guelph OWPF Responses to MOE 28Apr10.pdf" to provide additional information on the proposal.

40. E-mail dated May 05, 2010 (9:24 a.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "0811120126 City of Guelph OWPF Responses to MOE 4May,2010 FSC.pdf" to provide additional information on the proposal including the schedule for phasing out the use of plastic bags to collect the *Organic Waste* in the City of Guelph, the approach to temperature monitoring of material within *Composting* tunnels.

41. E-mail dated May 7, 2010 (2:36 p.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, to clarify the proposal with respect to mixing of the *Composting* waste.

42. E-mail dated May 7, 2010 (3:52 p.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, to confirm that the acid spray system will be installed and operational at the start-up of the *Composting Site.*

43. E-mail dated May 11, 2010 (2:49 p.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "compost temperatures.pdf" to provide data on compost temperature from two different monitoring methods.

44. E-mail dated May 26, 2010 (2:30 p.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "0811120126 Draft CofA Review - Supporting Information RSM May 25,2010.pdf" providing additional clarification on the types of wastes to be received at the *Composting Site.*

45. E-mail dated June 2, 2010 (10:41 a.m.) from Amy Burke, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, providing additional clarification on the types of amendment and other wastes to be received at the *Composting Site,* the equipment decontamination procedure and the proposed pasteurization temperature monitoring.

46. E-mail dated June 18, 2010 (8:08 a.m.) from Bill Shields, Corporation of the City of Guelph, to Margaret Wojcik, Ontario Ministry of the Environment, including attachments entitled "Fig1_GuelphWRIC_Screening.pdf, Fig2_GuelphWRIC_Screening.pdf, Fig1_GuelphWRIC_Screening Option 3 (2010-05-04).pdf" describing the visual screening features and the landscaping completed at the Site.

47. E-mail dated June 25, 2010 (12:38 p.m.) from Amy Burke, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including attachments entitled "0811120126 Draft CofA Review - Additional Comments 2010'06'25.pdf" and "0811120126 Draft CofA Review - Addition Comments 2010'06'23 Site_Layout_v2.pdf" showing the location of the outdoor paved pad referred to as the Amendment, Recyclables, and Leaf and Yard Waste Staging Area and describing handling of wastes at the said outdoor pad.

48. Letter from Mr. Dean Wyman, Manager, Solid Waste Resources Division, City of Guelph, to EAAB, dated June 12, 2006 requesting amendments to Certificate of Approval No. 9241-5DTRD9 and providing the rationale for the proposed amendments.

49. The Design and Operations Report for the City of Guelph *Material Recovery Facility* prepared by Golder Associates, dated January 12, 2010.

50. The Design and Operations Report for the City of Guelph *Waste Transfer Station* prepared by Golder Associates, dated January 12, 2010.

51. The Design and Operations Report for the City of Guelph WRIC Public Drop Off and *Municipal Hazardous and Special Waste* Facilities prepared by Golder Associates, dated January 12, 2010 and supplemental information provided by e-mail from Pamela Russell, P.Eng. of Golder Associates, to Jim Chisholm, P.Eng., Senior Review Engineer of the Ministry.

52. Engineers Report for the City of Guelph Waste Recycling Innovation Centre prepared by Golder Associates dated July 20, 2010 and provided by e-mail from Pamela Russell, P.Eng. of Golder Associates, to Jim Chisholm, P.Eng., Senior Review Engineer of the Ministry.

53. e-mail of July 20, 2010 from Pamela Russell of Golder Associate, to Jim Chisholm, Senior Review Engineer, Ministry of Environment along with attachments.

54. e-mail of Nov. 2, 2010 from Amy Burke of Golder Associates to Jim Chisholm, Senior Review Engineer, Ministry of Environment.

SCHEDULE "B"

This Schedule "B" forms part of this Certificate of Approval.

Compost Quality Criteria

Parameter		**Concentration**
Trace Elements (mg/kg dry weight)[1]	arsenic	13
	cadmium	3
	chromium	210
	cobalt	34
	copper	100
	lead	150
	mercury	0.8
	molybdenum	5
	nickel	62
	selenium	2
	zinc	500
Organic chemicals (mg/kg dry weight)[1]	*PCBs*[2]	0.5
Pathogens	fecal coliforms	<1000 MPN/g of total solids calculated on a dry weight basis[3]
	salmonellae	<3 MPN/4g total solids calculated on a dry weight basis[3]
Non-biodegradable matter[4] % dry weight	plastic	1
	other	2

Note 1 – means milligrams per kilogram

Note 2 - means polychlorinated biphenols
Note 3 - means “Most Probable Number”
Note 4 - will not fit through a size 8 mesh

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

1. The reason for Conditions 1 to 5 inclusive and Conditions 10 and 11 is to clarify the legal rights and obligations of this Certificate.

2. The reason for Condition 6 is to ensure that the Site is operated under the corporate, limited or applicant's own name which appears on the application and supporting information submitted with the application and not under any name which the Director has not been asked to consider.

3. The reason for Conditions 7, 8 and 9 is to ensure that Ministry personnel, when acting in the course of their duties, will be given unobstructed access to the information and records related to the Site which are required by this Certificate, and to enable the Ministry to be assured of the City's compliance with the terms and conditions stated in this Certificate.

4. The reason for Conditions 16, 17, 18, 19, 20, 21, 22, and 24, is to minimize and/or prevent nuisance or adverse environmental affects from occurring. The use and operation of the Site without these conditions may create a nuisance or result in a hazard to the health and safety of any person or the environment.

5. The reason for Condition 23 is to ensure that there is no adverse impact on aircraft safety in the area and no net increase in the bird population in the area, as a result of the use and operation of this Site.

6. The reason for Conditions 12(a), 12(b), 13 and 14 is to ensure that the Site is operated in accordance with the application and supporting documentation for this Certificate and not in any manner which the Director has not been asked to consider. The operation of the Site without these conditions would not be in the public interest and may result in unacceptable environmental impacts. The imposition and compliance with these conditions will further ensure that the facility is operated and monitored in accordance with established procedures and practices for this type of facility.

7. The reason for Condition 15 is to outline the maximum amount of residual waste that can be taken from the Site in one day. Any amount above an average o 1000 tonnes per day requires an Environmental Assessment.

8. The reason for Condition 25 is to ensure that the Site will not be operated at hours during which such operation could cause material discomfort to any person.

9. The reason for Condition 26, 27, 28 is to have personnel that have the sufficient skills, knowledge and experience to do the work that is necessary at the Site.

10. The reason for Condition 29 and 30 is to require the Owner to establish a forum and provide reasonable access to the Site for the exchange of information and public dialogue on activities carried out at the Composting Site and other parts of the Site. Open communication with the public and local authorities is important in helping to maintain high standards for the operation of the Composting Site and other parts of the Site and protection of the natural environment. The use and operation of the Site without this condition would not be in the public interest.

11. The reason for Condition 31 is to protect the environment from an adverse effect as a result of activities at the Site.

12. The reason for Conditions 32, 33, 34, 35, and 36 is to minimize the risk of environmentally unacceptable discharges of a contaminant into the environment. Compliance with the monitoring programs outlined in these conditions will enable the City to allow for an early detection system for any unacceptable discharges of contaminants and allow for the implementation of a contingency plan.

13. The reason for Condition 37 is to minimize the risk of vandalism and to ensure that the Site is only operated in the presence of competent people to ensure the waste is properly managed.

14. The reason for Conditions 38, 39, 40, 41, 42, 43, and 44 to ensure the Site is operated in accordance with the application and this Certificate and not in any manner which the Director has not been asked to consider. Operation of the Site without these conditions would not be in the public interest.

15. The reason for Condition 45 is to ensure the City has an up-to-date Environmental Emergency Plan for the Site for the prompt control, abatement, mitigation and clean-up of emergency incidents, accidental discharge of contaminants, potential environmental or nuisance related impacts.

16. The reason for Condition 46 is to ensure that the City has a robust Complaints Procedure

17. The reason for Condition 47 is to make sure that the City takes immediate measures to responds to a spill and process upset and informs the Ministry immediately of such spills or upset.

18. The reason for conditions 48, 49, 50, 51, and 52 is so that the City have a robust inspection program at the site and that the inspections are properly recorded and an annual summary of activities at the site are sent to the ministry.

19. The reason for Condition 53 is to ensure the orderly shut down of the composting facility or other parts of the site.

20. Condition 54. is included to specify the approved Organic Waste receipt rate, the approved Organic Waste types and the service area from which the Organic Waste may be accepted at the Composting Site based on the Owner's application and supporting documentation.

21. Condition 55. is included to ensure that the Composting Site is sufficiently secured, supervised and operated by properly Trained Personnel and to ensure controlled access and integrity of the Composting Site by preventing unauthorized access when the Composting Site is closed and no Composting Site personnel is on duty.

22. Condition 56.(1) is included to specify the hours of operation for the Composting Site to ensure that the hours of the Composting Site's operation do not result in an adverse effect or a hazard to the natural environment or any person.

23. Condition 56.(2) is included to ensure that only the approved waste types are accepted and processed at the Composting Site.

24. Condition 56.(3) is included to specify the requirements for handling of the Rejected Waste that was inadvertently received at the Composting Site.

25. Conditions 56.(4) and (5) are included to ensure that waste and amendment materials handling and storage are undertaken in done in a way which does not result in an adverse effect or a hazard to the environment or any person.

26. Condition 56.(6) is included to specify odour control measures to minimize a potential for odour emissions from the Composting Site.
27. Condition 57. is included to require the Composting Site to be maintained and inspected thoroughly and on a regular basis to ensure that the operations at the Composting Site are undertaken in a manner which does not result in an adverse effect or a hazard to the health and safety of the environment or any person.

28. Condition 58. is included to require the Owner to characterize all waste received at the Composting Site and shipped off the Composting Site to ensure that only waste approved by this Certificate is handled at the Composting Site and that all waste transferred off the Composting Site is handled in accordance with the Ministry's requirements. Condition 38. is also included to require the Owner to monitor the Composting process parameters.

29. Condition 59. is included to ensure that the Composting Site is operated and maintained in an environmentally acceptable manner which does not result in a negative impact on the natural environment or any person.

30. Condition 60. is included to ensure that personnel employed at the Composting Site are fully aware and properly trained on the requirements and restrictions related to Composting Site operations under this Certificate.

31. Condition 61. is included to ensure that the Owner is prepared and properly equipped to take action in the event of an emergency situation.

32. Conditions 62. also is included to require further spill notification to the Ministry, in addition to the requirements already listed in Part X of the EPA.

33. Condition 63. is included to ensure that detailed records of Composting Site activities, inspections, monitoring and upsets are recorded and maintained for inspection and information purposes.

34. Condition 64. is included to ensure that the wastewater generated at the Composting Site is handled in accordance with the Ministry's requirements and in a manner which does not result in a negative impact on the natural environment or any person.

35. Condition 65. is included to ensure that final closure of the Composting Site is completed in accordance with Ministry's standards.

36. Condition 66. is included to require the Owner to design, operate, maintain and monitor the waste management activities at the Composting Site in compliance with the Ministry's supplementary requirements as they become published and amended from time to time.

37. The reason for Conditions 67 and 68 is to ensure that the Site is operated in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.

This Provisional Certificate of Approval revokes and replaces Certificate(s) of Approval No. A170128 and 9241-5DTRD9 issued on September 29, 2006 and April 24, 2003 respectively.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

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

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

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

This Notice must be served upon:

The Secretary* Environmental Review Tribunal 655 Bay Street, 15th Floor Toronto, Ontario M5G 1E5	AND	The Director Section 39, *Environmental Protection Act* Ministry of the Environment 2 St. Clair Avenue West, Floor 12A Toronto, Ontario M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted waste disposal site is approved under Section 39 of the Environmental Protection Act.

DATED AT TORONTO this 10th day of February, 2011

Tesfaye Gebrezghi, P.Eng.
Director
Section 39, *Environmental Protection Act*

JC/
c: District Manager, MOE Guelph
Pamela Russell, Golder Associates Ltd.

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDMENT TO PROVISIONAL CERTIFICATE OF APPROVAL
WASTE DISPOSAL SITE
NUMBER A170128
Notice No. 1
Issue Date: September 22, 2011

The Corporation of the City of Guelph
1 Carden St
Guelph, Ontario
N1H 3A1

Site Location: 110 Dunlop Drive
Division 'C', RP 61R-5574
Lot 4 and 5, Concession 1
Guelph City, County of Wellington
N1H 6N1

You are hereby notified that I have amended Provisional Certificate of Approval No. A170128 issued on February 10, 2011 for the use and operation of a 29.54 hectare Waste Disposal Site (Transfer/Processing) *, as follows:*

1. The following Condition 58.(1) is amended to read as follows:

58. **Quality Criteria, Testing & Monitoring**

(1) **Cross-Contamination Prevention:**

(a) The *Owner* shall ensure that the incoming *Organic Waste* is kept separate and does not come in contact with the *Immature Compost* / the *Finished Compost* and the *Compost* except where the *Immature Compost* / the *Finished Compost* and the *Compost* are being fed back into the *Composting* process.

(b) The *Owner* may use the equipment utilized in processing of the incoming *Organic Waste* to process the *Immature Compost* / the *Finished Compost* and the *Compost* provided that the equipment has been cleaned, in accordance with the procedures described in documents listed in the attached Schedule "A", to prevent the *Immature Compost* / the *Finished*

Compost and the *Compost* from being contaminated by the incoming *Organic Waste.*

(c) The *Owner* may use the equipment utilized in screening of the *Immature* Compost to screen the *Compost* provided that the screening equipment has been adequately cleaned prior to its use to screen the Compost and in accordance with the procedures described in documents listed in the attached Schedule "A", to prevent the *Compost* from being contaminated by the *Immature Compost.*

2. The following documents are added to Schedule "A":

55. The application for the Certificate of Approval for a Waste Disposal Site, dated September 8, 2011 and signed by Bill Shields, Corporation of the City of Guelph, including the following attachments:

(a) E-mail dated September 2, 2011 (11:17 a.m.) from Ravi Mahabir, Dillon Consulting Limited, to Tesfaye Gebrezghi, Ontario Ministry of the Environment, describing the considered proposal and including the following attachments:

(i) 104328 Letter to MOE on Facility Refinements Aug22,2011 RSM.pdf;
(ii) Guelph screen Layout.pdf

(b) E-mail dated September 8, 2011 (8:57 a.m.) from Ravi Mahabir, Dillon Consulting Limited, to Margaret Wojcik, Ontario Ministry of the Environment, describing the further technical details of the proposal and the cross contamination prevention procedures and including the following attachments:

(i) 104328 Letter to MOE on Facility Refinements Sep2,2011 RSM signed.pdf;

(ii) 104328 Letter to MOE on OWPF Screening Plant Operations Sep8,2011 RSM.pdf

The reason for this amendment to the Certificate of Approval is as follows:

to replace the previously approved two separate screening plants with a single double-deck screening plant to allow for increased working space within the Maturation Hall.

This Notice shall constitute part of the approval issued under Provisional Certificate of Approval No. A170128 dated February 10, 2011, as amended.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days *after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the* *Environmental Protection Act, provides that the Notice requiring the hearing shall state:*

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

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

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

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto, Ontario
M5G 1E5

AND

The Director
Section 39, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted waste disposal site is approved under Section 39 of the Environmental Protection Act.

DATED AT TORONTO this 22nd day of September, 2011

Tes Gebrezghi

Tesfaye Gebrezghi, P.Eng.
Director
Section 39, *Environmental Protection Act*

MW/

c: District Manager, MOE Guelph
Ravi Mahabir, P. Eng., Dillon Consulting Limited

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A170128
Notice No. 2
Issue Date: November 2, 2012

The Corporation of the City of Guelph
1 Carden St
Guelph, Ontario
N1H 3A1

Site Location: 110 Dunlop Drive
110 Dunlop Dr
Guelph City, County of Wellington
N1H 6N1

You are hereby notified that I have amended Approval No. A170128 issued on February 10, 2011 and amended on September 22, 2011 for the use and operation of a 29.54 hectare Waste Disposal Site (Transfer/Processing), as follows: , as follows:

The following sub-conditions in Condition 54 are hereby amended as follows:

54. **Service Area, Approved Waste Types, Rates & Storage**

(1.1) The *Composting Site* may only accept solid non-hazardous residential, commercial, institutional or industrial *Organic Waste* from the Provinces of Ontario, limited to the following *Organic Waste* :

(a) Source-Separated *Organic Waste* limited to the following:

(i) food wastes: fruit, vegetable and general table scraps, meat and fish/shellfish products, dairy products, eggs and egg shells, herbs, nuts and seeds, sugar and spices, confectionery products, sauces, bones, pet food, bread, grains, rice, pasta, flour, coffee grounds and tea bags;

(ii) solidified cooking oils and cooked or raw grease and fats from residential sources only;

(iii) paper fibres: soiled paper towels, tissues, paper plates, coffee filters, soiled paper food packaging items such as boxboard, cardboard, newspaper, and other paper fibre packaging materials;

(iv) fresh flowers, houseplants and their soil, hair, pet fur, feathers and sawdust, wood shavings;

(v) ashes from residential sources only;

(vi) pet waste that is not collected or encased in a bag; and
(vii) pet litter box or bedding wastes, including the intermingled pet waste;

(b) *Organic Waste* from the industrial, commercial and institutional sources that produce or collect food wastes;

(c) *Leaf and Yard Waste;* and

(d) *Compost* overs as described in the supporting documentation listed in the attached Schedule "A".

(1.2) (a) A minimum of eight (8) months prior to accepting *Organic Waste* from any new source at the *Site* , the *Owner* shall provide written notice to the *District Manager* of its intent to commence acceptance of the new waste .

(b) The *Owner* shall submit to the *District Manager* the following information regarding the new waste source in writing at least six (6) weeks prior to receiving the new waste identified in Condition 54 (1.2)(a):

(i) the name and location of the generator,
(ii) the date the *Owner* proposes to commence accepting the waste at the *Site* ,
(iii) description of the constituent components of the waste being accepted,
(iv) confirmation whether inclusion of the waste component referenced above in Condition 54 (1.2)(a) is characterized as incidental or inadvertent,
(v) information related to the handling and storage of the waste prior to its delivery to the *Site* , and
(vi) all operational plans the *Owner* proposes for integrating the processing of waste from the new source into the waste stream currently being processed at the Site.

(4) (d) i. The *Owner* shall not accept at the *Composting Site* any *Organic Waste* that is collected through a waste collection program that allows use of bags, except the waste that is generated in and collected by the City of Guelph and in accordance with Table 1 entitled "Proposed Phase-out of Plastic Bag Usage in Organics Collection" included in Item #40 of the attached Schedule "A";

ii. Notwithstanding Condition 54 (4)(d) (i) above, the *Owner* is allowed to accept *Organic Waste* that has been placed in a biodegradable certified compostable bag.

iii. The *Owner* shall ensure that any *Organic Waste* accepted at the *Site* that is generated outside of the *City* that is collected through a waste collection program will only be collected in biodegradable certified compostable bags in accordance with Item 56 in Schedule "A".

The following Item is hereby added to Schedule "A":

56. Environmental Compliance Approval Application submitted by the City of Guelph requesting amendment to Condition No. 54 (4)(d). The application was signed and dated by Bill Shields, Supervisor of Goverance and Compliance on October 3, 2012. The supporting documentation for the application include the following:

    a. ECA Amendment Outline prepared by Golder Associates which consists of a letter dated October 2, 2012 addressed to Mr. Bill Shields, City of Guelph from Ms Amy Burke and Mr. Michael Cant, Golder Associates (Project No. 12-1188-0007);
    b. Public Liaison Committee Comments and Responses prepared by the City of Guelph which includes:

        i. Memorandum dated February 10, 2010 entitled "Addendum to ESDM Report for City of Guelph OWPF Responses to Request Information/Clarification from MOE" addressed to Bijal Shah, Ministry of the Environment from Ravi Mahabir and Sean Capstick, Golder Associates; and
        ii. Memorandum dated May 4, 2010 entitled "Summary of Key Items Discussed at April 29 Meeting with MOE" addressed to Tes Gebrezghi, Bijal Shah and Margaret Wojcik, Ministry of the Environment from Ravi Mahabir and Sean Capstick, Golder Associates; and

    c. ECA Amendment Support Letter provided by Wellington Organix Inc. which consists of a letter dated August 29, 2012 addressed to Mr. David Gordon, City of Guelph from Mr. Mark Jared, Wellington Organix.

The reason(s) for this amendment to the Approval are as follows:

1. *The reason for the amendment to Condition 54 (1.1) and (1.2) is to ensure the City notifies the Ministry should the City start to accept waste from other clients.*

2. *The reason for the amendment to Condition 54 (4)(d) is to permit the City of Guelph to accept incoming waste in certified biogradeable compostable bags as the City has shown that operational changes have addressed odour issues at the Site and the restriction on waste being accepted in plastic bags is longer required.*

This Notice shall constitute part of the approval issued under Approval No. A170128 dated February 10, 2011

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

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

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

The Notice should also include:

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

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

This Notice must be served upon:

The Secretary* Environmental Review Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5	AND	The Director appointed for the purposes of Part II.1 of the Environmental Protection Act Ministry of the Environment 2 St. Clair Avenue West, Floor 12A Toronto, Ontario M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

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

DATED AT TORONTO this 2nd day of November, 2012

Tes Gebrezghi

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

DG/
c: District Manager, MOE Guelph

Amy Burke, Golder Associates Ltd.

CONTENT COPY OF ORIGINAL

Ministry of the Environment
Ministère de l'Environnement

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER A170128
Notice No. 3
Issue Date: January 24, 2013

The Corporation of the City of Guelph
1 Carden St
Guelph, Ontario
N1H 3A1

Site Location: 110 Dunlop
110 Dunlop Dr , Guelph Organic Waste Composting Facility,
Guelph City, County of Wellington
N1H 6N1

You are hereby notified that I have amended Approval No. A170128 issued on February 10, 2011 and amended on September 22, 2011 and November 2, 2012 forthe establishment and operation of a Waste Disposal Site (Transfer and Processing) consisting of a 29.54 hectare of property for the purposes of composting, multi-material recovery, and waste transfer to serve the municipalities and businesses of the Province of Ontario, the State of New York, the State of Michigan and Municipal Hazardous and Special Waste Transfer Station serving the County of Wellington and City of Guelph,

to be used for:

a) the use and operation of an Organic Waste Processing Facility composting of the following categories of waste (Note: Use of the site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); organic non-hazardous waste from residential, industrial, commercial and institutional sources limited to a maximum Site indoor storage capacity of 8,500 tonnes;

b) the use and operation of a Material Recovery Facility for processing, transfer and temporary storage of the following categories of waste (Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); municipal waste including food and beverage cans, cardboard, glass, newspaper, plastic, waste electrical and electronic equipment and other such materials as would be collected by means of the source separated dry waste collection system limited to a maximum indoor storage capacity of 3850 tonnes and having an outdoor storage area for recyclable waste and leaf and yard waste that is located to the west of the Organic Waste Processing Facility;

c) the use and operation of a Municipal Hazardous and Special Waste facility for the transfer and temporary storage of the following categories of waste (Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); Municipal Hazardous and Special Waste limited to the following waste classes; 112, 121, 145, 146, 148, 212, 213, 221, 242, 251, 252, 261, 263, 269, 312, and 331 as outlined in the New Ontario Waste Classes January 1986 limited to a maximum Site storage capacity of 15 tonnes; and

d) the use and operation of a Waste Disposal Site (Transfer) for non-hazardous solid industrial waste (Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval);from industrial, commercial and institutional sources, commercial waste and domestic waste, with an indoor storage maximum capacity of 795 tonnes and outdoor storage areas for leaf and yard waste and for recyclable waste.

, as follows:

The following Definition is hereby amended as follows:

(aaa) "**Site**" means the 29.54 hectare Waste Disposal Site (Processing and Transfer) for the purposes of receipt, storage, processing and transfer of waste by *Composting*, waste transfer,and multi-material recovery, to serve the municipalities and businesses of the Province of Ontario, the State of New York, the State of Michigam and *Municipal Hazardous and Special Transfer Waste Station*, serving the County of Wellington and City of Guelph located on Lot 4 and 5 Concession 1, Division C, Guelph, Ontario as shown on Reference Plan 61R-5574;

The following Condition is hereby revoked:

56. (6) **Odour Control:**

(a) The *Owner* shall maintain a negative air pressure atmosphere within the *Processing Building,* as compared to the ambient atmospheric pressure, at all times;

The following Conditions are hereby amended as follows:

Public Liaison Committee

29. (1) The *Owner* shall invite the following groups to provide input and/or comments into preparation of the Terms of Reference for the *Public Liaison Committee (ToR PLC):*

(a) home owners within 2,000 metres of the *Site*;
(b) any interested non-governmental organization (NGOs); and
(c) any interested person(s) or group(s);

(2) (a) The *Owner* shall consider all input and/or comments submitted by the groups listed above during preparation of the *ToR PLC*; and

(b) A minimum of ninety (90) days prior to the receipt of the *Waste* at the *Site*, the *Owner* shall prepare and submit to the *District Manager* the *ToR PLC*, including documentation demonstrating consideration of all public input and/or comments received, for written concurrence of the *District Manager;*

(3) The *ToR PLC* shall be amended from time to time according to appropriate amending procedures identified within the content of the *ToR PLC.* Any amendment to the *ToR PLC* must be agreed to by the *District Manager* prior to its implementation;

(4) Within sixty (60) days from the *District Manager`s* concurrence to the *ToR PLC,* the *Owner* shall take all reasonable steps to establish a *Public Liaison Committee (PLC)* which shall serve as a forum for dissemination, consultation, review and exchange of information regarding the operation of the *Site*, including environmental monitoring, maintenance, complaint resolution, and new approvals or amendments to existing approvals related to the operation of this *Site*;

(5) The *Owner* shall invite representation from the following groups to participate on the *PLC*:

(a) home owners within 2,000 metres of the *Site;*
(b) any interested NGOs; and
(c) any interested person(s) or group(s);

(6) The number of representatives from each group shall be as specified in the *ToR PLC* approved by the *District Manager;*

(7) No later than ninety (90) days from the *District Manager`s* concurrence to the *ToR PLC,* the *Owner* shall submit to the *District Manager* a written report that details steps to be taken by the *Owner* to establish, maintain and participate in a *PLC*. This report shall include the identification of each of the representatives that have been invited to participate in the *PLC*;

(8) A copy of the Annual Report that is required by Conditions 52 shall be provided to the *Public Liaison Committee* at the first scheduled meeting following March 31st; and

(9) The *City* shall allow reasonable access to the *Site* for any member of the *Public Liaison Committee;*

40. (a) The *City* shall ensure that only municipal waste recyclable material, generated within the Province of Ontario, the State of New York and the State of Michigan is received at this *Site;*

54. (1.2) (a) A minimum of **six (6)** months prior to accepting *Organic Waste* from any new source at the *Site*, the *Owner* shall provide written notice to the *District Manager* of its intent to commence acceptance of the new waste .

The following Item is hereby added to Schedule "A":

57. Environmental Compliance Approval Application requesting that Condition 40 (a) relating to the service area be amended. The application was signed by Mr. Bill Shields, Supervisor of Governance and Compliance, City of Guelph and dated August 2, 2012.

58. Letter dated November 2, 2012 addressed to Mr. Dale Gable, Ministry of the Environment from Mr. Bill Shields, Supervisor of Governance and Compliance, City of Guelph requesting Condition 56 (6)(a) be revoked.

The reasons for this amendment to the Approval are as follows:

1. The reason for the revocation of Condition 56 (6)(a) is the requirement to maintain negative air pressure is addressed with the ECA related to the air. This condition is a duplicate requirement.

2. The reason for the amendment to Condition 29 is to ensure the PLC is an exchange of information for the entire Site and not limited to the Composting Site.

3. The reason for the amendment to Condition No. 40 is to approve the service area expansion to include the State of New York as applied for by the City. This is to ensure the facility and equipment can operate at its peak efficiency.

4. The reason for the amendment to Condition 54 (1.2)(a) which corrects an administrative error in the last notice.

This Notice shall constitute part of the approval issued under Approval No. A170128 dated February 10, 2011

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

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

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

The Notice should also include:

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

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

This Notice must be served upon:

The Secretary* Environmental Review Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5	AND	The Director appointed for the purposes of Part II.1 of the Environmental Protection Act Ministry of the Environment 2 St. Clair Avenue West, Floor 12A Toronto, Ontario M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

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

DATED AT TORONTO this 24th day of January, 2013

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

DG/
c: District Manager, MOE Guelph
Amy Burke, Golder Associates Ltd.

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER A170128
Notice No. 3
Issue Date: January 24, 2013

The Corporation of the City of Guelph
1 Carden St
Guelph, Ontario
N1H 3A1

Site Location: 110 Dunlop
110 Dunlop Dr , Guelph Organic Waste Composting Facility,
Guelph City, County of Wellington
N1H 6N1

You are hereby notified that I have amended Approval No. A170128 issued on February 10, 2011 and amended on September 22, 2011 and November 2, 2012 for the establishment and operation of a Waste Disposal Site (Transfer and Processing) consisting of a 29.54 hectare of property for the purposes of composting, multi-material recovery, and waste transfer to serve the municipalities and businesses of the Province of Ontario, the State of New York, the State of Michigan and Municipal Hazardous and Special Waste Transfer Station serving the County of Wellington and City of Guelph,

to be used for:

a) the use and operation of an Organic Waste Processing Facility composting of the following categories of waste (Note: Use of the site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); organic non-hazardous waste from residential, industrial, commercial and institutional sources limited to a maximum Site indoor storage capacity of 8,500 tonnes;

b) the use and operation of a Material Recovery Facility for processing, transfer and temporary storage of the following categories of waste (Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); municipal waste including food and beverage cans, cardboard, glass, newspaper, plastic, waste electrical and electronic equipment and other such materials as would be collected by means of the source separated dry waste collection system limited to a maximum indoor storage capacity of 3850 tonnes and having an outdoor storage area for recyclable waste and leaf and yard waste that is located to the west of the Organic Waste Processing Facility;

c) *the use and operation of a Municipal Hazardous and Special Waste facility for the transfer and temporary storage of the following categories of waste (Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); Municipal Hazardous and Special Waste limited to the following waste classes; 112, 121, 145, 146, 148, 212, 213, 221, 242, 251, 252, 261, 263, 269, 312, and 331 as outlined in the <u>New Ontario Waste Classes</u> January 1986 limited to a maximum Site storage capacity of 15 tonnes; and*

d) *the use and operation of a Waste Disposal Site (Transfer) for non-hazardous solid industrial waste (Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval);from industrial, commercial and institutional sources, commercial waste and domestic waste, with an indoor storage maximum capacity of 795 tonnes and outdoor storage areas for leaf and yard waste and for recyclable waste.*

, as follows:

The following Definition is hereby amended as follows:

(aaa) "**Site**" means the 29.54 hectare Waste Disposal Site (Processing and Transfer) for the purposes of receipt, storage, processing and transfer of waste by *Composting* , waste transfer,and multi-material recovery, to serve the municipalities and businesses of the Province of Ontario, the State of New York, the State of Michigam and *Municipal Hazardous and Special Transfer Waste Station* , serving the County of Wellington and City of Guelph located on Lot 4 and 5 Concession 1, Division C, Guelph, Ontario as shown on Reference Plan 61R-5574;

The following Condition is hereby revoked:

56. (6) **Odour Control:**

(a) The *Owner* shall maintain a negative air pressure atmosphere within the *Processing Building,* as compared to the ambient atmospheric pressure, at all times;

The following Conditions are hereby amended as follows:

Public Liaison Committee

29. (1) The *Owner* shall invite the following groups to provide input and/or comments into preparation of the Terms of Reference for the *Public Liaison Committee (ToR PLC):*

(a) home owners within 2,000 metres of the *Site* ;
(b) any interested non-governmental organization (NGOs); and
(c) any interested person(s) or group(s);

(2) (a) The *Owner* shall consider all input and/or comments submitted by the groups listed above during preparation of the *ToR PLC* ; and

(b) A minimum of ninety (90) days prior to the receipt of the *Waste* at the *Site* , the *Owner* shall prepare and submit to the *District Manager* the *ToR PLC* , including documentation demonstrating consideration of all public input and/or comments received, for written concurrence of the *District Manager;*

(3) The *ToR PLC* shall be amended from time to time according to appropriate amending procedures identified within the content of the *ToR PLC* . Any amendment to the *ToR PLC* must be agreed to by the *District Manager* prior to its implementation;

(4) Within sixty (60) days from the *District Manager`s* concurrence to the *ToR PLC,* the *Owner* shall take all reasonable steps to establish a *Public Liaison Committee (PLC)* which shall serve as a forum for dissemination, consultation, review and exchange of information regarding the operation of the *Site* , including environmental monitoring, maintenance, complaint resolution, and new approvals or amendments to existing approvals related to the operation of this *Site* ;

(5) The *Owner* shall invite representation from the following groups to participate on the *PLC* :

(a) home owners within 2,000 metres of the *Site;*
(b) any interested NGOs; and
(c) any interested person(s) or group(s);

(6) The number of representatives from each group shall be as specified in the *ToR PLC* approved by the *District Manager;*

(7) No later than ninety (90) days from the *District Manager`s* concurrence to the *ToR PLC,* the *Owner* shall submit to the *District Manager* a written report that details steps to be taken by the *Owner* to establish, maintain and participate in a *PLC* . This report shall include the identification of each of the representatives that have been invited to participate in the *PLC* ;

(8) A copy of the Annual Report that is required by Conditions 52 shall be provided to the *Public Liaison Committee* at the first scheduled meeting following March 31st; and

(9) The *City* shall allow reasonable access to the *Site* for any member of the *Public Liaison Committee;*

40. (a) The *City* shall ensure that only municipal waste recyclable material, generated within the Province of Ontario, the State of New York and the State of Michigan is received at this *Site;*

54. (1.2) (a) A minimum of **six (6)** months prior to accepting *Organic Waste* from any new source at the *Site* , the *Owner* shall provide written notice to the *District Manager* of its intent to commence acceptance of the new waste .

The following Item is hereby added to Schedule "A":

57. Environmental Compliance Approval Application requesting that Condition 40 (a) relating to the service area be amended. The application was signed by Mr. Bill Shields, Supervisor of Governance and Compliance, City of Guelph and dated August 2, 2012.

58. Letter dated November 2, 2012 addressed to Mr. Dale Gable, Ministry of the Environment from Mr. Bill Shields, Supervisor of Governance and Compliance, City of Guelph requesting Condition 56 (6)(a) be revoked.

The reasons for this amendment to the Approval are as follows:

1. The reason for the revocation of Condition 56 (6)(a) is the requirement to maintain negative air pressure is addressed with the ECA related to the air. This condition is a duplicate requirement.

2. The reason for the amendment to Condition 29 is to ensure the PLC is an exchange of information for the entire Site and not limited to the Composting Site.

3. The reason for the amendment to Condition No. 40 is to approve the service area expansion to include the State of New York as applied for by the City. This is to ensure the facility and equipment can operate at its peak efficiency.

4. The reason for the amendment to Condition 54 (1.2)(a) which corrects an administrative error in the last notice.

This Notice shall constitute part of the approval issued under Approval No. A170128 dated February 10, 2011

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

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

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

The Notice should also include:

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

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

This Notice must be served upon:

The Secretary* Environmental Review Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5	AND	The Director appointed for the purposes of Part II.1 of the Environmental Protection Act Ministry of the Environment 2 St. Clair Avenue West, Floor 12A Toronto, Ontario M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

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

DATED AT TORONTO this 24th day of January, 2013

THIS NOTICE WAS MAILED
ON Jan. 29, 2013
9C
(Signed)

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

DG/
c: District Manager, MOE Guelph
Amy Burke, Golder Associates Ltd. ✓